Answers

1. **Answer: d**

Explanation:

अशुद्ध वर्तनी वाले शब्द की पहचान

इस प्रश्न का उद्देश्य दिए गए शब्दों में से उस शब्द को पहचानना है जिसकी वर्तनी (spelling) सही नहीं है। हमें यह पता लगाना है कि कौन सा शब्द व्याकरण और वर्तनी के नियमों के अनुसार गलत लिखा गया है।

विकल्पों का विश्लेषण

आइये प्रत्येक विकल्प की वर्तनी की जाँच करें:

- **दधीचि:** यह ऋषि दधीचि का सही नाम है। इसकी वर्तनी शुद्ध है।
- **याज्ञवल्क्य:** यह एक प्रसिद्ध ऋषि का नाम है। इसकी वर्तनी भी शुद्ध है।
- **निवृत्ति:** इस शब्द का अर्थ है समाप्ति या अवकाश। इसकी वर्तनी 'नि' + 'वृत्ति' = 'निवृत्ति' सही है।
- **घनिष्ट:** यह शब्द 'घनिष्ठ' का अशुद्ध रूप है।

घनिष्ठ शब्द की सही वर्तनी

सही वर्तनी 'घनिष्ठ' होती है, जिसमें 'ठ' अक्षर का प्रयोग होता है, न कि 'ट'। 'घनिष्ठ' का अर्थ होता है - बहुत करीबी या अंतरंग।

अतः, दिए गए विकल्पों में **घनिष्ट** शब्द की वर्तनी अशुद्ध है।

निष्कर्ष

सही वर्तनी वाले शब्द हैं: दधीचि, याज्ञवल्क्य, निवृत्ति।

अशुद्ध वर्तनी वाला शब्द है: घनिष्ट।

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2. **Answer: c**

Explanation:

वाक्य 'उसे मृत्यु-दंड की सजा मिली' में अशुद्धि का विश्लेषण

प्रश्नगत वाक्य का निरिक्षण

दिए गए वाक्य का विश्लेषण करते हैं: **'उसे मृत्यु-दंड की सजा मिली'**। इस वाक्य में एक व्याकरणिक अशुद्धि है, जिसे हमें पहचानना है।

त्रुटि का स्पष्टीकरण: समानार्थी शब्दों का दोहराव

इस वाक्य में मुख्य अशुद्धि दो समानार्थी शब्दों के अनावश्यक प्रयोग से उत्पन्न हुई है:

- **'मृत्यु-दंड'** शब्द में 'दंड' का अर्थ है 'सजा' या 'penalty'। 'मृत्यु-दंड' का अर्थ हुआ 'मृत्यु की सजा' या 'death penalty'।
- **'सजा'** शब्द का अर्थ भी 'punishment' होता है।

जब हम कहते हैं 'मृत्यु-दंड की सजा', तो हम प्रभावी रूप से 'मृत्यु की सजा की सजा' या 'death penalty's punishment' कह रहे होते हैं। यह शब्दों का दोहराव है, जो वाक्य को अशुद्ध बनाता है।

सही प्रयोग इस प्रकार हो सकता था:

- **'उसे मृत्यु-दंड मिला।'** (अर्थात्, उसे मृत्यु की सजा मिली।)
- या
- **'उसे मृत्यु की सजा मिली।'** (अर्थात्, उसे मृत्यु की सजा मिली।)

इसलिए, विकल्प 3, जो बताता है कि **'दण्ड और सजा समानार्थी शब्दों का प्रयोग हुआ है'**, सही कारण स्पष्ट करता है।

अन्य विकल्पों का मूल्यांकन

- **विकल्प 1: संस्कृत के शब्दों का प्रयोग हुआ है।** - हिंदी भाषा में संस्कृत के शब्दों का प्रयोग सामान्य और स्वीकार्य है। यह कोई अशुद्धि नहीं है। 'दंड' एक संस्कृत मूल का शब्द है जो हिंदी में व्यापक रूप से प्रयुक्त होता है।

- **विकल्प 2: विदेशी शब्द 'सजा' का प्रयोग हुआ है।** - 'सजा' शब्द भले ही फ़ारसी मूल का हो, पर यह हिंदी में सामान्य रूप से स्वीकृत और प्रयुक्त शब्द है। केवल विदेशी शब्द का प्रयोग वाक्य की अशुद्धि का मुख्य कारण नहीं है, खासकर जब वह भाषा में घुलमिल गया हो। यहाँ मुख्य समस्या दोहराव है।
- **विकल्प 4: कोई अशुद्धि नहीं है।** - जैसा कि ऊपर स्पष्ट किया गया है, वाक्य में समानार्थी शब्दों के दोहराव की अशुद्धि मौजूद है।

निष्कर्ष

वाक्य **'उसे मृत्यु-दंड की सजा मिली'** में 'मृत्यु-दंड' (जिसमें 'दंड' निहित है) और 'सजा' समानार्थी शब्दों का दोहराव होने के कारण अशुद्धि है।

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3. **Answer: b**

Explanation:

खड़ी बोली हिंदी: एक परिचय

खड़ी बोली हिंदी भाषा की एक प्रमुख बोली है, जो आधुनिक मानक हिंदी और उर्दू भाषाओं का आधार है। इस बोली का विकास मुख्य रूप से दिल्ली और उसके आसपास के क्षेत्रों में हुआ, जो प्राचीन 'कुरु' राज्य का हिस्सा था।

खड़ी बोली का नामकरण और संबंधित शब्दावली

किसी भी भाषा या बोली का नामकरण अक्सर उसके भौगोलिक क्षेत्र, सामाजिक उपयोग या ऐतिहासिक पृष्ठभूमि पर आधारित होता है। खड़ी बोली हिंदी के संदर्भ में, इसके नाम और पहचान को समझना महत्वपूर्ण है।

'कौरवी' नाम का महत्व

खड़ी बोली को 'कौरवी' नाम से भी जाना जाता है। यह नाम 'कुरु' क्षेत्र से लिया गया है, जो वर्तमान में पश्चिमी उत्तर प्रदेश और हरियाणा के हिस्सों को संदर्भित करता है। भाषाविदों ने इस क्षेत्र में बोली जाने वाली बोली को, जो खड़ी बोली का आधार बनी, 'कौरवी' कहा। इस प्रकार, 'कौरवी' खड़ी बोली का एक ऐतिहासिक और भौगोलिक रूप से उपयुक्त वैकल्पिक नाम है।

अन्य विकल्पों का विश्लेषण

आइए अन्य दिए गए विकल्पों पर विचार करें कि वे खड़ी बोली के सही नाम क्यों नहीं हैं:

- **भारती:** यह शब्द 'भारत' या 'भारतीय' से संबंधित है और किसी विशेष बोली का प्रतिनिधित्व नहीं करता है। यह एक सामान्य शब्द है।
- **कौरवी:** यह खड़ी बोली का एक सही और स्वीकृत वैकल्पिक नाम है, जो इसके भौगोलिक उद्गम से जुड़ा है।
- **हरियाणवी:** हरियाणवी एक अलग बोली है जो मुख्य रूप से हरियाणा राज्य में बोली जाती है। यद्यपि यह खड़ी बोली के निकट है और इससे प्रभावित है, यह खड़ी बोली का पर्यायवाची नहीं है।
- **हिंदी:** 'हिंदी' एक व्यापक शब्द है जो कई बोलियों और भाषाओं को शामिल करता है। खड़ी बोली हिंदी की मुख्य बोलियों में से एक है, लेकिन 'हिंदी' स्वयं खड़ी बोली का दूसरा विशिष्ट नाम नहीं है।

निष्कर्ष

उपरोक्त विश्लेषण के आधार पर, खड़ी बोली हिंदी का एक अन्य सही और सटीक नाम 'कौरवी' है, जो इसके ऐतिहासिक और भौगोलिक जड़ों को दर्शाता है।

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4. **Answer: a**

Explanation:

क्रिया का काल: वर्तमान में जारी क्रिया को समझना

व्याकरण में,**काल** (Tense) क्रिया के होने के समय को दर्शाता है। काल के मुख्य तीन भेद होते हैं:**भूत काल** (Past Tense), **वर्तमान काल** (Present Tense), और **भविष्यत् काल** (Future Tense)। यह प्रश्न विशेष रूप से **वर्तमान काल** से संबंधित है, जो वर्तमान समय में हो रही क्रियाओं का बोध कराता है।

वर्तमान काल के भेद और प्रश्न का विश्लेषण

वर्तमान काल को क्रिया की स्थिति के आधार पर विभिन्न प्रकारों में विभाजित किया गया है। आइए प्रश्न में दी गई परिभाषा 'जो क्रिया अभी हो रही है' का विश्लेषण करें और विकल्पों को समझें:

- **'जो क्रिया अभी हो रही है'** का अर्थ है ऐसी क्रिया जो वर्तमान क्षण में जारी है, पूरी नहीं हुई है।

विकल्पों का विस्तृत विश्लेषण

यहाँ दिए गए विकल्पों का विस्तृत विश्लेषण है:

विकल्प	काल का नाम	अर्थ और उदाहरण	प्रश्न से संबंध
1. अपूर्ण वर्तमान	Present Continuous/Imperfect	यह काल वर्तमान में जारी क्रिया को दर्शाता है। क्रिया अभी पूरी नहीं हुई है। *उदाहरण: राम पढ़ रहा है।*	**यह प्रश्न की परिभाषा से सीधा मेल खाता है।**
2. सामान्य वर्तमान	Simple Present	यह काल वर्तमान की सामान्य या आदतन क्रिया को दर्शाता है। *उदाहरण: राम पढ़ता है।*	यह 'अभी हो रही' क्रिया का बोध नहीं कराता।
3. संदिग्ध वर्तमान	Present Doubtful	यह काल वर्तमान की क्रिया के होने में संदेह व्यक्त करता है। *उदाहरण: राम पढ़ रहा होगा।*	यह 'अभी हो रही' क्रिया की निश्चितता नहीं बताता, बल्कि संदेह व्यक्त करता है।
4. संदिग्ध भूत	Past Doubtful	यह काल भूतकाल की क्रिया के होने में संदेह व्यक्त करता है। *उदाहरण: राम पढ़ा होगा।*	यह वर्तमान से संबंधित नहीं है।
5.	-	-	यह एक खाली विकल्प है।

सही काल की पहचान

प्रश्न 'जो क्रिया अभी हो रही है' के बारे में पूछता है। इस परिभाषा के अनुसार, क्रिया वर्तमान में चल रही है और अपूर्ण है।

- **अपूर्ण वर्तमान** काल ठीक इसी स्थिति को व्यक्त करता है - यानी, क्रिया वर्तमान समय में जारी है।
- अन्य विकल्प जैसे सामान्य वर्तमान (आदत/नित्य क्रिया), संदिग्ध वर्तमान (संदेह युक्त वर्तमान क्रिया) और संदिग्ध भूत (संदेह युक्त भूत क्रिया) प्रश्न की सीधी परिभाषा से मेल नहीं खाते हैं।

इसलिए, वह क्रिया जो वर्तमान में चल रही है, **अपूर्ण वर्तमान** कहलाती है।

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5. **Answer: a**

Explanation:

समास 'चरणकमल' का विस्तृत विश्लेषण

यह प्रश्न हिंदी व्याकरण में 'समास' (compound) की पहचान से संबंधित है। हमें 'चरणकमल' शब्द में प्रयुक्त समास का प्रकार बताना है।

1. 'चरणकमल' शब्द को समझना

- 'चरणकमल' दो शब्दों के मेल से बना है: **चरण** (पैर) और **कमल** (फूल)।
- इस शब्द का अर्थ है 'कमल के समान चरण' या 'कमल जैसे पैर'।
- यहाँ, 'चरण' (पैर) उपमेय (जिसकी तुलना की जा रही है) है और 'कमल' (फूल) उपमान (जिससे तुलना की जा रही है) है।
- यह संबंध 'चरण' की विशेषता या सुंदरता को दर्शाने के लिए है, जिसमें पैरों की तुलना कमल से की गई है।

2. विभिन्न समासों की परिभाषाएँ

आइये, विकल्पों में दिए गए समासों के बारे में संक्षिप्त जानकारी देखें:

- **कर्मधारय समास**: इस समास में दोनों पद प्रधान होते हैं, लेकिन विशेष रूप से पहला पद (विशेषण) दूसरे पद (विशेष्य) की विशेषता बताता है, या दोनों पदों में उपमेय-उपमान का संबंध होता है। जैसे: नीला है जो गगन = नीलागगन।
- **बहुव्रीहि समास**: इस समास में कोई भी पद प्रधान नहीं होता, बल्कि दोनों पद मिलकर किसी तीसरे पद की ओर संकेत करते हैं। जैसे: दश है आनन जिसके = दशानन (रावण)।
- **द्वंद्व समास**: इस समास में दोनों पद प्रधान होते हैं और उनके बीच 'और', 'तथा', 'या', 'अथवा' जैसे योजक छिपे होते हैं। जैसे: माता और पिता = माता-पिता।
- **तत्पुरुष समास**: इस समास में दूसरा पद प्रधान होता है और पहले पद का कारक चिन्ह (जैसे - को, से, का, की, में, पर) लुप्त होता है। जैसे: राजा का कुमार = राजकुमार।

3. 'चरणकमल' में समास का निर्धारण

अब हम 'चरणकमल' का विश्लेषण करते हैं:

- 'चरणकमल' का विग्रह (अर्थ विस्तार) 'कमल के समान चरण' होता है।
- इस विग्रह में, 'चरण' (उपमेय) की तुलना 'कमल' (उपमान) से की गई है।
- यह उपमेय-उपमान का संबंध कर्मधारय समास की मुख्य विशेषता है।
- पहले पद 'चरण' की तुलना दूसरे पद 'कमल' से की जा रही है, जहाँ 'कमल' यहाँ 'चरण' के लिए एक विशेषण की तरह कार्य कर रहा है (अर्थात् कमल जैसे चरण)।
- यह संबंध कर्मधारय समास के अंतर्गत आता है।
- यह बहुव्रीहि समास नहीं है क्योंकि यह किसी तीसरे व्यक्ति या वस्तु की ओर संकेत नहीं कर रहा है।
- यह द्वंद्व समास भी नहीं है क्योंकि दोनों पदों का महत्व समान नहीं है और 'और' से योजक नहीं है।
- यह तत्पुरुष समास भी नहीं है क्योंकि यहाँ कोई कारक चिन्ह लुप्त नहीं है, बल्कि तुलना का संबंध है।

निष्कर्ष

उपरोक्त विश्लेषण के आधार पर, 'चरणकमल' शब्द में **कर्मधारय समास** है।

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6. **Answer: a**

Explanation:

नयन का शुद्ध सन्धि विच्छेद समझना

यह प्रश्न 'नयन' शब्द के सही सन्धि विच्छेद को पहचानने के बारे में है। 'नयन' शब्द का अर्थ 'आँख' होता है। सन्धि विच्छेद का अर्थ है किसी शब्द को उसके मूल सार्थक शब्दों में तोड़ना।

अयादि संधि के नियम

इस प्रश्न को हल करने के लिए हमें 'अयादि संधि' (Ayaadi Sandhi) के नियमों को समझना होगा। अयादि संधि स्वर संधि का एक प्रकार है। इसके मुख्य नियम इस प्रकार हैं:

- यदि 'ए' (e), 'ऐ' (ai), 'ओ' (o), या 'औ' (au) के बाद कोई भिन्न स्वर आता है, तो
- 'ए' का 'अय्' (ay) हो जाता है।
- 'ऐ' का 'आय्' (aay) हो जाता है।
- 'ओ' का 'अव' (av) हो जाता है।

- 'औ' का 'आव' (aav) हो जाता है।

इसे सूत्र रूप में इस प्रकार लिखा जा सकता है:

ए + स्वर = अय् + स्वर
(जैसे: ने + अन = न् + ए + अ + न = न् + अय् + अ + न = नयन)

'नयन' का विश्लेषण

आइए हम दिए गए विकल्पों का विश्लेषण करें:

- **विकल्प 1: ने + अन**
  - यहाँ पहला शब्द 'ने' है, जिसका अंतिम स्वर 'ए' है।
  - दूसरा शब्द 'अन' है, जिसका पहला स्वर 'अ' है।
  - अयादि संधि के नियम के अनुसार, 'ए' + 'अ' का मेल 'अय्' होता है।
  - तो, ने + अन ⇒ न् + ए + अ + न ⇒ न् + अय् + अ + न ⇒ नयन।
  - यह 'नयन' शब्द बनाता है, जो सही है।
- **विकल्प 2: ने + अयन**
  - यह विच्छेद शब्द के अर्थ और संरचना के अनुसार सही नहीं है।
  - यदि सन्धि की जाए: ने + अयन ⇒ न् + ए + अ + य + न ⇒ न् + अय् + अ + य + न ⇒ नययन, जो 'नयन' नहीं है।
- **विकल्प 3: न + अन**
  - यह विच्छेद भी सही नहीं है क्योंकि 'न' एक व्यंजन है और इसे किसी स्वर से अलग नहीं किया जा सकता, या यह 'न' (Na) स्वर से शुरू होता है, जो 'ए', 'ऐ', 'ओ', 'औ' में से नहीं है।
  - न + अन ⇒ नन। यह 'नयन' नहीं बनता।
- **विकल्प 4: नय + अन**
  - यह विच्छेद भी सही नहीं है। 'नय' शब्द का अंत 'य' में होता है, स्वर 'अ' में।
  - नय + अन ⇒ नया + न ⇒ नयना (यदि 'नय' का अंत 'आ' होता)। यह 'नयन' नहीं बनाता।

निष्कर्ष

उपरोक्त विश्लेषण के आधार पर, 'ने + अन' ही 'नयन' शब्द का शुद्ध और व्याकरणिक रूप से सही सन्धि विच्छेद है, जो अयादि संधि के नियमों का पालन करता है।

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7. Answer: c

Explanation:

गद्यांश के आधार पर सबसे प्राचीन वीरता की पहचान

इस प्रश्न का उत्तर देने के लिए, हमें दिए गए हिंदी गद्यांश को ध्यान से पढ़ना होगा और उसमें उल्लिखित विभिन्न प्रकार की वीरता के बारे में जानकारी प्राप्त करनी होगी। गद्यांश बताता है कि जिन कर्मों में कष्ट या हानि सहने का साहस आवश्यक होता है, वे सभी **उत्साह** के अंतर्गत आते हैं।

उत्साह और वीरता के भेद

गद्यांश के अनुसार, साहित्य मीमांसकों ने कष्ट या हानि के प्रकार के आधार पर उत्साह के विभिन्न भेद किए हैं, जैसे:

- युद्धवीर (War hero)
- दानवीर (Generosity hero)
- दयावीर (Compassion hero)

सबसे प्राचीन वीरता का उल्लेख

गद्यांश में स्पष्ट रूप से उल्लेख किया गया है कि इन भेदों में से कौन सा सबसे प्राचीन और प्रधान है। गद्यांश कहता है:

"इनमें **सबसे प्राचीन और प्रधान युद्धवीरता** है, जिसमें आघात, पीड़ा या मृत्यु की परवाह नहीं रहती।"

यह कथन सीधे तौर पर बताता है कि **युद्धवीरता** को सबसे प्राचीन और मुख्य वीरता माना गया है।

विकल्पों का विश्लेषण

आइए दिए गए विकल्पों का विश्लेषण करें:

- **वाक्वीरता**: गद्यांश में इस प्रकार की वीरता का कोई उल्लेख नहीं है।
- **दानवीरता**: गद्यांश में इसका उल्लेख एक भेद के रूप में किया गया है, लेकिन इसे सबसे प्राचीन नहीं बताया गया है।
- **युद्धवीरता**: गद्यांश इसे स्पष्ट रूप से 'सबसे प्राचीन और प्रधान' वीरता बताता है।
- **दयावीरता**: गद्यांश में इसका उल्लेख एक भेद के रूप में किया गया है, लेकिन इसे सबसे प्राचीन नहीं बताया गया है।

निष्कर्ष

गद्यांश में दिए गए विवरण के अनुसार, **युद्धवीरता** ही वह वीरता है जिसे सबसे प्राचीन और प्रधान माना गया है।

इसलिए, सही उत्तर विकल्प 3 है।

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8. **Answer: d**

Explanation:

युद्धवीरता के लिए आवश्यक प्रकृति का विश्लेषण

यह प्रश्न दिए गए गद्यांश के आधार पर **युद्धवीरता** के लिए आवश्यक गुणों के बारे में पूछता है। गद्यांश हमें बताता है कि 'उत्साह' क्या है और इसके विभिन्न रूप क्या हैं।

उत्साह की परिभाषा गद्यांश के अनुसार

- उत्साह वह भावना है जिसमें व्यक्ति किसी भी कार्य को करने के लिए तैयार रहता है, भले ही उसमें कष्ट या हानि उठाने की आवश्यकता हो।
- इस कार्य में व्यक्ति को आनंद मिलता है और वह इसके प्रति उत्सुक रहता है।
- कष्ट या हानि के स्वरूप के आधार पर उत्साह के विभिन्न भेद किए जाते हैं, जैसे युद्धवीर, दानवीर, दयावीर आदि।

युद्धवीरता के प्रमुख लक्षण

गद्यांश विशेष रूप से **युद्धवीरता** पर प्रकाश डालता है:

- **युद्धवीरता** को सबसे प्राचीन और प्रधान प्रकार का उत्साह माना गया है।
- इसमें व्यक्ति को चोट लगने, पीड़ा सहने या मृत्यु का भी भय नहीं रहता।
- गद्यांश स्पष्ट करता है कि केवल कष्ट या पीड़ा सहने का साहस ही पर्याप्त नहीं है। **युद्धवीरता** के लिए उस साहस के साथ **आनंदपूर्ण प्रयत्न** या उसकी **उत्कंठा** (eagerness) का होना भी आवश्यक है।
- इसमें **साहस** और **प्रयत्न** दोनों ही अपनी चरम सीमा पर होते हैं।

विकल्पों का मूल्यांकन

आइए अब दिए गए विकल्पों का मूल्यांकन करें कि कौन सा गद्यांश के अनुसार **युद्धवीरता** के लिए अपेक्षित प्रकृति का सबसे अच्छा वर्णन करता है:

- **चतुराई और भीरुता:** गद्यांश में साहस की बात की गई है, भीरुता (डरपोकपन) की नहीं। इसलिए यह विकल्प सही नहीं है।
- **चंचलता और अस्थिरता:** युद्धवीरता के लिए स्थिर मन और दृढ़ संकल्प की आवश्यकता होती है, न कि चंचलता (fickleness) या अस्थिरता (instability) की। यह विकल्प भी गद्यांश के अनुसार उपयुक्त नहीं है।
- **धृष्टता और साहस:** यद्यपि साहस (courage) एक आवश्यक गुण है, 'धृष्टता' (boldness/rashness) का उल्लेख विशेष रूप से नहीं किया गया है, और यह हमेशा सकारात्मक गुण नहीं होता, खासकर जब यह बिना सोचे-समझे कार्य करने को दर्शाता है। गद्यांश अधिक संतुलित दृष्टिकोण प्रस्तुत करता है।
- **साहस, प्रयत्न और कष्ट सहने का धीरज:** यह विकल्प गद्यांश के मुख्य बिंदुओं से पूरी तरह मेल खाता है। गद्यांश में स्पष्ट रूप से कहा गया है कि **युद्धवीरता** के लिए **साहस**, **प्रयत्न** (effort) और **कष्ट** या **पीड़ा** को सहन करने के लिए **धीरज** (patience/endurance) की आवश्यकता होती है। यह भी उल्लेख किया गया है कि केवल साहस ही नहीं, बल्कि आनंदपूर्ण प्रयत्न या उत्कंठा भी आवश्यक है, जो 'प्रयत्न' और 'धीरज' के विचार में समाहित है।

निष्कर्ष

गद्यांश के विश्लेषण के आधार पर, **युद्धवीरता** के लिए **साहस**, **प्रयत्न** और **कष्ट सहने का धीरज** रखने वाली प्रकृति अपेक्षित है। यह विकल्प गद्यांश में वर्णित उत्साह के सभी आवश्यक घटकों को शामिल करता है।

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9. **Answer: a**

Explanation:

गद्यांश में 'उत्कंठापूर्ण आनंद' का स्पष्टीकरण

यह प्रश्न दिए गए हिंदी गद्यांश के आधार पर 'उत्कंठापूर्ण आनंद' का अर्थ पूछता है। गद्यांश के अनुसार, 'उत्कंठापूर्ण आनंद' उन कर्मों से जुड़ा है जिनमें कष्ट या हानि सहने का साहस आवश्यक होता है।

गद्यांश की पहली पंक्ति स्पष्ट रूप से बताती है: "जिन कर्मों में किसी प्रकार का कष्ट या हानि सहने का साहस अपेक्षित होता है, उन सबके प्रति **उत्कंठापूर्ण आनंद उत्साह** के अन्तर्गत लिया जाता है।"

इससे यह सिद्ध होता है कि 'उत्कंठापूर्ण आनंद' को **उत्साह** के रूप में परिभाषित किया गया है। यह केवल कष्ट सहने की क्षमता नहीं, बल्कि उस कष्ट के प्रति एक प्रफुल्लित प्रयास या उसकी चाहत को भी दर्शाता है।

प्रश्न का विश्लेषण और सही विकल्प का चयन

प्रश्न है: "उत्कंठापूर्ण आनन्द किसके अन्तर्गत लिया जाता है?"

आइए दिए गए विकल्पों का विश्लेषण करें:

- **विकल्प 1:** उत्साह के अन्तर्गत - गद्यांश की पहली पंक्ति सीधे तौर पर यह बताती है कि उत्कंठापूर्ण आनंद 'उत्साह' के अंतर्गत आता है।
- **विकल्प 2:** वीरता के अन्तर्गत - गद्यांश में वीरता (वीरता) का उल्लेख है, लेकिन 'उत्कंठापूर्ण आनंद' को सीधे तौर पर वीरता के अंतर्गत नहीं, बल्कि उत्साह के अंतर्गत बताया गया है। वीरता, उत्साह का एक रूप हो सकती है, लेकिन प्रश्न का सीधा उत्तर 'उत्साह' है।
- **विकल्प 3:** युद्ध के अन्तर्गत - युद्धवीरता का उल्लेख है, पर उत्कंठापूर्ण आनंद को केवल युद्ध तक सीमित नहीं किया गया है।
- **विकल्प 4:** दान के अन्तर्गत - दानवीरता का भी उल्लेख है, लेकिन उत्कंठापूर्ण आनंद का संबंध इससे सीधा नहीं है जैसा कि उत्साह से है।

गद्यांश के अनुसार, जिस कर्म में कष्ट या हानि सहने का साहस अपेक्षित होता है, उसके प्रति जो आनंद होता है, वह **उत्साह** कहलाता है। इसलिए, 'उत्कंठापूर्ण आनंद' सीधे तौर पर **उत्साह** के अंतर्गत आता है।

निष्कर्ष

गद्यांश के आधार पर, सही उत्तर विकल्प 1 है, क्योंकि इसमें स्पष्ट रूप से कहा गया है कि "उत्कंठापूर्ण आनंद **उत्साह** के अन्तर्गत लिया जाता है।"

सही विकल्प: 1. उत्साह के अन्तर्गत

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10. **Answer: a**

Explanation:

गद्यांश के आधार पर वीरता के भेद समझना

यह प्रश्न दिए गए हिंदी गद्यांश के आधार पर साहित्य मीमांसकों द्वारा वर्गीकृत वीरता के विभिन्न भेदों के बारे में पूछता है। गद्यांश हमें बताता है कि किस प्रकार के कर्मों के लिए साहस की आवश्यकता होती है और इन कर्मों में आने वाले कष्ट या हानि के अनुसार वीरता के भी विभिन्न रूप माने जाते हैं।

गद्यांश से मुख्य जानकारी

गद्यांश स्पष्ट रूप से उल्लेख करता है:

- जिन कर्मों में कष्ट या हानि सहने का साहस अपेक्षित होता है, वे **उत्साह** के अंतर्गत आते हैं।
- कष्ट या हानि के प्रकार के आधार पर **उत्साह** के भी भेद किए जाते हैं।
- गद्यांश सीधे तौर पर कहता है, "साहित्य मीमांसकों ने इसी दृष्टि से **युद्धवीर, दानवीर, दयावीर** इत्यादि भेद किये हैं।"

यह वाक्य सीधे प्रश्न का उत्तर देता है कि साहित्य मीमांसकों ने किन भेदों का उल्लेख किया है। इसमें **युद्धवीर** (लड़ाई में वीरता), **दानवीर** (दान देने में वीरता), और **दयावीर** (दया दिखाने में वीरता) का उल्लेख है।

विकल्पों का विश्लेषण

आइए दिए गए विकल्पों की गद्यांश में दी गई जानकारी से तुलना करें:

- **विकल्प 1: युद्धवीर, दानवीर, और दयावीर** - यह गद्यांश में सीधे तौर पर बताए गए भेदों से मेल खाता है।
- **विकल्प 2: कर्मवीर और धर्मवीर** - गद्यांश में इन भेदों का कोई उल्लेख नहीं है।
- **विकल्प 3: अध्यवसायी और ईमानदार** - ये गुण वीरता के भेद के रूप में गद्यांश में नहीं बताए गए हैं।
- **विकल्प 4: शूरवीर और परिश्रमी** - गद्यांश में इन शब्दों का प्रयोग वीरता के विशिष्ट भेदों के रूप में नहीं किया गया है, हालाँकि 'शूरवीर' वीरता का सामान्य अर्थ दे सकता है।

निष्कर्ष

गद्यांश के अनुसार, साहित्य मीमांसकों ने वीरता के मुख्य भेद **युद्धवीर, दानवीर,** और **दयावीर** माने हैं। इसलिए, पहला विकल्प सही उत्तर है क्योंकि यह गद्यांश में दी गई जानकारी से सीधे तौर पर समर्थित है।

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11. Answer: d

Explanation:

गद्यांश और उत्साह के भेद को समझना

यह प्रश्न दिए गए हिंदी गद्यांश पर आधारित है, जिसमें 'उत्साह' की अवधारणा और उसके वर्गीकरण के आधारों पर चर्चा की गई है। गद्यांश को ध्यान से पढ़ने पर, हम समझ सकते हैं कि 'उत्साह' क्या है और साहित्य मीमांसकों ने इसे किन आधारों पर विभिन्न भेदों में वर्गीकृत किया है।

'उत्साह' की परिभाषा गद्यांश के अनुसार

गद्यांश के अनुसार, 'उत्साह' उन सभी कर्मों के प्रति एक प्रकार का आनंदमय उत्साह या जोश है जिनमें किसी प्रकार के **कष्ट** या **हानि** को सहने का **साहस** अपेक्षित होता है। यह केवल कष्ट सहना ही नहीं, बल्कि उस कष्ट या हानि के प्रति एक आनंदपूर्ण प्रयत्न या उसकी उत्कंठा का योग भी है।

उत्साह के भेदों का आधार

गद्यांश स्पष्ट रूप से बताता है कि **उत्साह के भेद** कैसे किए जाते हैं। इसमें लिखा है:

"**कष्ट** या **हानि** के **भेद** के अनुसार **उत्साह** के भी **भेद** हो जाते हैं।"

इसी आधार पर, साहित्य मीमांसकों ने **युद्धवीर**, **दानवीर**, **दयावीर** आदि भेद किए हैं। उदाहरण के लिए, **युद्धवीरता** में **आघात**, **पीड़ा** या **मृत्यु** की परवाह किए बिना **साहस** और **प्रयत्न** चरम पर होते हैं।

विकल्पों का विश्लेषण

आइए दिए गए विकल्पों का विश्लेषण करें कि कौन सा गद्यांश के अनुसार सही है:

- **विकल्प 1: उत्साह के आधार पर** - यह सही नहीं है क्योंकि यह वर्गीकरण का आधार नहीं बताता, बल्कि स्वयं वह शब्द है जिसका वर्गीकरण किया जा रहा है।
- **विकल्प 2: दुर्बलता के आधार पर** - गद्यांश में कहीं भी 'दुर्बलता' का उल्लेख उत्साह के भेदों के आधार के रूप में नहीं किया गया है।
- **विकल्प 3: पीड़ा या आघात के आधार पर** - यद्यपि पीड़ा और आघात उत्साह के भेदों (जैसे युद्धवीर) में शामिल हैं, यह केवल एक हिस्सा है। वर्गीकरण का व्यापक आधार 'कष्ट या हानि के भेद' है, जिसमें पीड़ा या आघात एक प्रकार का कष्ट हो सकता है।
- **विकल्प 4: कष्ट या हानि के भेद के आधार पर** - यह विकल्प सीधे गद्यांश के कथन से मेल खाता है। गद्यांश स्पष्ट करता है कि जिस प्रकार के **कष्ट** या **हानि** का सामना करना पड़ता है, उसी के

अनुसार **उत्साह** के विभिन्न **भेद** (जैसे युद्धवीर, दानवीर) किए जाते हैं।

निष्कर्ष

गद्यांश के अनुसार, **उत्साह के भेद** मुख्य रूप से **कष्ट** या **हानि** के **भेद** के आधार पर किए जाते हैं। इसी आधार पर विभिन्न प्रकार की वीरता का वर्णन मिलता है।

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12. **Answer: b**

Explanation:

मसृण का सही विलोम शब्द समझना

यह प्रश्न हिंदी व्याकरण से संबंधित है और इसमें 'मसृण' शब्द का विलोम (या विपरीतार्थक) शब्द पूछा गया है। 'मसृण' का अर्थ होता है चिकना, कोमल, या मुलायम। हमें दिए गए विकल्पों में से वह शब्द चुनना है जिसका अर्थ 'मसृण' के विपरीत हो।

'मसृण' शब्द का अर्थ

'मसृण' शब्द का प्रयोग किसी सतह की कोमलता या चिकनाई का वर्णन करने के लिए किया जाता है। यह खुरदरा या ऊबड़-खाबड़ होने की विपरीत स्थिति को दर्शाता है।

विलोम शब्द की अवधारणा

विलोम शब्द वे शब्द होते हैं जो एक दूसरे के विपरीत अर्थ रखते हैं। उदाहरण के लिए, 'दिन' का विलोम 'रात' होता है, और 'अच्छा' का विलोम 'बुरा' होता है।

दिए गए विकल्पों का विश्लेषण

आइए, हम प्रत्येक विकल्प का अर्थ देखें और यह समझें कि कौन सा 'मसृण' का सबसे उपयुक्त विलोम है:

- **कम:** इसका अर्थ है 'quantity' में थोड़ा या न्यून। यह 'मसृण' (चिकना) का विलोम नहीं है।
- **रूक्ष:** इसका अर्थ है खुरदरा, रूखा, या कोमल न होना। यह 'मसृण' (चिकना, कोमल) का सीधा विपरीत अर्थ देता है।
- **साबुत:** इसका अर्थ है पूरा या अखंड। इसका 'मसृण' से कोई विपरीत संबंध नहीं है।

- **गाफिल:** इसका अर्थ है बेखबर या असावधान। यह एक मानसिक स्थिति को दर्शाता है, न कि किसी सतह की बनावट को, इसलिए यह 'मसृण' का विलोम नहीं है।

निष्कर्ष

उपरोक्त विश्लेषण के आधार पर, यह स्पष्ट है कि 'रूक्ष' शब्द 'मसृण' का सही विलोम है, क्योंकि 'रूक्ष' का अर्थ खुरदरा या रूखा होता है, जो 'चिकना' या 'कोमल' के विपरीत है।

सही विकल्प

इसलिए, 'मसृण' का विलोम शब्द **रूक्ष** है।

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13. **Answer: b**

Explanation:

'चन्द्रमा' तथा 'ब्राह्मण' के लिये 'एक शब्द' का विश्लेषण

यह प्रश्न हिंदी व्याकरण से संबंधित है, जिसमें 'चन्द्रमा' (चंद्र) और 'ब्राह्मण' (समाज का एक वर्ग) इन दोनों अर्थों को व्यक्त करने वाले 'एक शब्द' की पहचान करनी है। हमें दिए गए विकल्पों में से उस शब्द को चुनना है जो इन दोनों संज्ञाओं के लिए प्रयुक्त होता है।

'द्विज' शब्द का अर्थ विस्तार

सही उत्तर विकल्प **द्विज** है। इस शब्द का विश्लेषण करते हैं:

- **'द्विज' का अर्थ:** 'द्विज' शब्द का शाब्दिक अर्थ है 'दो बार जन्म लेने वाला'।
- **'ब्राह्मण' के संदर्भ में:** हिन्दू समाज व्यवस्था में, ब्राह्मणों को 'द्विज' कहा जाता है क्योंकि उनका एक जन्म माता-पिता से होता है और दूसरा जन्म 'यज्ञोपवीत' ( ) संस्कार के बाद पवित्र धागे को धारण करने के उपरांत माना जाता है, जो उन्हें आध्यात्मिक रूप से पुनः जन्म देता है।
- **'चन्द्रमा' के संदर्भ में:** चन्द्रमा को भी 'द्विज' कहा जाता है क्योंकि वह हर महीने शुक्ल पक्ष में नवचंद्र के रूप में पुनः प्रकट होता है, जिसे उसके दूसरे जन्म के रूप में देखा जाता है।

इस प्रकार, 'द्विज' शब्द चन्द्रमा और ब्राह्मण दोनों के लिए एक सार्थक और सटीक शब्द है।

अन्य विकल्पों का मूल्यांकन

आइए देखें कि अन्य विकल्प इस प्रश्न के लिए उपयुक्त क्यों नहीं हैं:

- **सोम:** 'सोम' शब्द का प्रयोग प्राचीन वैदिक साहित्य में चन्द्रमा के लिए होता है, और यह एक महत्वपूर्ण वैदिक देवता भी हैं। हालाँकि, 'सोम' का प्रयोग सामान्यतः 'ब्राह्मण' के पर्याय के रूप में नहीं किया जाता है।
- **वर्ण:** 'वर्ण' का अर्थ रंग या समाज का वर्ग (जैसे ब्राह्मण, क्षत्रिय, वैश्य, शूद्र) होता है। यह शब्द केवल एक सामाजिक वर्गीकरण को दर्शाता है, न कि चन्द्रमा को।
- **श्रेष्ठ:** 'श्रेष्ठ' का अर्थ होता है सबसे अच्छा या उत्तम। यह एक विशेषण है जिसका प्रयोग किसी भी व्यक्ति या वस्तु की प्रशंसा के लिए किया जा सकता है, लेकिन यह विशेष रूप से 'चन्द्रमा' या 'ब्राह्मण' का पर्याय नहीं है।

निष्कर्ष

उपरोक्त विश्लेषण के आधार पर, यह स्पष्ट है कि केवल 'द्विज' ही वह शब्द है जो 'चन्द्रमा' और 'ब्राह्मण' दोनों के अर्थ को अपने भीतर समाहित करता है।

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14. **Answer: c**

Explanation:

अकर्मक क्रिया को समझना

किसी भी वाक्य में क्रिया के प्रकार को पहचानने के लिए, हमें यह देखना होगा कि क्रिया का फल कर्ता (subject) पर पड़ रहा है या कर्म (object) पर।

- **सकर्मक क्रिया (Transitive Verb):** वह क्रिया जिसका फल कर्ता को छोड़कर कर्म पर पड़ता है। इसे पहचानने के लिए क्रिया से पहले 'क्या' या 'किसे' लगाकर प्रश्न करें, यदि उत्तर मिले तो वह सकर्मक क्रिया है।
- **अकर्मक क्रिया (Intransitive Verb):** वह क्रिया जिसका फल कर्ता पर ही पड़ता है, कर्म पर नहीं। क्रिया से पहले 'क्या' या 'किसे' लगाने पर उत्तर नहीं मिलता।

वाक्य विश्लेषण: अकर्मक क्रिया की पहचान

आइए दिए गए वाक्यों का विश्लेषण करें:

पहला वाक्य: रामू खाना खा रहा है

- क्रिया: खा रहा है
- प्रश्न: रामू क्या खा रहा है?
- उत्तर: खाना
- विश्लेषण: यहाँ कर्म 'खाना' मौजूद है, और क्रिया का फल कर्म पर पड़ रहा है। इसलिए, 'खा रहा है' एक सकर्मक क्रिया है।

दूसरा वाक्य: चालक गाड़ी चलाता है

- क्रिया: चलाता है
- प्रश्न: चालक क्या चलाता है?
- उत्तर: गाड़ी
- विश्लेषण: यहाँ कर्म 'गाड़ी' मौजूद है, और क्रिया का फल कर्म पर पड़ रहा है। इसलिए, 'चलाता है' एक सकर्मक क्रिया है।

तीसरा वाक्य: श्याम हँसता है

- क्रिया: हँसता है
- प्रश्न: श्याम क्या हँसता है?
- प्रश्न: श्याम किसे हँसता है?
- उत्तर: कोई उत्तर नहीं मिलता।
- विश्लेषण: यहाँ क्रिया 'हँसता है' का फल सीधे श्याम (कर्ता) पर पड़ रहा है। कोई कर्म नहीं है। इसलिए, 'हँसता है' एक अकर्मक क्रिया है।

चौथा वाक्य: मां स्वेटर बुनती है

- क्रिया: बुनती है
- प्रश्न: मां क्या बुनती है?
- उत्तर: स्वेटर
- विश्लेषण: यहाँ कर्म 'स्वेटर' मौजूद है, और क्रिया का फल कर्म पर पड़ रहा है। इसलिए, 'बुनती है' एक सकर्मक क्रिया है।

निष्कर्ष

उपरोक्त विश्लेषण के आधार पर, वाक्य "श्याम हँसता है" में क्रिया 'हँसता है' का फल कर्ता 'श्याम' पर ही पड़ता है और इसमें कोई कर्म नहीं है। अतः, यह वाक्य अकर्मक क्रिया का उदाहरण है।

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15. **Answer: d**

Explanation:

तद्भव शब्द की पहचान

यह प्रश्न हमें दिए गए विकल्पों में से **तद्भव शब्द** को पहचानने के लिए कह रहा है। हिंदी भाषा में, शब्दों को उनके मूल स्रोत के आधार पर वर्गीकृत किया जाता है। **तद्भव** शब्द वे होते हैं जो संस्कृत भाषा से उत्पन्न हुए हैं, लेकिन समय के साथ उच्चारण और रूप में बदल गए हैं। इसके विपरीत, **तत्सम** शब्द वे होते हैं जो सीधे संस्कृत से लिए गए हैं और उनका रूप बदला नहीं है।

तद्भव और तत्सम शब्दों को समझना

- **तत्सम (Tatsam):** ये वे शब्द हैं जो संस्कृत से सीधे हिंदी में आए हैं और जिनका रूप या उच्चारण बिल्कुल भी नहीं बदला है। उदाहरण: अग्नि, पुष्प, सूर्य, रात्रि।
- **तद्भव (Tadbhava):** ये वे शब्द हैं जो संस्कृत के मूल शब्दों (तत्सम) से निकले हैं, लेकिन समय के साथ बदलते-बदलते हिंदी में इस रूप में आ गए हैं। ये संस्कृत शब्दों का बिगड़ा हुआ या परिवर्तित रूप होते हैं। उदाहरण: आग (अग्नि से), फूल (पुष्प से), सूरज (सूर्य से), रात (रात्रि से)।

विकल्पों का विश्लेषण

आइए अब दिए गए विकल्पों का विश्लेषण करें:

- **1. अग्नि:** यह शब्द संस्कृत भाषा से सीधे लिया गया है और इसका अर्थ 'आग' है। इसका रूप बदला नहीं है, इसलिए यह एक **तत्सम** शब्द है।
- **2. पुष्प:** यह शब्द भी संस्कृत भाषा से लिया गया है और इसका अर्थ 'फूल' है। यह भी एक **तत्सम** शब्द है।
- **3. शलाका:** इस शब्द का अर्थ 'सलाई' या 'छड़' होता है और यह भी संस्कृत भाषा से सीधे लिया गया है। इसलिए, यह एक **तत्सम** शब्द है।
- **4. चौदह:** यह शब्द संख्या '14' को दर्शाता है। इसका मूल संस्कृत शब्द 'चतुर्दश' (Chaturdash) है। समय के साथ 'चतुर्दश' का रूप बदलकर 'चौदह' हो गया है। इसमें ध्वनि और रूप परिवर्तन हुआ है, इसलिए यह एक **तद्भव** शब्द है।

निष्कर्ष

उपरोक्त विश्लेषण के आधार पर, 'चौदह' शब्द संस्कृत के 'चतुर्दश' शब्द से परिवर्तित होकर बना है, इसलिए यह दिए गए विकल्पों में **तद्भव शब्द** है।

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16. **Answer: c**

Explanation:

'पगड़ी रख, घी चख' लोकोक्ति का अर्थ समझना

यह प्रश्न 'पगड़ी रख, घी चख' नामक हिंदी मुहावरे (लोकोक्ति) के अर्थ के बारे में है। इस तरह की लोकोक्तियों का प्रयोग भाषा में किसी विशेष स्थिति या भाव को संक्षेप में व्यक्त करने के लिए किया जाता है। हमें दिए गए विकल्पों में से इस लोकोक्ति का सबसे उपयुक्त अर्थ चुनना है।

लोकोक्ति का विश्लेषण: 'पगड़ी रख, घी चख'

इस लोकोक्ति को समझने के लिए इसके शब्दों को देखना महत्वपूर्ण है:

- **पगड़ी (Pagdi):** पारंपरिक रूप से, पगड़ी मान-सम्मान, इज्जत और सामाजिक प्रतिष्ठा का प्रतीक होती है।
- **रख (Rakh):** इसका अर्थ है बचाना या सुरक्षित रखना।
- **घी (Ghee):** घी को अक्सर एक कीमती, स्वादिष्ट और शुभ वस्तु माना जाता है, जो आनंद या लाभ का प्रतिनिधित्व कर सकता है।
- **चख (Chakh):** इसका अर्थ है स्वाद लेना या अनुभव करना।

शाब्दिक अर्थ के अनुसार, यह ऐसा लग सकता है कि अपनी पगड़ी (इज्जत) बचाकर घी का स्वाद लेना चाहिए। हालाँकि, मुहावरों का अर्थ अक्सर लाक्षणिक होता है। इस लोकोक्ति का प्रचलित अर्थ यह है कि किसी मूल्यवान वस्तु या आनंद (घी) को प्राप्त करने के लिए व्यक्ति को अपने मान-सम्मान (पगड़ी) की परवाह किए बिना कार्य करना चाहिए।

विकल्पों का मूल्यांकन

आइए दिए गए प्रत्येक विकल्प का विश्लेषण करें:

- **विकल्प 1: मान सम्मान से ही जीवन का आनन्द है**

यह विकल्प बताता है कि जीवन का आनंद मान-सम्मान बनाए रखने में है। यह 'पगड़ी रख, घी चख' लोकोक्ति के भाव के विपरीत है, क्योंकि लोकोक्ति मान-सम्मान को दाँव पर लगाकर आनंद प्राप्त करने का संकेत देती है।

- **विकल्प 2: पढ़-लिख कर भी अनुभवहीन**

  इस विकल्प का लोकोक्ति से कोई संबंध नहीं है। यह किसी व्यक्ति की शैक्षिक योग्यता और व्यावहारिक अनुभव के बीच अंतर को दर्शाता है, जिसका 'पगड़ी' या 'घी' से कोई लेना-देना नहीं है।

- **विकल्प 3: निर्लज्ज होकर कुछ पाना**

  यह विकल्प लोकोक्ति के अर्थ के सबसे करीब है। 'निर्लज्ज' (Nirlajj) होने का अर्थ है जिसमें लज्जा या शर्म न हो, अर्थात जो अपने मान-सम्मान या इज्जत की परवाह न करे। 'कुछ पाना' (Ghee chakhna) लाभ या आनंद प्राप्त करना है। इस प्रकार, 'निर्लज्ज होकर कुछ पाना' का अर्थ है कि किसी चीज को हासिल करने के लिए अपनी इज्जत या मान-सम्मान को भूल जाना या त्याग देना, जो 'पगड़ी रख, घी चख' का सटीक भाव है।

- **विकल्प 4: बदनामी से बुरा नेकनामी**

  यह एक अलग कहावत का भाव हो सकता है, लेकिन 'पगड़ी रख, घी चख' का अर्थ यह नहीं है। यह विकल्प लोकोक्ति के मूल भाव से मेल नहीं खाता।

निष्कर्ष

सभी विकल्पों पर विचार करने के बाद, यह स्पष्ट है कि 'पगड़ी रख, घी चख' लोकोक्ति का सबसे सटीक अर्थ है किसी भी कीमत पर, यहाँ तक कि अपने मान-सम्मान को खोकर या निर्लज्ज बनकर, कुछ लाभ या आनंद प्राप्त करना। इसलिए, विकल्प 3 सही व्याख्या प्रस्तुत करता है।

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17. **Answer: c**

Explanation:

व्योम का अर्थ और पर्यायवाची शब्द की पहचान

यह प्रश्न 'व्योम' शब्द के सही पर्यायवाची (synonym) को पहचानने से संबंधित है। हमें दिए गए विकल्पों में से उस शब्द को चुनना है जो 'व्योम' का अर्थ नहीं बताता है। 'व्योम' का सामान्य अर्थ आकाश, गगन, या वह खुला स्थान होता है जहाँ बादल, तारे आदि होते हैं।

दिए गए विकल्पों का विश्लेषण

आइए, हम प्रत्येक विकल्प का अर्थ समझें और देखें कि कौन सा शब्द 'व्योम' के अर्थ से मेल खाता है और कौन सा नहीं:

- **1. अन्तरिक्ष:** 'अन्तरिक्ष' का अर्थ होता है पृथ्वी के वायुमंडल से परे का विशाल खाली स्थान, जहाँ ग्रह, तारे आदि स्थित हैं। यह 'व्योम' का एक पर्यायवाची है, क्योंकि 'व्योम' भी व्यापक अर्थ में आकाश या अंतरिक्ष को दर्शाता है।
- **2. अम्बर:** 'अम्बर' शब्द आकाश, गगन, या आसमान के लिए प्रयोग किया जाता है। इसे वस्त्र के अर्थ में भी प्रयोग किया जाता है, परन्तु यहाँ आकाश के संदर्भ में यह 'व्योम' का एक सीधा पर्यायवाची है।
- **3. पीयूष:** 'पीयूष' शब्द का अर्थ होता है अमृत, सोम रस, या वह दिव्य पेय जिसे पीकर देवता अमर हो जाते हैं। इस शब्द का संबंध आकाश या व्योम से बिल्कुल नहीं है।
- **4. नभ:** 'नभ' शब्द भी आकाश का एक सामान्य और प्रचलित पर्यायवाची है। इसे अक्सर कविता और साहित्य में 'व्योम' के स्थान पर प्रयोग किया जाता है।

निष्कर्ष: कौन सा शब्द व्योम का पर्यायवाची नहीं है?

जब हम सभी विकल्पों पर विचार करते हैं, तो यह स्पष्ट होता है कि 'अन्तरिक्ष', 'अम्बर', और 'नभ' तीनों ही शब्द 'व्योम' के पर्यायवाची हैं क्योंकि वे सभी आकाश या अंतरिक्ष के अर्थ को व्यक्त करते हैं। इसके विपरीत, 'पीयूष' का अर्थ अमृत है, जो 'व्योम' के अर्थ से पूरी तरह भिन्न है। इसलिए, 'पीयूष' ही वह शब्द है जो 'व्योम' का पर्यायवाची नहीं है।

---

18. **Answer: c**

Explanation:

'जो स्त्री सूर्य न देख सके' के लिए सही शब्द

इस प्रश्न का उद्देश्य उस वाक्यांश को एक सटीक शब्द में संक्षिप्त करना है जो बताता है कि कोई स्त्री सूर्य को भी नहीं देख पाती है। यह अक्सर उन स्त्रियों के लिए प्रयोग किया जाता था जो सामाजिक या पारिवारिक कारणों से घर की चारदीवारी में ही रहती थीं और बाहर की दुनिया, यहाँ तक कि सूर्य के प्रकाश को भी नहीं देख पाती थीं।

प्रश्न के मुख्य बिंदु और शब्दावली

- **प्रश्न का संदर्भ**: हमें उस 'स्त्री' के लिए एक 'शब्द' खोजना है जो 'सूर्य' को 'देख' नहीं सकती।
- **शब्द निर्माण**: हिंदी (और संस्कृत) में अक्सर कई शब्दों को जोड़कर या उपसर्ग लगाकर नए अर्थ वाले शब्द बनाए जाते हैं।

दिए गए विकल्पों का विश्लेषण

आइए प्रत्येक विकल्प के अर्थ को समझें और देखें कि कौन सा वाक्यांश "जो स्त्री सूर्य भी न देख सकें" के सबसे करीब है:

- **विदुषी**: यह शब्द एक विद्वान या बहुत पढ़ी-लिखी महिला के लिए प्रयोग किया जाता है। इसका सूर्य देखने या न देखने से कोई संबंध नहीं है।
- **अलक्ष्या**: इसका अर्थ है 'जिसका लक्ष्य न किया गया हो', 'जो दिखाई न दे' या 'अदृश्य'। यह उस स्त्री का वर्णन नहीं करता जो सूर्य से दूर रहती है, बल्कि उस चीज़ का जो देखी ही नहीं जा सकती।
- **असूर्यम्पश्या**: यह शब्द संस्कृत से लिया गया है और इसका सटीक अर्थ है:
  - 'अ' - नहीं
  - 'सूर्य' - सूरज
  - 'अम्पश्या' - जिसे छुआ या देखा न जा सके (यह 'स्पृश्' धातु से बना है जिसका अर्थ छूना या प्राप्त करना होता है)

  इस प्रकार, 'असूर्यम्पश्या' का शाब्दिक अर्थ है 'वह (स्त्री) जिसे सूर्य का स्पर्श या दर्शन न हो'। यह सीधे तौर पर प्रश्न में दिए गए वाक्यांश से मेल खाता है।
- **शास्त्रज्ञा**: इसका अर्थ है 'शास्त्रों का ज्ञान रखने वाली' या 'धर्मग्रंथों की ज्ञाता'। यह भी स्त्री की विद्वत्ता को दर्शाता है, न कि उसके बाहर न निकलने को।

निष्कर्ष

सभी विकल्पों का विश्लेषण करने पर, यह स्पष्ट होता है कि 'असूर्यम्पश्या' ही वह एकमात्र शब्द है जो उस स्त्री का सटीक वर्णन करता है जो सूर्य को भी नहीं देख पाती। यह शब्द ऐतिहासिक रूप से उन स्त्रियों के लिए प्रयोग किया जाता था जो घर के अंदरूनी हिस्सों में रहती थीं और बाहरी दुनिया से कटी रहती थीं।

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19. **Answer: a**

Explanation:

'अज्ञ' का अर्थ समझना

यह प्रश्न 'अज्ञ' शब्द के सही अर्थ को पहचानने के बारे में है। 'अज्ञ' एक हिंदी शब्द है जिसका प्रयोग किसी ऐसे व्यक्ति के लिए किया जाता है जिसे ज्ञान की कमी हो। आइए इस शब्द और दिए गए विकल्पों को विस्तार से देखें।

'अज्ञ' शब्द का विश्लेषण

'अज्ञ' शब्द दो भागों से मिलकर बना है:

- 'अ': यह एक उपसर्ग है जिसका अर्थ होता है 'नहीं' या 'अभाव'।
- 'ज्ञ': इसका अर्थ होता है 'जानने वाला' या 'ज्ञान'।

इस प्रकार, 'अज्ञ' का शाब्दिक अर्थ हुआ **जो जानता नहीं है** या **जिसमें ज्ञान का अभाव है**। यह शब्द किसी ऐसे व्यक्ति को दर्शाता है जो अज्ञानी हो या जिसे किसी विशेष विषय या सामान्य रूप से बहुत कम जानकारी हो।

विकल्पों का मूल्यांकन

आइए अब दिए गए विकल्पों पर विचार करें और देखें कि कौन सा विकल्प 'अज्ञ' के अर्थ से सबसे अच्छी तरह मेल खाता है:

- **जो कुछ भी नहीं जानता हो**: यह 'अज्ञ' शब्द के अर्थ के सबसे करीब है। 'अ' उपसर्ग के साथ 'ज्ञ' (जानने वाला) मिलकर यह अर्थ देता है कि व्यक्ति को किसी भी चीज़ का ज्ञान नहीं है।
- **जो सब कुछ जानता हो**: यह 'अज्ञ' का विलोम है। जो सब कुछ जानता है, उसे 'सर्वज्ञ' कहा जाता है, 'अज्ञ' नहीं।
- **जो बहुत थोड़ा जानता हो**: जबकि 'अज्ञ' का अर्थ अज्ञानता है, यह जरूरी नहीं कि वह 'थोड़ा' जानता हो। 'अज्ञ' का मतलब पूर्ण अज्ञानता भी हो सकता है। 'थोड़ा जानने वाले' के लिए अन्य शब्द हो सकते हैं, लेकिन 'अज्ञ' का सीधा अर्थ 'जो जानता ही नहीं' है।
- **जो जानता भी हो और नहीं भी जानता हो**: यह स्थिति अनिश्चितता को दर्शाती है और 'अज्ञ' के निश्चित अर्थ 'ज्ञान की कमी' से मेल नहीं खाती।

निष्कर्ष

शब्द 'अज्ञ' का सबसे सटीक अर्थ वह व्यक्ति है जिसे किसी भी प्रकार का ज्ञान नहीं है। इसलिए, विकल्पों में से, 'जो कुछ भी नहीं जानता हो' ही सही उत्तर है।

मुख्य शब्द: 'अज्ञ', अर्थ, ज्ञान, अज्ञानता, उपसर्ग 'अ'।

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20. **Answer: d**

Explanation:

प्रश्नवाचक चिह्न का प्रयोग

यह प्रश्न हिंदी व्याकरण के एक महत्वपूर्ण बिंदु पर केंद्रित है: प्रश्नवाचक चिह्न (?) का सही उपयोग। प्रश्नवाचक चिह्न का प्रयोग केवल उन वाक्यों के अंत में किया जाता है जो सीधे तौर पर कोई प्रश्न पूछते हैं, अर्थात जिनका उद्देश्य जानकारी प्राप्त करना होता है।

वाक्य विश्लेषण

आइए दिए गए वाक्यों का विश्लेषण करें और देखें कि किस वाक्य में प्रश्नवाचक चिह्न लगना चाहिए:

- **विकल्प 1:** मोहन ने पूछा राम की आय कितनी है

  यह वाक्य एक कथन है, प्रश्न नहीं। यह बताता है कि मोहन ने एक प्रश्न पूछा था, लेकिन यह वाक्य स्वयं प्रश्न नहीं पूछ रहा है। इसलिए, इसके अंत में प्रश्नवाचक चिह्न का प्रयोग नहीं किया जाएगा।

- **विकल्प 2:** सीता जानना चाहती है

  यह एक सामान्य वाक्य है जो सीता की इच्छा या जानने की प्रक्रिया के बारे में बताता है। यह कोई प्रश्न नहीं पूछता है, अतः इसमें प्रश्नवाचक चिह्न की आवश्यकता नहीं है।

- **विकल्प 3:** मोहन बाजार गया था

  यह एक निश्चयात्मक (declarative) वाक्य है। यह केवल एक घटना का वर्णन करता है और कोई प्रश्न नहीं पूछता है। इसलिए, यहाँ प्रश्नवाचक चिह्न का प्रयोग नहीं होगा।

- **विकल्प 4:** मोहन को बाजार क्यों जाना था

यह वाक्य 'क्यों' शब्द का प्रयोग करके सीधे एक प्रश्न पूछ रहा है। यह मोहन के बाजार जाने के कारण के बारे में जानकारी मांग रहा है। प्रश्न पूछने वाले ऐसे वाक्यों को प्रश्नवाचक वाक्य कहा जाता है और इनके अंत में प्रश्नवाचक चिह्न (?) लगाया जाता है।

सही प्रयोग की पहचान

वाक्य 'मोहन को बाजार क्यों जाना था' प्रश्नवाचक वाक्य है क्योंकि यह कारण पूछता है। जब कोई वाक्य जानकारी प्राप्त करने के इरादे से कुछ पूछता है, तो उसके अंत में हमेशा प्रश्नवाचक चिह्न (?) का प्रयोग किया जाता है। इसलिए, इस वाक्य में प्रश्नवाचक चिह्न का प्रयोग सही है।

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21. Answer: c

Explanation:

Understanding the Phrase “Pyrrhic Victory”

The phrase “Pyrrhic Victory” refers to a specific type of success in a conflict or competition. It describes a win that comes at such a great expense to the victor that it is almost as damaging as a defeat. The cost of achieving the victory outweighs the benefits gained.

Historical Origin of “Pyrrhic Victory”

The term originates from King **Pyrrhus** of Epirus. He fought against the Romans in several battles during the Pyrrhic War. While he won many battles, such as the Battle of Heraclea (280 BC) and the Battle of Asculum (279 BC), his army suffered heavy and irreplaceable casualties. After the Battle of Asculum, it is said that Pyrrhus remarked, “If we are victorious in one more battle with the Romans, we shall be utterly ruined.” This highlights the devastating cost associated with his military successes, leading to the coining of the term.

Meaning and Context

A **Pyrrhic Victory** means achieving success, but at a tremendous cost. The victor might win the battle or achieve their immediate goal, but the losses incurred (in terms of lives, resources, or political capital) are so significant that the overall outcome is negative or unsustainable in the long run. It's a warning against pursuing victory regardless of the consequences.

Analyzing the Options

Let's examine the given options in light of the meaning of a "Pyrrhic Victory":

- **Easy victory**: This is incorrect. A Pyrrhic victory is characterized by extreme difficulty and high costs, not ease.
- **Honest victory**: This is incorrect. The morality or honesty of the victory is not the defining characteristic; the cost is.
- **Victory at a high cost**: This accurately describes a Pyrrhic victory. The essential element is the severe price paid by the winner to achieve success.
- **Victory at a low cost**: This is the opposite of a Pyrrhic victory. A victory achieved with minimal cost is simply a straightforward win.

Conclusion

Based on the historical context and the definition, the phrase "Pyrrhic Victory" specifically stands for a **victory achieved at a significant and often damaging cost**.

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22. **Answer: b**

Explanation:

Finding the Opposite Meaning for 'Venerate'

The question asks us to identify the word that has the opposite meaning to the word '**venerate**'. To answer this, we first need to understand what '**venerate**' means and then look for its antonym among the choices provided.

Defining 'Venerate'

The word '**venerate**' means to regard or treat (a person or thing) with great respect or reverence. It implies showing deep admiration and honour.

- For instance, many cultures **venerate** their elders or historical figures.
- The core meaning involves deep respect and high regard.

Analyzing the Options Provided

Let's examine each option to see how its meaning relates to 'venerate':

- **Option 1: Respect**
  'Respect' means having due regard for the feelings, wishes, rights, or traditions of others. While it relates to positive regard, 'venerate' implies a much higher degree of respect, often bordering on worship or deep admiration. Thus, 'respect' is more of a synonym or a weaker form of 'venerate', not its opposite.
- **Option 2: Condemn**
  'Condemn' means to express complete disapproval of, to censure, or to declare to be wrong. This involves expressing strong negative judgment and lack of respect. This is the direct opposite of 'venerate', which means to show great respect.
- **Option 3: Severe**
  'Severe' means very great, intense, or harsh in effect or degree. This word describes intensity or harshness and is unrelated to the concept of respect or disrespect.
- **Option 4: Initiate**
  'Initiate' means to cause a process or action to begin. This word relates to starting something and has no connection to the meaning of 'venerate'.

Identifying the Antonym of 'Venerate'

Based on the analysis, 'venerate' signifies showing great respect and honour, while 'condemn' signifies expressing strong disapproval and censure.

- **Venerate** = To respect highly.
- **Condemn** = To disapprove strongly.

Therefore, 'condemn' is the word that is opposite in meaning to 'venerate'.

23. **Answer: b**

Explanation:

The correct answer is **Unless you help him he can do nothing.**

⭐ Key Points

- **A complex sentence** is an independent clause (a sentence that can stand on its own) with one or more dependent clauses added (dependent clauses can't stand on their own as a sentence).
- **Example,**
  - The movie was very interesting as I had expected.
  - In the above-given sentence, 'the movie was very interesting' is an independent clause and 'as I had expected' is a dependent clause.
- In the correct answer **'he can do nothing'** is an **independent clause** and **'unless you help him'** is a **dependent clause** .
- So, it is a complex sentence.

Hence, **option 2** is the correct answer.

24. **Answer: d**

Explanation:

Identifying the Part of Speech for 'Round'

The question asks us to determine the part of speech of the underlined word "round" in the sentence: "The boys ran round the tree." We need to analyze how "round" functions within this specific sentence to correctly identify its grammatical role.

Understanding Prepositions

A **preposition** typically connects a noun, pronoun, or noun phrase to other words in a sentence. It often indicates relationships concerning:

- Location (e.g., *on* the table, *under* the chair)
- Direction (e.g., *to* the store, *around* the corner)
- Time (e.g., *before* noon, *after* the meeting)
- Or other relationships like manner or purpose.

Prepositions are usually followed by a noun phrase, which is called the object of the preposition. For example, in "*under* the table", "the table" is the object of the preposition "under".

Analyzing 'Round' in the Context

Let's look closely at the sentence: "The boys ran round the tree."

- The word "round" shows the relationship between the action "ran" and the noun phrase "the tree".
- It indicates the path or direction of the running relative to the tree. The boys were running in a circular path around the tree.
- "the tree" serves as the object of the word "round".
- The phrase "round the tree" is a prepositional phrase, functioning here to describe where or how the boys ran.

Because "round" connects "ran" to "the tree" and shows a spatial relationship, it fits the definition of a preposition.

Comparing with Other Parts of Speech

Let's consider why the other options are less suitable:

- **Adjective:** An adjective modifies or describes a noun or pronoun. For example, "He drew a *round* circle." Here, "round" describes the noun "circle". In our sentence, "round" doesn't describe the boys or the tree itself; it shows their relationship.
- **Adverb:** An adverb modifies a verb, adjective, or another adverb, often indicating manner, place, time, or degree. While "round" can sometimes

function as an adverb (e.g., "He looked *round*."), in "The boys ran round the tree," it clearly links the verb to the object "the tree". If it were purely an adverb modifying "ran," the sentence might be structured differently, like "The boys ran round quickly." The presence of "the tree" as the object makes the prepositional function more prominent.

- **Noun:** A noun represents a person, place, thing, or idea. "Round" is not acting as a noun in this sentence. For example, "The boxer won the final *round*." Here, "round" is a noun.

Conclusion on Part of Speech

In the sentence "The boys ran round the tree," the word "round" acts as a **preposition** because it links the verb "ran" with the noun phrase "the tree," specifying the spatial path of the action.

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25. **Answer: c**

Explanation:

Converting Direct Speech to Indirect Speech: Imperative Sentences

The task is to change the given sentence, which is in direct speech, into indirect speech. The original sentence features an imperative statement directed at students.

Understanding Direct and Indirect Speech for Imperatives

Direct Speech involves quoting the speaker's exact words, typically enclosed in quotation marks. For example: *The teacher said, "Be quiet, boys".*

Indirect Speech (or reported speech) conveys the meaning of what the speaker said, without using their exact words. Quotation marks are removed, and adjustments are made to verb tenses, pronouns, and sentence structure.

Imperative sentences (commands, requests, instructions) have specific rules for conversion:

- The reporting verb (like *said*) is usually replaced by a verb that reflects the mood of the command, such as *told, ordered, asked, requested, advised,* or *urged*.
- The imperative verb in the quotation is changed into an infinitive (*to* + base verb).
- The person being addressed (the vocative, like "boys") usually becomes the object of the reporting verb.

Analyzing the Given Sentence

The sentence to convert is: *The teacher said, "Be quiet, boys".*

- **Reporting Clause:** "The teacher said"
- **Direct Speech (Imperative):** "Be quiet, boys"

Here, "Be quiet" is the command, and "boys" identifies the recipients of the command.

Evaluating Conversion Options

Let's look at how each option converts the sentence according to the rules:

- **Option 1:** The teacher said that the boys should be quiet.
  - This structure ("said that... should") is typically used for reported statements (declarative sentences), not imperatives. It is not the standard way to convert a command like "Be quiet".
- **Option 2:** The teacher called the boys and ordered them to be quiet.
  - The phrase "ordered them to be quiet" correctly uses a suitable reporting verb ("ordered") and the infinitive structure. However, the original sentence doesn't mention the teacher "calling" the boys; this adds extra information not present in the direct speech.
- **Option 3:** The teacher urged the boys to be quiet.
  - This option uses "urged" as the reporting verb. "Urged" effectively conveys the sense of a strong request or instruction, fitting the imperative "Be

quiet".
    - It correctly applies the structure: Reporting Verb (*urged*) + Object (*the boys*) + Infinitive (*to be quiet*). This is a standard and accurate conversion for an imperative sentence.
- **Option 4:** The teacher commanded the boys that they be quiet.
    - "Commanded" is an appropriate reporting verb for a command. However, the structure "commanded... that they be quiet" is less common and natural for reporting imperatives compared to using the infinitive form ("commanded the boys to be quiet").

Identifying the Best Indirect Speech Conversion

Comparing the options, Option 3, "The teacher urged the boys to be quiet," represents the most accurate and stylistically appropriate conversion. The reporting verb "urged" captures the instructional tone effectively, and the grammatical structure follows the standard rules for converting imperative sentences into indirect speech.

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26. **Answer: c**

Explanation:

Reported Speech: Asking for Permission

This question focuses on correctly converting a direct speech request for permission into reported speech. The key is understanding how modal verbs change tense and form in reported questions.

Analyzing the Reported Question

The sentence begins with "The son asked his mother if he...". This structure indicates reported speech. The reporting verb "asked" is in the past tense. The conjunction "if" introduces the reported clause, suggesting the original question was a yes/no type, likely seeking permission.

The original direct speech could have been:

- "Mom, may I go out?" (Formal request for permission)
- "Mom, can I go out?" (Informal request for permission)

Modal Verbs in Reported Speech

When reporting questions, especially those asking for permission, modal verbs change according to specific rules:

- **'May'** typically changes to **'might'**.
- **'Can'** typically changes to **'could'**.

Since the reporting verb "asked" is in the past tense, we need the past form of the modal verb used for permission.

Evaluating the Options

- **Option 1: can go out** - Incorrect. While 'can' is used for permission in direct speech, it usually becomes 'could' in reported speech when the reporting verb is past tense.
- **Option 2: may go out** - Incorrect. 'May' is used for permission in direct speech, but in reported speech with a past tense reporting verb ('asked'), it should change to 'might'.
- **Option 3: might go out** - Correct. This is the standard reported form of 'may I go out?' when the reporting verb is in the past tense. It correctly reflects the shift in tense and form for a reported request for permission.
- **Option 4: did go out** - Incorrect. This option represents a simple past action and does not fit the context of a reported question asking for permission.

Example Comparison

Consider these conversions:

- Direct Speech: The son asked, "**May I go out?**"
- Reported Speech: The son asked his mother if he **might go out**.

Alternatively:

- Direct Speech: The son asked, "**Can I go out?**"
- Reported Speech: The son asked his mother if he **could go out**.

Between 'may' and 'can' for permission in direct speech, 'may' is often considered more appropriate, and its reported form is 'might'.

Final Conclusion

The most suitable completion for the sentence "The son asked his mother if he..." reflecting a reported request for permission originally using 'May I...?' is using the modal verb 'might'.

---

27. Answer: a

Explanation:

This question asks to choose the correct preposition to complete the common English phrasal verb related to letting go of possessions.

Choosing the Correct Preposition for 'Part'

The core of this question lies in understanding the correct phrasal verb associated with the word 'part' when referring to giving away or separating from belongings. Let's examine the options:

- **Option 1: with**
  The phrasal verb **"part with"** means to give away or get rid of something, often something you are fond of or have difficulty separating from. For example, someone might say, "It was hard to part with my old guitar." This fits the context perfectly, as it expresses the difficulty in letting go of one's belongings.
- **Option 2: from**
  The preposition 'from' is typically used with 'part' when separating from people or places, like "He had to **part from** his friends" or "The ship will **part from** the dock." It is not the standard preposition used when giving away possessions.

- **Option 3: away**
  While 'away' can be used as a particle in phrasal verbs (like 'give away', 'throw away'), **"part away"** is not a standard or idiomatic phrasal verb in English for this meaning.
- **Option 4: off**
  Similar to 'away', **"part off"** is not a standard phrasal verb used in this context. Phrasal verbs like 'put off' or 'take off' exist, but 'part off' does not fit the meaning of letting go of belongings.

Explanation of 'Part With'

The expression **"difficult to part with"** is a common idiom. It signifies an emotional reluctance or struggle when giving away, selling, or otherwise disposing of something that one owns or cherishes. The sentence implies that the speaker finds it hard to let go of their belongings.

Therefore, the correct completion is:

"It is difficult for me to part **with** my belongings."

Final Answer Derivation

Based on the idiomatic usage in English grammar, the correct preposition to use with 'part' when referring to giving up or getting rid of possessions is 'with'. The other options do not form standard phrasal verbs that convey this specific meaning.

The completed sentence uses the standard phrasal verb "part with".

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28. **Answer: c**

Explanation:

Understanding Synonyms: The Word ERUDITE

This explanation helps identify the correct synonym for the word **ERUDITE** from the given choices.

Defining ERUDITE

The term **ERUDITE** describes someone who possesses or shows great knowledge, typically gained through extensive study and learning. Think of a highly educated scholar or a professor deeply versed in a particular subject. Key characteristics include being knowledgeable, scholarly, learned, and well-read.

Analyzing the Options for a Synonym of ERUDITE

Let's examine each option to find the best synonym for **ERUDITE**:

- **Option 1: execute**

  The word *execute* means to carry out or put into effect a plan, command, or course of action. For example, "The team will *execute* the project plan." This word relates to action, not knowledge.

- **Option 2: expense**

  Expense refers to the cost or the money spent on something. For instance, "The travel *expense* was high." This term relates to cost, not learning.

- **Option 3: academic**

  Academic relates to education, scholarship, and learning. Someone described as *academic* is often involved in study, research, and intellectual pursuits, showing a depth of knowledge. This meaning closely aligns with the definition of **ERUDITE**.

- **Option 4: settle**

  Settle can mean to resolve a dispute, establish a home, or become calm. For example, "They decided to *settle* the argument." This word relates to resolution or stability, not scholarship.

Identifying the Best Synonym

Comparing the meanings, the word *academic* is the most fitting synonym for **ERUDITE** among the given options because both relate directly to deep knowledge, learning, and scholarship.

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29. **Answer: b**

Explanation:

Understanding the Transformation to Passive Voice

This explanation focuses on converting an active voice sentence into the passive voice, specifically addressing the question: "**Who** killed the snake?". We will explore the grammatical rules required for this **voice change**.

Analyzing the Active Voice Sentence

The original sentence, "**Who** killed the snake?", is in the active voice. Let's break down its components:

- **Subject:** Who
- **Verb:** killed (Past Simple Tense)
- **Object:** the snake

In the active voice, the subject ("Who") performs the action (killing) on the object ("the snake").

Key Principles for Passive Voice Conversion

To change an active voice sentence to the passive voice, we follow these steps:

- The object of the active sentence becomes the subject of the passive sentence.
- The subject of the active sentence becomes the object of the preposition "by" in the passive sentence.

- The main verb is changed to its past participle form and preceded by a suitable form of the auxiliary verb "to be".

Handling "Who" in Passive Voice Transformation

When the subject of the active sentence is "Who", it changes to "By whom" when it becomes the object of the preposition "by" in the passive sentence.

Step-by-Step Transformation

Let's apply the rules to convert "Who killed the snake?":

1. **Identify parts:** As identified above, Subject = Who, Verb = killed (Past Simple), Object = the snake.
2. **Object becomes Subject:** "the snake" will be the subject in the passive sentence.
3. **Subject becomes Object of 'by':** "Who" becomes "By whom".
4. **Verb Tense Change:** The verb "killed" is in the Past Simple tense. The passive form for Past Simple requires the auxiliary verb "was" (since "the snake" is singular) followed by the past participle of the main verb. The past participle of "kill" is "killed". So, the verb changes to "was killed".
5. **Construct the Passive Sentence:** Combine the elements: "By whom" + auxiliary verb "was" + subject "the snake" + past participle "killed".

Formulating the Passive Question

Following the steps, the structure becomes:

By whom (original subject) + **was** (auxiliary verb for past simple, singular) + **the snake** (original object) + **killed** (past participle)?

This results in the passive voice sentence: "By whom was the snake killed?".

Evaluating the Options

- Option 1: "Who was killed by the snake?" - Incorrect. This implies the snake did the killing, changing the subject-object relationship.

- Option 2: "By whom was the snake killed?" - Correct. This correctly follows the transformation rules for a "Who" question in the Past Simple tense.
- Option 3: "The snake was being killed." - Incorrect. This uses the Past Continuous tense ("was being killed"), which is not the correct passive form for the Past Simple active sentence.
- Option 4: "By whom is the snake killed?" - Incorrect. This uses the Present Simple passive tense ("is killed"), while the original verb was Past Simple.

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30. **Answer: b**

Explanation:

Choosing the Correct Preposition for Idiomatic Phrases

This question requires filling in the blank in the sentence: "I tried to help him _____ the best of my ability." The task is to select the correct preposition from the given options to complete a common English idiom.

Understanding the Idiom: "To the Best of My Ability"

The phrase "**to the best of my ability**" is a standard English idiom. It means doing something with the maximum effort and skill that you are capable of.

Let's break down why the preposition '**to**' is the correct choice:

- The expression uses '**to**' to indicate the limit or extent of the action performed. It signifies that the help provided was done up to the level of the speaker's capability.
- It's a fixed phrase, similar to other idiomatic expressions where specific prepositions are required.

Analyzing the Options

Let's look at why the other options don't fit this particular idiom:

- **Option 1: 'at'** - While 'at' can indicate a point or level (e.g., "good at something"), the phrase "at the best of my ability" is not the standard idiomatic form.
- **Option 3: 'from'** - 'From' usually indicates origin or separation. "From the best of my ability" does not make grammatical or idiomatic sense in this context.
- **Option 4: 'of'** - While 'of' can show possession or belonging, it doesn't correctly form the required idiom here. You might say "the best *of* the bunch", but not "the best *of* my ability" in this specific structure indicating extent.

Therefore, the complete and correct sentence is: "I tried to help him **to** the best of my ability." This accurately conveys that the help was given to the full extent of the speaker's capabilities.

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31. **Answer: d**

Explanation:

Analyzing the Role of Speech in Building Friendships

This question requires us to understand how effective communication, as described in the provided passage, impacts relationship building, specifically winning friends. The passage emphasizes that speech is a powerful tool that needs careful handling to avoid misunderstandings.

Understanding Speech Pitfalls Mentioned in the Passage

The passage highlights several ways speech can lead to negative outcomes, potentially hindering the goal of winning friends:

- **Misunderstandings:** Careless use of speech can lead to our attitude being completely misunderstood.
- **Creating Enemies:** Specific linguistic errors, such as a "slip of the tongue" or using an "ambiguous word," are explicitly mentioned as ways to create an enemy instead of the desired friend.
- **Class Differences:** The passage notes that vocabulary and speech styles differ between social classes. What is ordinary for one group might seem pompous or

be misunderstood by another. Using words with different meanings to different listeners is also mentioned as a potential issue.
- **Careful Handling:** The text concludes that speech is not to be used lightly but requires "careful handling," and a wise person adapts their speech to different people.

Identifying the Best Strategy to Win a Friend

To determine the best way to win a friend according to the passage, we need to identify which specific speech habit, when avoided, directly relates to preventing the creation of enemies and fostering friendships:

- The passage states: "A slip of the tongue, the use of an unusual word, or of an **ambiguous word**, and so on, may create an enemy where we had hoped to win a friend."
- This directly links the use of **ambiguous words** to a negative outcome (creating an enemy) that is the opposite of winning a friend.
- While "pomposity in speech" is mentioned as a potential issue due to class differences, the passage more directly identifies ambiguity as a cause for creating enemies instead of friends.
- Irony and verbosity are not specifically mentioned in the text as reasons for creating enemies or hindering friendship.

Therefore, avoiding **ambiguity in speech** is presented as the most direct strategy mentioned for preventing negative interactions that could prevent someone from winning a friend.

Conclusion on Avoiding Ambiguity

The passage clearly indicates that using words or expressions that can be understood in more than one way (ambiguity) can lead to misunderstandings and hostility, directly preventing the formation of friendships. Consequently, avoiding such ambiguity is highlighted as crucial for positive social interactions and building connections.

32. **Answer: b**

Explanation:

Understanding Speech Communication According to the Passage

The provided passage discusses the nature of speech, emphasizing that while it's a valuable tool for communication, it requires careful handling to avoid misunderstandings. It specifically highlights how differences in vocabulary and word meanings between various social classes or education levels can lead to misinterpretations or create negative impressions, such as sounding pompous.

Analyzing Options for Talking to an Uneducated Person

The question asks what type of language or vocabulary should be used when speaking with an uneducated person, based on the passage's advice. Let's examine each option:

- **Ordinary speech:** The passage explicitly states that "the ordinary speech of an educated man may strike an uneducated listener as pompous." This suggests that using one's standard, perhaps more complex, vocabulary might not be appropriate and could be perceived negatively.
- **His vocabulary:** The passage mentions that "different classes of people use different vocabularies" and warns that a word might have a different meaning to the listener than to the speaker's own social group. To ensure clear communication and avoid sounding pompous or causing misunderstanding, it's advisable to use words and a vocabulary that the listener understands. This aligns with adapting to "his vocabulary," meaning the listener's vocabulary.
- **Simple words:** While using simpler words might be a part of communicating effectively with someone who has a different vocabulary, the passage doesn't explicitly use the term "simple words." It focuses more broadly on the concept of differing vocabularies and potential misunderstandings arising from them.

The option "his vocabulary" encompasses adapting to the listener's specific word choices and level of understanding more directly.

- **Polite language:** Politeness is a general aspect of good communication, but the passage's core advice relates specifically to the choice of words and vocabulary to bridge communication gaps, rather than just general politeness. The primary concern highlighted is avoiding misunderstanding due to differing linguistic backgrounds.

Conclusion on Appropriate Speech

Based on the passage's emphasis on differing vocabularies and the potential for misunderstandings when an educated person speaks to an uneducated one, the most suitable approach is to adapt one's language to the listener's level. The passage advises against using speech that might seem "pompous" and warns about words having different meanings. Therefore, using vocabulary that the listener understands, referred to as "his vocabulary," is the best strategy recommended by the text to ensure effective and considerate communication.

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33. **Answer: c**

Explanation:

Speech Style and Appearing Foolish

This question asks us to determine how a person might be perceived if they use the exact same language style when speaking to everyone, regardless of the audience. The provided passage discusses the nuances and potential pitfalls of speech.

Analyzing the Passage's Insights on Speech

The passage emphasizes that speech is a powerful tool but requires careful handling. It warns against using language carelessly, as it can lead to misunderstandings. A key point is made in the concluding sentences:

- "Thus speech is not a gift to use lightly without thought, but one which demands careful handling."
- "Only a fool will express himself alike to all kinds and conditions of men."

This directly addresses the scenario presented in the question. The passage explicitly states that adapting one's speech to different people ("all kinds and conditions of men") is characteristic of someone wise, implying that failing to do so is foolish.

Evaluating the Options Based on the Passage

Let's consider the options in light of the passage's statement:

- **Option 1: flat** - While using the same style might become monotonous, the passage doesn't specifically use the word "flat" to describe this behavior.
- **Option 2: boring** - Similar to "flat," monotony can lead to boredom, but the passage points to a more direct consequence.
- **Option 3: foolish** - The passage explicitly states, "Only a fool will express himself alike to all kinds and conditions of men." This directly matches the condition described in the question. Using the same language style universally shows a lack of judgment and social awareness, which the passage equates to foolishness.
- **Option 4: democratic** - While using the same language might seem egalitarian, the passage frames it negatively, not as a positive trait like being democratic. It suggests a lack of social intelligence rather than fairness.

Conclusion on Uniform Language Style

The passage strongly suggests that failing to adjust one's speech style for different audiences is unwise. The most fitting description provided in the options, based directly on the text, is that such a person sounds **foolish**.

---

34. **Answer: c**

Explanation:

Analyzing Speech as a Curse According to the Passage

This solution examines the provided passage to determine the conditions under which speech can be considered a curse. We will analyze the text to understand the nuances of communication and how it can lead to negative outcomes.

Understanding the Role of Speech

The passage highlights that speech is a significant aspect of human interaction. It is described as a "great blessing" because it enables us to communicate our thoughts, intentions, and desires to others. However, the passage immediately contrasts this benefit by stating that speech can also be a "great curse".

Conditions Leading to Speech Becoming a Curse

The passage explicitly details how speech can transform from a blessing into a curse. Key points mentioned include:

- **Careless Use:** Using speech carelessly can lead to our attitude being completely misunderstood.
- **Verbal Errors:** Simple mistakes like a "slip of the tongue" or using words that are unusual or ambiguous can cause significant problems.
- **Social and Contextual Differences:** Different social classes or groups use distinct vocabularies. What is ordinary for one group might sound pompous to another.
- **Differing Meanings:** A word might unintentionally carry a different meaning for the listener than it does for the speaker, especially across different social classes.

The core idea presented is that thoughtless or imprecise use of language, especially considering the listener's context, is problematic. The passage concludes that only a "fool" would speak the same way to everyone, emphasizing the need for careful handling and consideration in communication.

Evaluation of Options

Let's evaluate each option in the context of the passage:

- **Option 1: hurts others** - While careless speech might hurt others, the passage primarily focuses on the breakdown of communication and unintended consequences rather than direct emotional harm.
- **Option 2: leads to carelessness** - The passage states that speech *can* be used carelessly, but carelessness itself is presented as a potential cause of the curse, not the curse itself. The curse arises from the *result* of careless speech.
- **Option 3: creates misunderstanding** - This aligns perfectly with the passage's examples. Slips of the tongue, ambiguous words, and differing interpretations all point towards speech creating misunderstanding, which is identified as the reason it becomes a curse. The passage states, "...if we use it carelessly, make our attitude completely misunderstood."
- **Option 4: reveals our intentions** - The passage presents revealing intentions as a benefit of speech ("helps us to make our intentions and desires known"), not a reason for it to be a curse.

Conclusion on Speech as a Curse

Based on the direct statements and examples within the passage, speech becomes a curse primarily when it leads to **misunderstanding**. The text emphasizes that errors in word choice, slips of the tongue, and failure to consider the listener's perspective can result in unintended meanings, turning a potentially positive act of communication into a negative one.

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35. **Answer: b**

Explanation:

Speech: Understanding Its Communication Role

This question asks us to identify the primary function of speech based on the provided passage. We need to carefully read the text and determine which option best describes speech according to the author's points.

Analyzing the Passage on Speech

The passage highlights that speech is both a significant advantage ("great blessing") and a potential disadvantage ("great curse"). It explains that speech enables us to share our thoughts and wishes with others ("make our intentions and desires known to our fellows"). However, the passage also strongly cautions against using speech carelessly. Mistakes like a "slip of the tongue" or using unclear words ("ambiguous word") can lead to misunderstandings and unintended negative consequences, like making an enemy instead of a friend. It further points out that social differences affect vocabulary and that careless speech can cause confusion because words might have different meanings for different listeners. The core message emphasizes that speech requires thoughtful and careful use ("careful handling") and that speaking the same way to everyone is foolish.

Evaluating the Options in Context

Let's examine each option based on the passage:

- **Option 1: creates confusion**

  The passage mentions that speech *can* create confusion if used carelessly ("make our attitude completely misunderstood", "unusual word, or of an ambiguous word"). However, confusion is presented as a potential negative outcome of misuse, not the fundamental definition or purpose of speech itself.

- **Option 2: communicates our meaning clearly to our fellows**

  This option aligns directly with the passage's statement that speech "helps us to make our intentions and desires known to our fellows". This is presented as the primary positive function of speech, even though the passage also warns about potential misunderstandings.

- **Option 3: becomes ambiguous**

  Similar to confusion, ambiguity is mentioned as a risk ("use of an ambiguous word") associated with careless speech. It's a potential problem, not the definition of speech.

- **Option 4: is used lightly**

  The passage explicitly contradicts this. It states speech is "not a gift to use lightly without thought, but one which demands careful handling." It calls using speech carelessly a characteristic of a "fool".

Conclusion: The Purpose of Speech

Based on the passage, while speech carries risks of confusion and misunderstanding if handled improperly, its fundamental purpose and benefit is effective communication. The passage states it "helps us to make our intentions and desires known to our fellows". Therefore, the option that best captures this essential function is that speech communicates our meaning clearly to others.

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36. **Answer: b**

Explanation:

Understanding the Word Coding Pattern

This question involves a simple coding technique where words are represented by numbers. To solve this, we need to figure out the relationship between the letters in the given words ('PAN', 'PAR') and their corresponding numbers ('31', '35'). A common method in these types of problems is to use the position of each letter in the alphabet.

Let's assign numerical values to the letters based on their alphabetical order:

- A = 1
- B = 2
- C = 3

  ...
- P = 16
- ...
- N = 14

- R = 18
- T = 20

Decoding 'PAN' and 'PAR'

Let's test the theory of summing the alphabetical positions for the given examples:

Code for 'PAN'

- P is the 16^{th} letter.
- A is the 1^{st} letter.
- N is the 14^{th} letter.

Adding these positions:

Calculation: P + A + N = 16 + 1 + 14 = 31

The sum matches the given code (31) for 'PAN'.

Code for 'PAR'

- P is the 16^{th} letter.
- A is the 1^{st} letter.
- R is the 18^{th} letter.

Adding these positions:

Calculation: P + A + R = 16 + 1 + 18 = 35

This sum also matches the given code (35) for 'PAR'.

Calculating the Code for 'PAT'

Now that we've confirmed the pattern (sum of alphabetical positions), we can apply it to the word 'PAT':

- P is the 16^{th} letter.
- A is the 1^{st} letter.

- T is the 20^{th} letter.

Adding these positions:

Calculation: $P + A + T = 16 + 1 + 20 = 37$

Final Answer

Following the established pattern, the code for 'PAT' is 37. This corresponds to option 2.

---

37. Answer: d

Explanation:

Understanding the Communication Process Steps

Effective communication is a fundamental process involving the exchange of information between individuals. This process can be broken down into several key steps. Understanding the sequence and purpose of each step helps in improving communication clarity and effectiveness. Let's explore the typical stages involved in communication.

Key Stages in the Communication Process

The communication process generally follows a sequence:

- **Sender:** The originator of the message.
- **Encoding:** The sender converts their ideas or thoughts into a communicable form, like words, gestures, or symbols.
- **Message:** The actual information, idea, or feeling that is encoded by the sender.
- **Channel:** The medium through which the message travels from the sender to the receiver (e.g., email, phone call, face-to-face conversation).
- **Decoding:** The receiver interprets the message received through the chosen channel to understand its meaning.

- **Receiver:** The intended recipient of the message.
- **Feedback:** The receiver's response or reaction to the sender's message.

Identifying the Final Step: Feedback

In the sequence of communication, after the receiver decodes the message, they often provide a response. This response is known as **Feedback**.

- **Encoding** is the initial step where the sender prepares the message.
- The **Message** is the content being conveyed, not the final action.
- **Decoding** is the step where the receiver interprets the message, occurring before the response.
- **Feedback** is the receiver's reaction or reply to the message. It signifies that the message has been received and understood (or misunderstood). Feedback closes the communication loop, allowing the sender to assess the effectiveness of their communication and potentially initiate further communication. Therefore, it is considered the final step in this linear model of the communication process.

The communication cycle often repeats or continues based on the feedback received, making feedback a crucial concluding element of a single communication exchange.

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38. **Answer: b**

Explanation:

Communication for Assigning Organizational Goals

In any organisation, clear communication is essential for operations. A key aspect is how goals are communicated to employees, especially subordinates. The specific type of communication used to assign goals follows a particular direction within the organisational hierarchy. Understanding these directions helps clarify the flow of information and directives.

Understanding Different Communication Flows

Organisational communication can be categorized based on the direction it travels. Let's look at the main types:

- **Downward Communication:** This type of communication flows from higher levels in the management hierarchy down to lower levels. It's typically used for instructions, feedback, policy explanations, and, importantly, assigning goals and tasks. When a manager tells their team members what needs to be accomplished, they are using downward communication.
- **Upward Communication:** This flows from the lower levels of the hierarchy up to the higher levels. Employees use upward communication to provide feedback to management, report progress, submit suggestions, or voice grievances. It's about reporting information upwards, not receiving directives.
- **Lateral Communication:** This occurs between individuals or departments at the same hierarchical level. It is crucial for coordination, sharing information, and solving problems collaboratively between peers or different teams working on related tasks.
- **Informal Communication:** This type operates outside the official, structured channels. Often called the "grapevine," it relies on social connections. While it can spread information quickly, it's not reliable for formal instructions like goal assignment.

Analysing Communication for Goal Assignment

The question specifically asks about communication used to **assign goals** to **subordinates**. This involves a superior giving instructions or objectives to those who report to them.

- Assigning goals is a directive function, moving from management downwards.
- Upward communication moves information from subordinates to management, the opposite direction needed for assigning goals.
- Lateral communication occurs between equals and isn't the primary channel for a superior to assign goals to their subordinates.
- Informal communication lacks the structure and authority needed for formal goal assignment.

Therefore, the flow of communication that fits the purpose of assigning goals from a superior to a subordinate is downwards.

Comparison of Communication Types

Communication Type	Direction of Flow	Primary Use Case Related to Goals
Downward Communication	Manager to Subordinate (Top-to-Bottom)	**Assigning goals**, giving instructions
Upward Communication	Subordinate to Manager (Bottom-to-Top)	Reporting progress on goals, providing feedback
Lateral Communication	Peer to Peer (Horizontal)	Coordinating tasks related to goals
Informal Communication	Unofficial Channels	Discussing goals casually, not for formal assignment

Conclusion on Communication Direction

Based on the analysis, communication that is used to **assign goals** to **subordinates** in an organisation is known as **downward communication**. This ensures that objectives are clearly communicated from management to the workforce.

---

39. **Answer: c**

Explanation:

Understanding Workplace Communication Barriers

Effective communication is crucial for a smooth-running workplace. However, various factors can hinder the successful transmission and reception of messages.

These hindrances are known as **communication barriers**. Let's examine the options provided to identify which one does not represent such a barrier.

Identifying Communication Barriers

A **communication barrier** is anything that prevents effective communication. It can distort the message being sent or received, leading to misunderstandings, errors, or conflict. Common barriers include:

- Physical distractions (like noise)
- Psychological factors (like prejudice or assumptions)
- Semantic issues (different interpretations of words)
- Organizational issues (like unclear channels or hierarchy)
- Relational issues (lack of trust or rapport)
- Medium issues (using the wrong communication channel)

Analyzing the Options

Let's look at each option in the context of workplace communication:

- **Noise:** This can be literal sound (like background chatter or machinery) or figurative noise (like distractions, stress, or irrelevant information). In either case, **noise** interferes with the message, making it a clear communication barrier.
- **Prejudice:** Holding preconceived notions or biases against a person or group can significantly distort how their messages are interpreted. **Prejudice** prevents objective understanding and is a major psychological barrier to effective communication.
- **Active listening:** This involves fully concentrating on, understanding, responding to, and remembering what is being said. **Active listening** is a skill that *enhances* communication by ensuring messages are received accurately and fostering better understanding. It is the opposite of a barrier; it's a tool to overcome barriers.
- **Improper medium:** Choosing the wrong channel for communication (e.g., using a text message for sensitive feedback or an email for an urgent request that needs immediate attention) can lead to delays, misinterpretations, or the

message being missed entirely. Therefore, an **improper medium** acts as a communication barrier.

Conclusion on Barriers

Based on the analysis, Noise, Prejudice, and Improper Medium are all recognized obstacles that hinder clear communication in a professional setting. They create interference or distortion in the communication process.

The Role of Active Listening

Conversely, **Active listening** is a technique used to improve communication effectiveness. By focusing intently on the speaker, asking clarifying questions, and providing feedback, the listener ensures they understand the message correctly. This skill helps break down other potential barriers, rather than creating one.

Therefore, the option that is **not** a communication barrier is **Active listening**.

---

40. **Answer: c**

Explanation:

Solving the Square Root Equation

The question asks us to find the unknown number, represented by a question mark (`?`), in the given mathematical equation. The equation provided is:

$$\frac{\sqrt{?}}{19} = 4$$

Our goal is to isolate the question mark and find its value by performing algebraic operations. We need to identify the specific number that satisfies this condition.

Step-by-Step Calculation

We can solve this equation step-by-step:

- **Step 1: Isolate the square root term.** To get the square root term (\(\sqrt ? \)) by itself, we multiply both sides of the equation by 19.

$$\sqrt{?} = 4 \times 19$$

Now, we calculate the product on the right side:

$$\sqrt{?} = 76$$

- **Step 2: Eliminate the square root.** To find the value of the number under the square root (?), we need to square both sides of the equation. Squaring is the inverse operation of taking a square root.

$$(\sqrt{?})^2 = 76^2$$

$$? = 76^2$$

- **Step 3: Calculate the final value.** Now, we need to compute 76 squared (76 \times 76).

$$? = 76 \times 76$$

$$? = 5776$$

Comparing with Provided Options

The calculated value for the question mark is 5776. Let's compare this with the options given:

- Option 1: 5876
- Option 2: 5866
- Option 3: 5776
- Option 4: 5766

Our calculated result, 5776, matches exactly with Option 3.

Final Answer Derivation

By following the steps of isolating the square root term and then squaring both sides of the equation

$$\frac{\sqrt{?}}{19} = 4$$

, we determined that the number replacing the question mark must be `5776`. This is because

$$\frac{\sqrt{5776}}{19} = \frac{76}{19} = 4$$

.

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41. Answer: d

Explanation:

Correct Order of Food Processing Terms

The question asks to identify the correct sequence for the terms 'Digestion', 'mastication', and 'cooking'. These words relate to the different stages involved in preparing and processing food before it can be absorbed by the body.

Understanding the Terms

To determine the correct order, let's understand what each term means in the context of food processing:

- **Cooking**: This is the process of preparing food using heat or other methods before it is consumed. It often makes food safer, more digestible, and tastier. Cooking happens *before* the food enters the body.
- **Mastication**: This term refers to the act of chewing food. It's the mechanical breakdown of food into smaller pieces in the mouth, mixing it with saliva. Mastication occurs *after* food has been prepared (e.g., cooked) and placed in the mouth, but *before* swallowing.
- **Digestion**: This is the overall process by which the digestive system breaks down food into molecules small enough to be absorbed into the bloodstream. Digestion involves both mechanical (like chewing) and chemical processes. While it starts in the mouth with mastication, the term often refers to the

subsequent breakdown in the stomach and intestines. In this sequence, it represents the stage following mastication.

Determining the Correct Sequence

Let's analyze the logical flow of these actions:

1. **Cooking**: Food is typically prepared or cooked first. This is an external process done before eating.
2. **Mastication**: Once the food is cooked and served, it is eaten. The first step in processing the food within the body is chewing, which is mastication.
3. **Digestion**: After mastication and swallowing, the food moves further into the digestive tract (stomach, intestines), where the main process of digestion continues, breaking down nutrients for absorption.

Based on this natural progression, the correct order is **cooking**, followed by **mastication**, and finally **digestion**.

Evaluating the Options

Let's compare this logical sequence with the given options:

- Option 1: Digestion, mastication, cooking - Incorrect.
- Option 2: mastication, cooking, digestion - Incorrect.
- Option 3: cooking, digestion, mastication - Incorrect.
- Option 4: cooking, mastication, digestion - Correct. This matches the logical sequence of food processing.

Therefore, the correct order of the words is **cooking, mastication, digestion**.

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42. Answer: c

Explanation:

Understanding Definition Types: Analyzing 'A plant is a vegetable organism'

Definitions are crucial for clarifying the meaning of words and concepts. Different types of definitions exist, each serving a specific purpose in explaining a term. Understanding these types helps us grasp the nuances of language.

What Constitutes a Synonymous Definition?

A **synonymous definition** explains a term by using a word or phrase that has a very similar meaning (a synonym) or is closely related in meaning. Essentially, it clarifies a word by stating it is another word that means almost the same thing.

For instance, defining a car as an automobile is a classic example of a synonymous definition because 'car' and 'automobile' refer to the same type of vehicle.

Analysis of the Statement: 'A plant is a vegetable organism'

Let's examine the given statement: 'A plant is a vegetable organism'.

- The term 'plant' refers to living organisms of the kind exemplified by trees, shrubs, herbs, grasses, ferns, and mosses, typically growing in a permanent site, absorbing nutrients from the soil, through their roots, and distinguishing themselves from animals by their lack of locomotion or sentient nervous system. They typically also have a specialized structure including roots, stems, leaves, and reproductive organs.
- The phrase 'vegetable organism' relates closely to the concept of a plant. While 'vegetable' often refers specifically to edible plant parts, in a broader biological or descriptive sense, an organism that grows and functions like a plant can be termed a 'vegetable organism'. The terms are closely linked, with 'plant' being the primary term and 'vegetable organism' describing it using closely associated concepts.

Therefore, defining 'plant' using the phrase 'vegetable organism' fits the pattern of a **synonymous definition** because it uses closely related terminology to explain the primary term.

Comparing with Other Definition Types

Let's consider why the other options are not the best fit for the statement 'A plant is a vegetable organism':

- **Figurative definition:** This type of definition uses comparisons, metaphors, or similes. The statement does not use any comparison or figurative language.
- **Negative definition:** This definition explains what something is *not*. The statement 'A plant is a vegetable organism' explains what a plant *is*, not what it isn't.
- **Accidental definition:** This defines a term by listing its properties or attributes rather than its essential nature. While being a 'vegetable organism' could be considered an attribute, the phrasing strongly implies defining the term through closely related words, making the 'synonymous' classification more direct and accurate in this context.

Conclusion

Based on the analysis, the statement 'A plant is a vegetable organism' serves to explain the term 'plant' by using closely related concepts, aligning it clearly with the characteristics of a **synonymous definition**.

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43. **Answer: b**

Explanation:

Decoding Symbol Substitution in Mathematical Expressions

This problem requires us to evaluate a mathematical expression after redefining the meaning of the standard arithmetic operators ('+', '−', '×', '÷'). We need to carefully substitute the operators according to the given rules and then solve the resulting expression using the correct order of operations.

Operator Redefinition Rules

The question provides a specific key for substituting the operators:

- The symbol '+' represents multiplication ('×').
- The symbol '-' represents division ('÷').
- The symbol '×' represents subtraction ('-').
- The symbol '÷' represents addition ('+').

Let's summarize these rules in a table for clarity:

Original Operator	New Meaning
+	×
-	÷
×	-
÷	+

Rewriting the Expression with New Operator Meanings

The original expression given is: $4 \div 8 - 2 \times 2 + 4$.

Now, we apply the substitution rules to each operator in the expression:

- Replace '÷' with '+': $4 + 8$
- Replace '-' with '÷': $8 \div 2$
- Replace '×' with '-': $2 - 2$
- Replace '+' with '×': 2×4

Combining these substitutions, the expression becomes:

$4 + 8 \div 2 - 2 \times 4$

Evaluating the Transformed Expression

To evaluate the new expression $4 + 8 \div 2 - 2 \times 4$, we must follow the standard order of operations (often remembered by the acronym BODMAS/PEMDAS):

1. **B**rackets / **P**arentheses
2. **O**rders / **E**xponents
3. **D**ivision and **M**ultiplication (from left to right)
4. **A**ddition and **S**ubtraction (from left to right)

Let's apply these steps:

1. **Division:** First, perform the division:

$$8 \div 2 = 4$$

   The expression now is: $4 + 4 - 2 \times 4$
2. **Multiplication:** Next, perform the multiplication:

$$2 \times 4 = 8$$

   The expression is now: $4 + 4 - 8$
3. **Addition:** Perform the addition from left to right:

$$4 + 4 = 8$$

   The expression is now: $8 - 8$
4. **Subtraction:** Finally, perform the subtraction:

$$8 - 8 = 0$$

Final Result

After substituting the operators and following the order of operations, the value of the expression $4 \div 8 - 2 \times 2 + 4$ is 0.

---

44. Answer: c

Explanation:

This solution aims to analyze the given family relationship statements and determine the valid conclusion that can be drawn.

Analyzing Family Relationship Statements

We are given three statements about family members, including Ravi, Kamla, Premlata, and Sita. Let's break down each statement to understand the relationships:

- **Statement 1: Kamla is not Ravi's wife.** This statement explicitly tells us that Kamla does not have the relationship of wife with Ravi.
- **Statement 2: Premlata is Ravi's mother.** This establishes a direct maternal link: Premlata is the mother, and Ravi is her son.
- **Statement 3: Sita is the only daughter-in-law of Premlata.** This is a crucial piece of information. It means that Premlata has only one son who is married, and his wife is Sita.

Deriving the Conclusion about Ravi and Sita

By combining statements 2 and 3, we can logically deduce the relationship between Ravi and Sita:

1. From Statement 2, we know that Ravi is the son of Premlata.
2. From Statement 3, we know that Premlata has exactly one daughter-in-law.
3. Since Ravi is Premlata's son, and Premlata has only one daughter-in-law, it must be the case that Ravi's wife is Premlata's only daughter-in-law.
4. Therefore, Sita, being the only daughter-in-law of Premlata, must be married to Ravi.

This leads us to the conclusion: **Sita is Ravi's wife**.

Evaluating the Options

Now, let's check each option against our derived conclusion and the initial statements:

- **Option 1: Kamla is sister of Sita.** The statements provide no information about Kamla's relationship to Sita. We cannot conclude this.
- **Option 2: Premlata is mother of Kamla.** We know Premlata is Ravi's mother (Statement 2), but there is no information connecting Premlata to Kamla as her mother. We cannot conclude this.
- **Option 3: Sita is Ravi's wife.** As determined in the previous section, this conclusion logically follows from combining Statement 2 (Premlata is Ravi's mother) and Statement 3 (Sita is Premlata's only daughter-in-law).
- **Option 4: Kamla is daughter-in-law of Premlata.** Statement 3 clearly states that Sita is the *only* daughter-in-law. Since we concluded Sita is Ravi's wife, Kamla cannot be the daughter-in-law of Premlata. Statement 1 also confirms Kamla is not Ravi's wife, which reinforces that she is not Premlata's daughter-in-law through Ravi. We cannot conclude this.

Based on the logical deduction from the given statements, the only conclusion that can be drawn is that Sita is Ravi's wife.

---

45. **Answer: c**

Explanation:

This solution explains how to determine the valid conclusion from a set of logical premises using deductive reasoning. We will analyze the given statements about heroes, cowards, and soldiers.

Premise Analysis: Heroes, Cowards, and Soldiers

First, let's understand the two premises provided:

- **Premise 1: No hero is a coward.** This statement establishes a complete separation between the group of 'heroes' and the group of 'cowards'. It means that if someone is a hero, they cannot be a coward, and conversely, if someone is a coward, they cannot be a hero. In set theory terms, the set of heroes and the set of cowards are disjoint (they have no members in

common). Mathematically, we can represent this as:

$$\forall x(\text{Hero}(x) \rightarrow \neg\text{Coward}(x))$$

Or simply, the intersection of Heroes (H) and Cowards (C) is empty: $H \cap C = \emptyset$.

- **Premise 2: Some soldiers are cowards.** This statement tells us that there exists at least one individual who is both a soldier and a coward. The group of 'soldiers' and the group of 'cowards' overlap. Mathematically, this is represented as:

$$\exists x(\text{Soldier}(x) \wedge \text{Coward}(x))$$

This means the intersection of Soldiers (S) and Cowards (C) is not empty: $S \cap C \neq \emptyset$.

Conclusion Validation: Soldier Status

Now, let's evaluate each of the given conclusions based on these premises:

1. **Conclusion 1: No soldier is a coward.**

   This conclusion directly contradicts Premise 2, which explicitly states that "Some soldiers are cowards." Therefore, this conclusion is invalid.

2. **Conclusion 2: All soldiers are heroes.**

   From Premise 2, we know there is at least one soldier who is a coward. Let's call this person Alex. So, Alex is a soldier and Alex is a coward. Premise 1 states that no hero is a coward, meaning anyone who is a coward cannot be a hero. Since Alex is a coward, Alex cannot be a hero. Because we found one soldier (Alex) who is not a hero, the conclusion that *all* soldiers are heroes must be false. Therefore, this conclusion is invalid.

3. **Conclusion 3: Some soldiers are not heroes.**

   Let's revisit Alex, the soldier who is a coward (from Premise 2). According to Premise 1, anyone who is a coward cannot be a hero. Since Alex is a coward, Alex cannot be a hero. Because Alex is a soldier and Alex is not a hero, we can logically conclude that there exists at least one soldier who is not a hero. This

matches the conclusion "Some soldiers are not heroes." Therefore, this conclusion is valid.

Using the mathematical notation:

From Premise 2: $\exists a(\text{Soldier}(a) \land \text{Coward}(a))$

From Premise 1: $\forall x(\text{Coward}(x) \rightarrow \neg\text{Hero}(x))$

Since $\text{Coward}(a)$ is true, it follows that $\neg\text{Hero}(a)$ must also be true.

Combining $\text{Soldier}(a)$ and $\neg\text{Hero}(a)$, we get $\text{Soldier}(a) \land \neg\text{Hero}(a)$.

This proves the existence of at least one soldier who is not a hero: $\exists x(\text{Soldier}(x) \land \neg\text{Hero}(x))$

4. **Conclusion 4: Some soldiers are heroes.**

   We know that some soldiers are cowards, and these soldiers cannot be heroes. However, the premises do not tell us anything about the soldiers who are *not* cowards. It's possible that none of these non-cowardly soldiers are heroes, or maybe some of them are. We cannot definitively conclude that *some* soldiers *are* heroes based solely on the information given. Therefore, this conclusion is invalid.

Venn Diagram Explanation

We can visualize this using Venn diagrams:

- Draw three circles representing Soldiers (S), Cowards (C), and Heroes (H).
- Premise 1 ("No hero is a coward") means the circles C and H do not overlap at all.
- Premise 2 ("Some soldiers are cowards") means the circle S must overlap with circle C. Place an 'X' in the overlapping region of S and C to represent the soldiers who are cowards.
- Because the C and H circles are completely separate (Premise 1), the 'X' which is in the $S \cap C$ region cannot possibly be inside the H circle.
- This 'X' therefore represents someone who is a Soldier (S) and a Coward (C) but is *outside* the Hero (H) circle. This visually confirms that there exists at

least one soldier who is not a hero.

Final Deduction

Based on the logical analysis of the premises, only one conclusion necessarily follows: "Some soldiers are not heroes." This is because the soldiers who are identified as cowards in Premise 2 are explicitly excluded from being heroes by Premise 1.

---

46. **Answer: a**

Explanation:

Understanding the Classification of Divisions: The Case of Indians

This question asks us to identify the correct type of division used when 'Indians' are categorized based on distinct characteristics like wealth and intelligence.

The Scenario: Dividing Indians Based on Multiple Criteria

The specific scenario involves dividing the population of Indians into groups based on two different attributes:

- Economic status: Separating people into **rich** and **poor**.
- Intellectual capacity: Separating people into **intelligent** and **dull**.

This method of division considers multiple, distinct characteristics simultaneously.

Defining Cross Division

A **Cross division** occurs when a subject or concept is divided based on two or more differing principles or characteristics at the same time. The resulting categories are often not mutually exclusive when viewed from a single perspective, as they combine different types of classifications.

In the given example:

- The division is based on economic status (**rich**, **poor**) AND intellectual ability (**intelligent**, **dull**).
- This creates overlapping possibilities, such as someone being both **rich** and **intelligent**, or **poor** and **dull**.
- It's a division that cuts across different aspects of the subject (Indians).

Therefore, the 'division of Indians into rich, poor, intelligent and dull' is a clear instance of a **Cross division**.

Comparing with Other Division Types

Let's examine why the other options are not suitable for this scenario:

Logical Division Explained

A **Logical division** typically involves breaking down a subject into mutually exclusive and exhaustive categories based on a single principle of classification. For example, dividing 'animals' into 'mammals', 'reptiles', 'birds', etc., where each category is distinct and covers all possibilities under that single principle. The division described in the question uses multiple principles (wealth AND intelligence), making it different from a standard logical division.

Physical Division Explained

Physical division relates to separating something based on its physical attributes, location, or spatial separation. Examples include dividing a country into states or a piece of land into plots. This type of division is not relevant to categorizing people based on economic or intellectual traits.

Metaphysical Division Explained

Metaphysical division deals with abstract or philosophical distinctions concerning the fundamental nature of reality, existence, or concepts. It's about inherent qualities or essences rather than observable characteristics used for practical classification. This is clearly not applicable to the example provided.

Conclusion: Identifying the Correct Division Type

Based on the analysis, the method of dividing Indians into groups defined by both economic status (**rich**, **poor**) and intellectual capacity (**intelligent**, **dull**) fits the definition of a **Cross division** because it employs multiple, distinct criteria simultaneously.

---

47. **Answer: c**

Explanation:

In each option, except for option (3), there are two concentric similar shapes.

In option (3), there is a rectangle inside a triangle.

Hence, **option (3)** is different from the others.

---

48. **Answer: c**

Explanation:

Understanding the Logic Statements: Poets and Idlers

The question presents two distinct statements regarding the relationship between the categories 'poets' and 'idlers'. We need to determine which conclusion about the truthfulness of these statements can be logically derived.

- Statement A: **All poets are idlers**. This statement asserts that every member belonging to the group 'poets' is also necessarily a member of the group 'idlers'.

- Statement B: **No poets are idlers**. This statement asserts that there is no member that belongs to both the group 'poets' and the group 'idlers'. The two groups are mutually exclusive.

Analyzing the Relationship Between Statements A and B

In logic, statements like A and B, which concern the universal relationship between two categories ('poets' and 'idlers'), have specific interactions. Let P denote the set of poets and I denote the set of idlers.

- Statement A means that the set P is a subset of the set I ($P \subseteq I$).
- Statement B means that the intersection of set P and set I is empty ($P \cap I = \varnothing$).

These two statements are classified as **contrary** statements. This means:

- **They cannot both be true at the same time.** If "All poets are idlers" (A) is true, then it's impossible for "No poets are idlers" (B) to also be true. If even one poet is an idler, B is false. If A is true, all poets are idlers, meaning B must be false.
- **They can both be false at the same time.**

Exploring Possible Scenarios for Statement Truth Values

We can explore the different possibilities for the truth values of statements A and B:

- **Scenario 1: Statement A is True, and Statement B is False.** This is possible. Imagine a world where every poet is indeed an idler. In this case, A holds true. Since A is true, B ("No poets are idlers") must be false.
- **Scenario 2: Statement A is False, and Statement B is True.** This is also possible. Imagine a world where the groups of poets and idlers are completely separate; no poet is an idler. In this case, B holds true. Since B is true, A ("All poets are idlers") must be false.
- **Scenario 3: Both Statements A and B are False.** This scenario is the key characteristic of contrary statements. It occurs when the relationship between poets and idlers is mixed. For instance, suppose there are poets who are idlers, and there are also poets who are *not* idlers.
    - In this situation, "All poets are idlers" (A) is false because there's at least one poet who isn't an idler.

    - And "No poets are idlers" (B) is also false because there's at least one poet who is an idler.

  Since both statements can be false under this condition, this scenario is logically possible.
- **Scenario 4: Both Statements A and B are True.** As established earlier, this is impossible because A and B are contrary statements. They contradict each other regarding the universal relationship.

Evaluating the Options Based on Logical Possibilities

Now let's assess the given options in light of our analysis:

- **Option 1: A can be true and B can be false.** This scenario (Scenario 1) is logically possible.
- **Option 2: A can be false and B can be true.** This scenario (Scenario 2) is also logically possible.
- **Option 3: Both statements A and B can be false.** This scenario (Scenario 3) is logically possible and is a defining feature of contrary statements.
- **Option 4: Both statements A and B can be true.** This scenario (Scenario 4) is logically impossible.

Conclusion on the Drawn Inference

The question asks for a conclusion that can be logically drawn. While scenarios 1 and 2 describe possible situations, the fact that both contrary statements can be false is a fundamental aspect of their logical relationship. Therefore, the conclusion that logically can be drawn is that the possibility exists for both statements to be simultaneously untrue.

The correct conclusion is that **Both statements A and B can be false**.

---

49. **Answer: c**

Explanation:

Identifying the Letter Connection Pattern between GJ and QU

The question asks to find a pair of letter pairs that exhibit the same relationship as the connection between GJ and QU. To solve this, we need to identify the pattern or logic connecting the letters in the first pair (GJ) to the letters in the second pair (QU).

Analyzing the Initial Pair (GJ to QU)

First, let's determine the alphabetical positions for each letter:

- G is the 7^{th} letter.
- J is the 10^{th} letter.
- Q is the 17^{th} letter.
- U is the 21^{st} letter.

Now, let's look at the relationships:

1. **Relationship within the first pair (GJ):** Calculate the difference in positions between J and G.
   Latex representation: $J - G = 10 - 7 = 3$. There are 3 letters between G and J (H, I).
2. **Relationship within the second pair (QU):** Calculate the difference in positions between U and Q.
   Latex representation: $U - Q = 21 - 17 = 4$. There are 4 letters between Q and U (R, S, T).
3. **Comparison of Gaps:** Notice that the gap between the letters increases from the first pair to the second pair.
   Latex representation: $4 - 3 = 1$. The gap increases by 1.
4. **Relationship between the first letters (G to Q):** Calculate the difference in positions between Q and G.
   Latex representation: $Q - G = 17 - 7 = 10$.
5. **Relationship between the second letters (J to U):** Calculate the difference in positions between U and J.

Latex representation: $U - J = 21 - 10 = 11$.

6. **Comparison of Mappings:** The difference (or offset) applied to the second letter (11) is one greater than the difference applied to the first letter (10). Latex representation: $11 - 10 = 1$.

So, the identified pattern is: The gap between the letters in the second pair is 1 more than the gap in the first pair, and the offset applied to map the second letters is 1 more than the offset applied to map the first letters.

Evaluating the Options Based on the Pattern

Let's check each option against the pattern derived from GJ and QU:

Option 1: BC and WZ

- B=2, C=3. Gap = $3 - 2 = 1$.
- W=23, Z=26. Gap = $26 - 23 = 3$.
- Gap comparison: $3 - 1 = 2$. (Expected 1)
- B to W: $23 - 2 = 21$.
- C to Z: $26 - 3 = 23$.
- Mapping comparison: $23 - 21 = 2$. (Expected 1)
- Conclusion: This option does not match the pattern.

Option 2: AB and ST

- A=1, B=2. Gap = $2 - 1 = 1$.
- S=19, T=20. Gap = $20 - 19 = 1$.
- Gap comparison: $1 - 1 = 0$. (Expected 1)
- Conclusion: This option does not match the pattern.

Option 3: AD and SW

- A=1, D=4. Gap = $4 - 1 = 3$.
- S=19, W=23. Gap = $23 - 19 = 4$.
- Gap comparison: $4 - 3 = 1$. (Matches the pattern)
- A to S: $19 - 1 = 18$.

- D to W: $23 - 4 = 19$.
- Mapping comparison: $19 - 18 = 1$. (Matches the pattern)
- Conclusion: This option perfectly matches the identified pattern.

Option 4: DH and VY

- D=4, H=8. Gap = $8 - 4 = 4$.
- V=22, Y=25. Gap = $25 - 22 = 3$.
- Gap comparison: $3 - 4 = -1$. (Expected 1)
- Conclusion: This option does not match the pattern.

Final Answer Explanation

Based on the step-by-step analysis, the pair AD and SW follows the same logic as GJ and QU. Specifically:

- The difference between the letter positions within the first pair (A, D) is 3, and within the second pair (S, W) is 4. The gap increases by 1.
- The mapping from the first letter of the first pair to the first letter of the second pair (A to S) involves adding 18 positions.
- The mapping from the second letter of the first pair to the second letter of the second pair (D to W) involves adding 19 positions. The offset increases by 1.

Therefore, the pair AD and SW has the same connection as GJ and QU.

---

50. Answer: d

Explanation:

The given series: 5, 16, 51, 158, ?
The logic is shown below:
5 × 3 + 1 = 16
16 × 3 + 3 = 51
51 × 3 + 5 = 158
158 × 3 + 7 = 481

Hence, **481** will be the next term in the series.

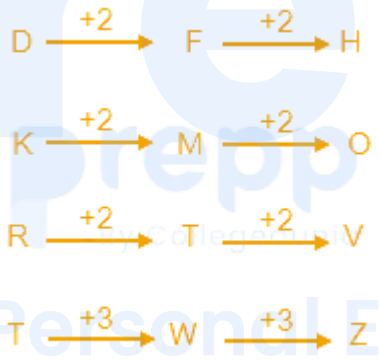
---

51. Answer: c

Explanation:

Alphabets	A	B	C	D	E	F	G	H	I	J	K	L	M
Positional value	1	2	3	4	5	6	7	8	9	10	11	12	13
Positional value	26	25	24	23	22	21	20	19	18	17	16	15	14
Alphabets	Z	Y	X	W	V	U	T	S	R	Q	P	O	N

The logic is shown below:



Clearly, TWZ is different from the other three.

---

52. Answer: b

Explanation:

Finding the Target Date

The question asks for the day of the week that falls 5 days before the 26th of the month. First, we need to identify this specific date.

Target Date = 26th of the month - 5 days

Target Date = 21st of the month

So, we need to find the day of the week for the 21st of the month.

Calculating the Day of the Week

We are given that the 4th day of the month is a Saturday. We need to find the day of the week for the 21st of the same month.

To do this, we first find the number of days between the 4th and the 21st.

Number of days = 21 - 4 = 17 days.

Determining the Day Shift using Modulo Arithmetic

Days of the week repeat every 7 days. We can find how many full weeks and extra days are in the 17-day period by using the modulo operator.

We calculate the remainder when 17 is divided by 7:

$$17 \div 7$$

The division gives us 2 with a remainder of 3.

$$17 = (2 \times 7) + 3$$

This means that the 21st day of the month is 2 full weeks and 3 days after the 4th day (which is a Saturday).

Finding the Final Day

Since the 4th is a Saturday, we need to count 3 days forward from Saturday to find the day of the week for the 21st.

- Saturday + 1 day = Sunday

- Saturday + 2 days = Monday
- Saturday + 3 days = Tuesday

Therefore, the 21st of the month will be a Tuesday.

Conclusion

The 5th day before the 26th of the month is the 21st. Given that the 4th was a Saturday, the 21st falls on a Tuesday.

---

53. Answer: b

Explanation:

Decoding the M, T, W, T Sequence

This question requires us to identify the pattern in the sequence M, T, W, T and determine the next three elements from the provided options. The sequence uses initials, and we need to find the rule governing these initials.

Identifying the Sequence Pattern

Let's look closely at the given elements of the sequence:

- M
- T
- W
- T

A common pattern involving such letters is the sequence of the days of the week. Let's test if these letters correspond to the first letter of the days starting from Monday:

- **M** stands for **Monday**.
- **T** stands for **Tuesday**.
- **W** stands for **Wednesday**.

- The second **T** stands for **Thursday**.

The pattern holds true. The sequence represents the first letters of the days of the week in order.

Completing the Sequence

To complete the sequence, we need to find the letters corresponding to the days following Thursday:

The days following Thursday are Friday, Saturday, and Sunday.

Let's find the first letter for each of these days:

- Friday starts with **F**.
- Saturday starts with **S**.
- Sunday starts with **S**.

So, the sequence should be completed with the letters F, S, S.

Matching with Options

Now, we check which option matches the sequence F, S, S:

- Option 1: F, S, T - Incorrect. The last letter T does not match Sunday (S).
- Option 2: F, S, S - Correct. This sequence matches the initials of Friday, Saturday, and Sunday.
- Option 3: S, F, T - Incorrect. This sequence does not start correctly.
- Option 4: T, F, S - Incorrect. This sequence also does not start correctly.

Option 2 provides the correct letters F, S, S to complete the sequence.

Final Answer Summary

The sequence M, T, W, T represents the initial letters of Monday, Tuesday, Wednesday, and Thursday. By continuing the pattern of the days of the week, the next letters are F (Friday), S (Saturday), and S (Sunday). Therefore, the completed sequence is M, T, W, T, F, S, S.

54. **Answer: d**

Explanation:

Relationship Analysis Between Two Americans

This question involves a word puzzle focusing on family connections. We need to figure out the relationship between two Americans given the specific clue: **"One is father of the son of the other."** Let's carefully examine this statement to solve the riddle.

Understanding the Core Relationship Clue

The key phrase is **"father of the son of the other."** Let's break this down by considering the two individuals involved:

- Let's call the two Americans Person A and Person B.
- The statement says one person (let's say Person A) is the **father** of the son of the other person (Person B).
- For Person A to be the **father** of Person B's son, Person B must be the **mother** of that son.
- This means Person A is the father, and Person B is the mother of the same child (their son).

Determining the Relationship

If Person A is the father and Person B is the mother of the same child, the relationship between Person A and Person B is that of a **Husband and Wife**.

We can visualize this:

- Person A = Father
- Person B = Mother
- Son = Their Child

The condition states: Person A (Father) is the father of the son of Person B (Mother). This is a true statement within a husband-wife relationship where they have a son together.

Evaluating the Given Options

Let's look at why the provided options fit or don't fit this logic:

- **Father - Son:** If Person A is the father and Person B is the son, the condition "Person A is father of the son of Person B" doesn't fit naturally. It would mean the father is the father of the son of his own son, which is unlikely.
- **Mother - Son:** If Person A is the mother and Person B is the son, the condition requires Person A to be a father, which contradicts her being a mother.
- **Mother - Daughter:** Similar to the Mother-Son case, this option fails because the condition specifies a **father**.
- **Husband - Wife:** As analyzed above, this fits perfectly. The husband is the father of their son, making him the father of the son of his wife.

Final Conclusion

Based on the breakdown of the phrase **"One is father of the son of the other"**, the relationship between the two Americans must be **Husband - Wife**.

---

55. Answer: b

Explanation:

Square Roots of 841 and 3249

The question asks us to find the number of **natural numbers** that lie *in between* the square roots of 841 and 3249. Natural numbers are the positive whole numbers starting from 1 (i.e., 1, 2, 3, ...).

Step 1: Calculate the square root of 841
We need to find a number which, when multiplied by itself, results in 841. Let's

estimate: we know $20 \times 20 = 400$ and $30 \times 30 = 900$. Since 841 falls between 400 and 900, its square root must be between 20 and 30. The last digit of 841 is 1. Squaring numbers ending in 1 or 9 results in a number ending in 1. Let's test 29:

$$29 \times 29 = 841$$

So, the value of $\sqrt{841}$ is 29.

Step 2: Calculate the square root of 3249
Similarly, we find the square root of 3249. We know $50 \times 50 = 2500$ and $60 \times 60 = 3600$. Since 3249 is between 2500 and 3600, its square root lies between 50 and 60. The last digit of 3249 is 9. Squaring numbers ending in 3 or 7 results in a number ending in 9. Let's test 57:

$$57 \times 57 = 3249$$

So, the value of $\sqrt{3249}$ is 57.

Natural Numbers Between

We have found that $\sqrt{841} = 29$ and $\sqrt{3249} = 57$. The question requires us to count the **natural numbers** that are strictly *between* these two values. This means we are looking for natural numbers n such that:

$$29 < n < 57$$

The natural numbers that fit this condition start from the number immediately after 29, which is 30, and go up to the number immediately before 57, which is 56. The sequence of these numbers is: 30, 31, 32, ..., 55, 56.

Natural Numbers Count

To find the total count of these natural numbers in the sequence from 30 to 56, we can use a standard formula for counting the number of integers in an inclusive range:

$$\text{Count} = (\text{Last Number} - \text{First Number}) + 1$$

In this sequence, the first number is 30 and the last number is 56.

Plugging these values into the formula:

$$\text{Count} = (56 - 30) + 1$$

First, calculate the difference:

$$56 - 30 = 26$$

Then, add 1:

$$26 + 1 = 27$$

Therefore, there are 27 natural numbers between $\sqrt{841}$ and $\sqrt{3249}$.

---

56. Answer: c

Explanation:

This question requires us to find the ratio between two variables, **X** and **Y**, based on a given relationship involving percentages.

Setting up the Relationship Equation

The problem states that "20% of (X + Y) = 50% of (X - Y)". We need to translate this statement into a mathematical equation.

- First, express the percentages as fractions or decimals:
  - $20\% = \frac{20}{100} = 0.2$
  - $50\% = \frac{50}{100} = 0.5$
- Now, substitute these values back into the given statement:

$$0.2 \times (X + Y) = 0.5 \times (X - Y)$$

Simplifying the Equation

To find the relationship between **X** and **Y**, we need to simplify the equation obtained above. We can start by eliminating the decimals to make calculations easier.

- Multiply both sides of the equation by 10:

$$10 \times [0.2 \times (X + Y)] = 10 \times [0.5 \times (X - Y)]$$

$$2 \times (X + Y) = 5 \times (X - Y)$$

- Distribute the constants on both sides of the equation:

$$2X + 2Y = 5X - 5Y$$

- Rearrange the terms to group **X** terms on one side and **Y** terms on the other. Let's move the **X** terms to the right side and the **Y** terms to the left side:

$$2Y + 5Y = 5X - 2X$$

- Combine the like terms:

$$7Y = 3X$$

Determining the Ratio X : Y

The simplified equation is $7Y = 3X$. To find the ratio **X : Y**, we need to express this equation in the form $\frac{X}{Y}$.

- Divide both sides of the equation $7Y = 3X$ by **Y**:

$$7 = \frac{3X}{Y}$$

- Now, divide both sides by 3:

$$\frac{7}{3} = \frac{X}{Y}$$

- This can be written as the ratio $X : Y$.

$$X : Y = 7 : 3$$

Therefore, the ratio of **X** to **Y** is 7 : 3.

---

57. Answer: b

Explanation:

CI = 340, t = 2 years and r = 12.5%

As we know,

$CI = P[(1 + r/100)^t - 1]$

$\Rightarrow 340 = P[1 + 12.5/100)^2 - 1]$

$\Rightarrow 340 = P[(1 + 1/8)^2 - 1]$

$\Rightarrow 340 = P[(9/8)^2 - 1]$

$\Rightarrow 340 = P[81/64 - 1]$

$\Rightarrow 340 = P \times 17/64$

$\Rightarrow P = 340 \times 64/17$

$\Rightarrow P = 1280$

As we know,

$SI = Prt/100$

$\therefore SI = (1280 \times 12.5 \times 2)/100 = 320$

---

58. Answer: d

Explanation:

As we know,

Area of the circle = $2\pi r$

$\Rightarrow \pi r^2 = 36\pi$

$\Rightarrow r = \sqrt{36}$

⇒ r = 6

Circumference of circle = 2 πr = 2 × 6 × π = 12 π

∴ If circle divided into 6 equal part then the perimeter of the circle = 12π/6 = 2 π

---

59. **Answer: b**

Explanation:

Understanding the Revolving Triangle Problem

This question involves finding the volume of a geometric solid. We start with a **right-angled triangle**. Key information provided includes the length of the **hypotenuse** (25 cm) and the ratio of the other two sides (legs) as **3:4**. The triangle is rotated around its hypotenuse, forming a shape known as a **double cone**. Our task is to calculate the **volume** of this double cone.

Calculating the Lengths of the Triangle's Legs

Let the lengths of the two legs of the right-angled triangle be $3x$ and $4x$. The hypotenuse is given as 25 cm.

We apply the Pythagorean theorem: $a^2 + b^2 = c^2$, where a and b are the legs and c is the hypotenuse.

Substituting the given values:

$$(3x)^2 + (4x)^2 = (25)^2$$

$$9x^2 + 16x^2 = 625$$

Combine the terms with x^2:

$$25x^2 = 625$$

Solve for x^2:

$$x^2 = \frac{625}{25}$$

$$x^2 = 25$$

Now, find the value of x by taking the square root:

$$x = \sqrt{25} = 5$$

With $x = 5$, we find the lengths of the legs:

- Leg 1: $3x = 3 \times 5 = 15$ cm
- Leg 2: $4x = 4 \times 5 = 20$ cm

The sides of the triangle are 15 cm, 20 cm, and 25 cm.

Finding the Radius for the Double Cone

When the triangle revolves around the hypotenuse, it creates two cones sharing a common base. The radius (r) of this common base is the altitude from the right angle vertex to the hypotenuse.

We can find this altitude using the area of the triangle.

First, calculate the area using the legs:

$$\text{Area} = \frac{1}{2} \times (\text{leg 1}) \times (\text{leg 2})$$

$$\text{Area} = \frac{1}{2} \times 15 \text{ cm} \times 20 \text{ cm} = 150 \text{ cm}^2$$

Now, use the hypotenuse as the base and the altitude (r) as the height:

$$\text{Area} = \frac{1}{2} \times (\text{hypotenuse}) \times (\text{altitude } r)$$

$$150 \text{ cm}^2 = \frac{1}{2} \times 25 \text{ cm} \times r$$

Solve for r:

$$300 \text{ cm}^2 = 25 \text{ cm} \times r$$

$$r = \frac{300 \text{ cm}^2}{25 \text{ cm}} = 12 \text{ cm}$$

The radius of the common base of the double cone is 12 cm.

Calculating the Total Volume of the Double Cone

The solid formed consists of two cones. The sum of their heights $(h_1 + h_2)$ is equal to the length of the hypotenuse (25 cm). The formula for the volume of one cone is $V = \frac{1}{3}\pi r^2 h$.

The total volume (V_{total}) is the sum of the volumes of the two cones:

$$V_{\text{total}} = \frac{1}{3}\pi r^2 h_1 + \frac{1}{3}\pi r^2 h_2$$

Factor out the common terms:

$$V_{\text{total}} = \frac{1}{3}\pi r^2 (h_1 + h_2)$$

Substitute the known values: $r = 12$ cm and $h_1 + h_2 = 25$ cm.

$$V_{\text{total}} = \frac{1}{3}\pi (12)^2 (25)$$

$$V_{\text{total}} = \frac{1}{3}\pi (144)(25)$$

Perform the multiplication:

$$V_{\text{total}} = \pi \times (\frac{144}{3}) \times 25$$

$$V_{\text{total}} = \pi \times 48 \times 25$$

$$V_{\text{total}} = 1200\pi \text{ cm}^3$$

Final Answer Summary

The volume calculation based on the provided dimensions (hypotenuse 25 cm, sides ratio 3:4) results in a double cone volume of 1200π **cm**^{3}.

60. **Answer: d**

Explanation:

$x/y + y/x = 2$

$\Rightarrow (x^2 + y^2)/xy = 2$

$\Rightarrow x^2 + y^2 = 2xy$

$\Rightarrow x^2 + y^2 - 2xy = 0$

$\Rightarrow (x - y)^2 = 0$

$\Rightarrow x - y = 0$

$\Rightarrow x = y$

$\therefore (x^2 + y^2)/(xy + y^2)$

$\Rightarrow (x^2 + x^2)/(x^2 + x^2)$

$\Rightarrow 2x^2/2x^2$

$\Rightarrow 1$

---

61. **Answer: c**

Explanation:

This problem asks us to identify which number among the given options is potentially divisible by the value of the expression $5x - 3y + z$, given specific ratios between the positive integers x, y, and z.

Combining Ratios for x, y, and z

We are given the ratios:

- $x : y = 1 : 2$
- $y : z = 3 : 5$

To find a common ratio $x : y : z$, we need the 'y' term to be the same in both ratios. We can achieve this by finding the least common multiple (LCM) of the 'y' values (2 and 3), which is 6.

Multiply the first ratio by 3:

$x : y = (1 \times 3) : (2 \times 3) = 3 : 6$

Multiply the second ratio by 2:

$y : z = (3 \times 2) : (5 \times 2) = 6 : 10$

Now, we can combine these into a single ratio:

$x : y : z = 3 : 6 : 10$

Since x, y, and z are positive integers, we can represent them using a common multiplier, k, where k is a positive integer.

Let $x = 3k$, $y = 6k$, and $z = 10k$.

Evaluating the Expression 5x – 3y + z

Now, let's substitute these values into the expression $5x - 3y + z$:

$5x - 3y + z = 5(3k) - 3(6k) + (10k)$

Calculate the terms:

$= 15k - 18k + 10k$

Combine the terms:

$= (15 - 18 + 10)k$

$= (-3 + 10)k$

$= 7k$

So, the value of the expression $5x - 3y + z$ is $7k$, where k is any positive integer.

Determining Divisibility

The question asks which of the given options is possibly divisible by the value of the expression, which we found to be $7k$.

This means the option must be a multiple of $7k$ for some positive integer k. Therefore, the option must be divisible by 7.

Let's check the divisibility of each option by 7:

- **Option 1: 180**
  $180 \div 7$ is not an integer ($180 = 7 \times 25 + 5$).
- **Option 2: 190**
  $190 \div 7$ is not an integer ($190 = 7 \times 27 + 1$).
- **Option 3: 196**
  $196 \div 7 = 28$. This is an integer.
- **Option 4: 200**
  $200 \div 7$ is not an integer ($200 = 7 \times 28 + 4$).

Only 196 is divisible by 7. If we choose $k = 28$, then the value of the expression $7k$ is $7 \times 28 = 196$. In this case, 196 is divisible by 196 (the value of the expression).

Therefore, 196 is the number that is possibly divisible by the value of $5x - 3y + z$.

Final Answer Summary

The combined ratio is $x : y : z = 3 : 6 : 10$.

The expression $5x - 3y + z$ simplifies to $7k$.

We need an option divisible by $7k$, meaning the option must be a multiple of 7.

Checking the options, only 196 is divisible by 7.

62. **Answer: c**

Explanation:

Finding the Other Factors of the Polynomial $x^3 + 4x^2 - 3x - 18$

Understanding the Factor Theorem

The Factor Theorem is a fundamental concept in algebra that helps us determine if a binomial $(x - a)$ is a factor of a polynomial $P(x)$. The theorem states that $(x - a)$ is a factor of $P(x)$ if and only if $P(a) = 0$. In simpler terms, if substituting the value 'a' (from the factor $(x - a)$) into the polynomial results in zero, then $(x - a)$ divides the polynomial evenly.

Verifying the Given Factor $(x - 2)$

We are given the polynomial $P(x) = x^3 + 4x^2 - 3x - 18$. We are also told that $(x - 2)$ is a factor. Let's verify this using the Factor Theorem. For the factor $(x - 2)$, the value of a is 2. We need to evaluate $P(2)$:

$$P(2) = (2)^3 + 4(2)^2 - 3(2) - 18$$

$$P(2) = 8 + 4(4) - 6 - 18$$

$$P(2) = 8 + 16 - 6 - 18$$

$$P(2) = 24 - 24$$

$$P(2) = 0$$

Since $P(2) = 0$, the Factor Theorem confirms that $(x - 2)$ is indeed a factor of the polynomial $x^3 + 4x^2 - 3x - 18$.

Dividing the Polynomial to Find Other Factors

Now that we've confirmed $(x-2)$ is a factor, we can find the other factors by dividing the polynomial $P(x)$ by $(x-2)$. We can use polynomial long division or synthetic division. Synthetic division is often quicker.

For synthetic division, we use the root of the factor $(x-2)$, which is 2. The coefficients of the polynomial $x^3+4x^2-3x-18$ are $1, 4, -3, -18$.

Synthetic Division Steps:				
2 |	1	4	-3	-18
		2	12	18

	1	6	9	0

The result of the division gives us the coefficients of the quotient. The last number (0) is the remainder, confirming that $(x-2)$ is a factor. The quotient is a quadratic polynomial represented by the coefficients $1, 6, 9$.

The quotient is x^2+6x+9.

Factoring the Quadratic Expression x^2+6x+9

The remaining factor is the quadratic expression x^2+6x+9. We need to factor this quadratic. We look for two numbers that multiply to give the constant term (9) and add up to give the coefficient of the middle term (6).

The numbers 3 and 3 satisfy these conditions:

- $3 \times 3 = 9$
- $3+3=6$

Therefore, we can factor the quadratic expression as follows:

$$x^2+6x+9=(x+3)(x+3)$$

This is a perfect square trinomial, which can also be written as $(x+3)^2$.

Identifying the Other Factors

We have factored the original polynomial $x^3+4x^2-3x-18$ completely. The factors are $(x-2)$, $(x+3)$, and $(x+3)$.

The question asks for the *other factors* besides the given factor $(x-2)$.

The other factors are $(x+3)$ and $(x+3)$.

This matches the option listing $(x+3, x+3)$.

---

63. Answer: c

Explanation:

Understanding the Quadratic Equations and Roots

The problem involves two quadratic equations. We are given the roots of the first equation, $x^2+px+q=0$, as 1 and 2. We need to find the roots of the second equation, $qx^2-px+1=0$, using the information from the first equation.

Deriving Coefficients from the First Equation's Roots

Let the first equation be $x^2+px+q=0$. The roots are given as $\alpha=1$ and $\beta=2$. We can use Vieta's formulas, which relate the roots of a polynomial to its coefficients.

- **Sum of the roots:** $\alpha+\beta=-\frac{\text{coefficient of } x}{\text{coefficient of } x^2}$ In this case, $\alpha+\beta=-\frac{p}{1}=-p$. Substituting the given roots: $1+2=3$. Therefore, $-p=3$, which implies $p=-3$.
- **Product of the roots:** $\alpha\beta=\frac{\text{constant term}}{\text{coefficient of } x^2}$ In this case, $\alpha\beta=\frac{q}{1}=q$. Substituting the given roots: $1\times 2=2$. Therefore, $q=2$.

So, we have found the values of the coefficients: $p=-3$ and $q=2$. These values are derived directly from the **roots of the first equation**.

Formulating the Second Quadratic Equation

The second equation is given as $qx^2 - px + 1 = 0$. Now, we substitute the values we found for p and q into this equation.

Substituting $q = 2$ and $p = -3$: $2x^2 - (-3)x + 1 = 0$

Simplifying the equation gives: $2x^2 + 3x + 1 = 0$

This is the specific quadratic equation whose roots we need to find.

Finding the Roots of the Second Equation

We need to solve the quadratic equation $2x^2 + 3x + 1 = 0$. We can do this by factoring or using the quadratic formula.

Method 1: Factoring

We look for two numbers that multiply to $(2 \times 1) = 2$ and add up to the middle coefficient, 3. The numbers are 1 and 2. Rewrite the middle term $(3x)$ using these numbers:

$2x^2 + 2x + x + 1 = 0$

Factor by grouping:

$2x(x + 1) + 1(x + 1) = 0$

Factor out the common term $(x + 1)$: $(2x + 1)(x + 1) = 0$

Set each factor equal to zero to find the roots:

- $2x + 1 = 0 \implies 2x = -1 \implies x = -\frac{1}{2}$
- $x + 1 = 0 \implies x = -1$

The roots of the second equation are $-\frac{1}{2}$ and -1.

Method 2: Quadratic Formula

The quadratic formula for an equation $ax^2 + bx + c = 0$ is $x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$. For our equation $2x^2 + 3x + 1 = 0$, we have $a = 2$, $b = 3$, and $c = 1$. Substitute these values into the formula:

$x = \frac{-3 \pm \sqrt{3^2-4(2)(1)}}{2(2)}$ $x = \frac{-3 \pm \sqrt{9-8}}{4}$ $x = \frac{-3 \pm \sqrt{1}}{4}$ $x = \frac{-3 \pm 1}{4}$

This gives two possible values for x:

- $x_1 = \frac{-3+1}{4} = \frac{-2}{4} = -\frac{1}{2}$
- $x_2 = \frac{-3-1}{4} = \frac{-4}{4} = -1$

Again, the roots are found to be $-\frac{1}{2}$ and -1.

Conclusion

Based on the calculations derived from the relationship between the coefficients and roots of the first equation, the roots of the second equation $qx^2 - px + 1 = 0$ are $-\frac{1}{2}$ and -1. This corresponds to option 3.

---

64. **Answer: b**

Explanation:

Understanding the Communication Process Components

The **communication process** refers to the sequence of steps involved when information is exchanged between individuals or entities. Standard models often include elements like the sender, receiver, message, channel, encoding, decoding, feedback, and noise. Let's analyze the given options to see which one doesn't fit into this framework.

Analyzing the Role of Each Option

- **Medium**: This is the channel or pathway through which a message travels from the sender to the receiver. Examples include face-to-face conversation, phone calls, emails, or letters. The **Medium** is a crucial component, facilitating the actual exchange.
- **Transmission**: This term relates to the act of sending or conveying the message through the chosen channel. **Transmission** is the core action in moving the message, making it an essential part of the process.
- **Information**: This is the content of the message being communicated – the ideas, facts, or data. **Information** is what is being shared and is fundamental to communication.
- **Life values and vision**: These are personal beliefs, principles, guiding ideals, and future aspirations. While a person's **life values and vision** significantly influence *what* they communicate and *how* they communicate it, they are not considered a direct, structural component of the communication process itself. They are internal factors that shape the communication act rather than a step within the process flow.

Identifying What's Not Part of the Communication Process

Comparing the options with the standard components of the communication process:

- The **Medium** is the channel.
- **Transmission** is the act of sending the message.
- **Information** is the message content.
- **Life values and vision** represent personal beliefs and goals that influence communication but are not a procedural step or element within the process itself.

Therefore, **Life values and vision** is the correct answer as it is not considered a direct component of the mechanics of the communication process.

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65. Answer: a

Explanation:

Making appropriate decisions for **socially disadvantaged persons** requires specific personal characteristics that foster understanding and fairness. This section explores the key traits involved in such decision-making processes.

Why Empathy is Crucial for Decisions Regarding Socially Disadvantaged Persons

Empathy is the ability to understand and share the feelings of another person. When making decisions for **socially disadvantaged persons**, empathy is the most important characteristic.

- **Understanding Perspectives:** Empathy allows decision-makers to step into the shoes of those who are disadvantaged, helping them grasp the unique challenges, obstacles, and emotional states these individuals might experience.
- **Needs Assessment:** By understanding their feelings and circumstances, one can better identify the actual needs of socially disadvantaged groups, leading to more effective and relevant support or policy decisions.
- **Fairness and Sensitivity:** Empathetic decisions are more likely to be fair, respectful, and sensitive to the dignity and rights of the individuals involved, avoiding unintentional harm or reinforcement of existing inequalities.
- **Building Trust:** Demonstrating empathy can help build trust between the decision-maker and the disadvantaged individuals or communities, fostering cooperation and better outcomes.

Evaluating Other Characteristics in Decision-Making

While other traits might seem relevant, they are less critical or potentially detrimental compared to empathy:

- **Extroversion:** Being outgoing or sociable (extroversion) is not directly linked to understanding the specific needs or feelings of disadvantaged groups. While communication skills are helpful, extroversion itself doesn't guarantee sensitive decision-making.

- **Emotional Instability:** This refers to unpredictable mood swings or emotional responses. Such instability can hinder clear, consistent, and fair decision-making, making it unsuitable for addressing the needs of vulnerable populations. Decisions require stability and thoughtful consideration, not emotional volatility.
- **Authoritarianism:** This characteristic involves a belief in strict obedience to authority and a tendency to impose one's own views. Authoritarian approaches often disregard the perspectives and autonomy of others, which is counterproductive when aiming to support socially disadvantaged persons. It can lead to decisions that are controlling rather than empowering.

Conclusion on Essential Characteristics

In summary, when tasked with making decisions that affect **socially disadvantaged persons**, cultivating **empathy** is paramount. It provides the foundational understanding necessary to act appropriately, fairly, and effectively, ensuring that decisions genuinely address the needs and circumstances of those individuals.

---

66. **Answer: c**

Explanation:

The correct answer is **It facilitates effective decision-making.**

⭐ **Key Points**

- **Superior-Subordinate Communication**
  - The success of any organization depends upon its **relations** with its employees.
  - The communication between the **superiors and subordinates** helps in achieving personal and organizational goals.
  - It builds **trust, support, and cooperation.**
  - It results in **effective decision-making.**
  - This interaction can take place both **downward and upward.**
- **Benefits**

- It will improve the performance of employees.
- It will ensure a sense of motivation.
- The subordinates will feel more satisfied with their jobs.
- It helps in developing plans, sharing ideas, suggestions, and complaints.
- The superiors can make healthy decisions by taking suggestions from their subordinates.
- It will help in implementing decisions on time.
- It will increase the level of trust between the superior and subordinates.

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67. **Answer: b**

Explanation:

Group Thinking: Understanding Irrational Decisions in High Conformity Groups

The scenario described, where **irrational decisions** are made within a **high conformity group**, points towards a specific social psychological phenomenon. Let's explore the concepts involved.

Defining Group Thinking

Group thinking, often referred to as Groupthink, is a term coined by psychologist Irving Janis. It describes a situation where the drive for consensus and harmony within a group leads to an irrational or dysfunctional decision-making process. Key characteristics include:

- An overwhelming desire by group members to agree with each other.
- Suppression of dissenting opinions or individual viewpoints that deviate from the perceived group consensus.
- A sense of "us versus them," where the group views outsiders or opposing views negatively.
- Belief in the inherent morality and correctness of the group's stance.
- Pressure on members who express doubts or disagreements (sometimes called "mindguards").
- An illusion of unanimity, where silence is often interpreted as agreement.

In a **high conformity group**, these tendencies are amplified. Members prioritize fitting in and maintaining group cohesion over critical evaluation, leading to the adoption of flawed reasoning and ultimately, **irrational decisions**.

Analyzing Other Options

Let's look at why the other options are not the best fit:

- **Creativity**: Creativity is typically associated with divergent thinking, innovation, and the generation of novel ideas. It often thrives on diverse perspectives and constructive disagreement, which are suppressed in a group thinking scenario.
- **Informality**: While groups can be informal, the level of formality doesn't directly cause irrational decisions. The crucial element is the pressure towards conformity and the suppression of dissent, regardless of the group's structural formality.
- **Psychological vigilance**: This term generally refers to a state of heightened awareness or alertness, often in response to potential threats or stressors. It is not a standard term describing the specific group dynamics that lead to poor decisions due to conformity pressure. In fact, group thinking involves a *lack* of critical vigilance regarding the group's decisions.

Conclusion

Given the emphasis on **irrational decisions** resulting from the pressure to conform within a group, **group thinking** accurately describes this situation. It highlights how

the desire for consensus can override rational judgment and critical analysis in a **high conformity group**.

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68. **Answer: c**

Explanation:

Understanding Productive Decision Making Styles

Making decisions is a fundamental part of life, and the way we approach this process can significantly impact our effectiveness and relationships. Different decision-making styles exist, each with unique characteristics. Understanding these styles helps us identify the most productive approach.

Exploring Different Decision Making Styles

Let's examine the common decision-making styles mentioned in the options:

- **Passive Style:** Individuals using a passive style often avoid making decisions. They might wait for others to decide for them or go along with the majority to avoid conflict. This can lead to unmet needs and frustration, as their own preferences and rights are often overlooked. They tend to let situations happen without taking responsibility.
- **Aggressive Style:** This style involves dominating others and pursuing one's own goals at the expense of others' rights or feelings. Aggressive decision-makers might be forceful, intimidating, and dismissive of other viewpoints. While they might get their way in the short term, this style often damages relationships and can lead to resentment.
- **Assertive Style:** The assertive style is characterized by clear, direct, and honest communication while respecting oneself and others. Assertive individuals express their needs, opinions, and feelings confidently, without infringing on the rights of others. They aim for fair solutions and are willing to listen to different perspectives. This style balances self-interest with consideration for others.
- **Passive-aggressive Style:** This style involves expressing negative feelings or dissatisfaction indirectly rather than openly. People using this approach might

appear cooperative on the surface but resist change or fulfill requests in subtle, obstructionist ways. They might procrastinate, give the silent treatment, or use sarcasm. This style creates confusion and undermines trust.

Identifying the Most Productive Decision Making Style

When considering which decision-making style is the most **productive**, the **Assertive** style stands out. Here's why:

- **Effective Communication:** Assertiveness promotes clear and open communication, ensuring everyone understands the situation and the decisions being made.
- **Mutual Respect:** It fosters a climate of respect, where individual rights and opinions are valued, leading to better collaboration.
- **Problem Solving:** Assertive individuals are more likely to address issues directly and constructively, seeking win-win solutions that benefit everyone involved.
- **Reduced Conflict:** While assertiveness involves expressing oneself, it does so respectfully, which often prevents the escalation of conflict compared to aggressive or passive-aggressive approaches.
- **Confidence and Self-Esteem:** Making decisions assertively boosts self-confidence and reinforces a positive self-image, contributing to overall well-being.

In contrast, passive styles lead to overlooked needs, aggressive styles damage relationships, and passive-aggressive styles create mistrust and inefficiency. Therefore, the **Assertive** style is considered the most effective and **productive** for achieving positive outcomes in both personal and professional contexts.

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69. **Answer: c**

Explanation:

Calculating the Marked Price of a Watch

This problem involves understanding the relationship between marked price, discount, selling price, and profit. We are given that a shopkeeper offers a discount on a watch. When the discount percentage changes, the profit changes accordingly. We need to find the original marked price of the watch.

Understanding Discounts and Profit

- **Marked Price (MP):** The price tag on the item.
- **Discount:** A reduction offered on the Marked Price.
- **Selling Price (SP):** The price at which the item is sold after the discount. Calculated as $SP = MP - \text{Discount Amount}$.
- **Cost Price (CP):** The price at which the shopkeeper bought the item.
- **Profit:** The difference between the Selling Price and the Cost Price. Calculated as $Profit = SP - CP$.

Analyzing the Problem Statement

Let the Marked Price (MP) of the watch be 'MP'.

Scenario 1: 5% Discount

- Discount Amount = 5% of $MP = 0.05 \times MP$
- Selling Price (SP1) = $MP - 0.05 \times MP = 0.95 \times MP$
- Profit (P1) = $SP1 - CP = (0.95 \times MP) - CP$

Scenario 2: 10% Discount

- Discount Amount = 10% of $MP = 0.10 \times MP$
- Selling Price (SP2) = $MP - 0.10 \times MP = 0.90 \times MP$
- Profit (P2) = $SP2 - CP = (0.90 \times MP) - CP$

We are told that if the discount is 10% (Scenario 2), the profit is Rs. 25 less than when the discount is 5% (Scenario 1). This means:

Profit (P1) - Profit (P2) = Rs. 25

Step-by-Step Calculation

1. **Set up the equation using profits:**

$$P1 - P2 = 25$$

$$[(0.95 \times MP) - CP] - [(0.90 \times MP) - CP] = 25$$

2. **Simplify the equation:** Notice that the Cost Price (CP) cancels out.

$$0.95 \times MP - CP - 0.90 \times MP + CP = 25$$

$$(0.95 \times MP) - (0.90 \times MP) = 25$$

3. **Combine terms involving MP:**

$$(0.95 - 0.90) \times MP = 25$$

$$0.05 \times MP = 25$$

4. **Solve for the Marked Price (MP):** The difference in discount is $10\% - 5\% = 5\%$. This 5% difference in discount directly corresponds to the Rs. 25 difference in profit. So, 5% of the Marked Price is Rs. 25.

$$MP = \frac{25}{0.05}$$

To calculate this, we can write 0.05 as $\frac{5}{100}$:

$$MP = \frac{25}{5/100}$$

$$MP = 25 \times \frac{100}{5}$$

$$MP = 25 \times 20$$

$$MP = 500$$

Conclusion

The Marked Price of the watch is Rs. 500.

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70. Answer: b

Explanation:

Exam Marks Calculation: Finding Maximum Marks

This problem involves understanding percentages and how they relate to marks obtained in an examination. We need to determine the maximum possible marks for the exam based on the information provided about a student's performance and the passing criteria.

Determining the Passing Marks

First, let's figure out the actual number of marks required to pass the exam. We are given that the student scored 50 marks and failed by 4 marks. This means the student was just 4 marks short of the passing threshold.

- Student's Score = 50 marks
- Failing Margin = 4 marks

Therefore, the minimum marks needed to pass the exam can be calculated as:

$$\text{Passing Marks} = \text{Student's Score} + \text{Failing Margin}$$

$$\text{Passing Marks} = 50 + 4 = 54$$

So, a student needs 54 marks to pass this examination.

Relating Passing Marks to Percentage

The problem states that a student must secure 45% of the marks to pass. We've just calculated that the passing marks are 54.

This means that 54 marks represent 45% of the total maximum marks available in the examination.

Let M represent the maximum marks for the examination.

We can set up the equation:

$$45\% \text{ of } M = 54$$

Calculating the Total Maximum Marks

Now, we need to solve for M. We can rewrite the percentage as a fraction:

$\frac{45}{100} \times M = 54$

To find the maximum marks M, we can rearrange the equation:

$M = \frac{54 \times 100}{45}$

Let's simplify this calculation:

- Divide both 54 and 45 by their greatest common divisor, which is 9: $54 \div 9 = 6$ and $45 \div 9 = 5$.
- The equation becomes: $M = \frac{6 \times 100}{5}$
- Now, divide 100 by 5: $100 \div 5 = 20$.
- The equation simplifies to: $M = 6 \times 20$
- $M = 120$

Therefore, the maximum marks for the examination is 120.

Summary of Steps:

1. Calculate Passing Marks: Add the student's score to the failing margin ($50 + 4 = 54$ marks).
2. Set up the Percentage Equation: Recognize that the passing marks (54) are equal to the passing percentage (45%) of the maximum marks (M). ($\frac{45}{100} \times M = 54$).
3. Solve for Maximum Marks: Rearrange and solve the equation ($M = \frac{54 \times 100}{45} = 120$).

The maximum marks for the exam is 120.

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71. Answer: d

Explanation:

Calculating Time for Combined Workforce

This problem involves determining the time required for a mixed group of workers (women and children) to complete a specific task, given the time it takes for separate groups. We need to calculate the combined work rate.

Understanding Work Rates

The fundamental concept here is 'work rate'. Work rate is the amount of work a person or group can do in one unit of time (in this case, one day). We can express the total work as 1 unit. The relationship is:

Work Rate = $\frac{\text{Total Work}}{\text{Time Taken}}$

Alternatively, Time Taken = $\frac{\text{Total Work}}{\text{Work Rate}}$

Calculating Individual Work Rates

First, let's find out how much work one woman and one child can do in a single day.

- **Women's Work Rate:**
  - We are given that 10 women can complete the entire work in 7 days.
  - This means, in 1 day, 10 women complete $\frac{1}{7}$ of the total work.
  - Therefore, the work done by 1 woman in 1 day is:

$$\text{Rate}_{1 \text{ woman}} = \frac{1/7}{10} = \frac{1}{7 \times 10} = \frac{1}{70}$$

    So, one woman completes $\frac{1}{70}$ of the work each day.
- **Children's Work Rate:**
  - We are given that 10 children can complete the same work in 14 days.
  - In 1 day, 10 children complete $\frac{1}{14}$ of the total work.
  - Therefore, the work done by 1 child in 1 day is:

$$\text{Rate}_{1 \text{ child}} = \frac{1/14}{10} = \frac{1}{14 \times 10} = \frac{1}{140}$$

    So, one child completes $\frac{1}{140}$ of the work each day.

Calculating the Combined Work Rate for 5 Women and 10 Children

Now, we need to find the total work done by 5 women and 10 children working together in one day.

- Work done by 5 women in 1 day = $5 \times \text{Rate}_{1 \text{ woman}} = 5 \times \frac{1}{70} = \frac{5}{70} = \frac{1}{14}$.
- Work done by 10 children in 1 day = $10 \times \text{Rate}_{1 \text{ child}} = 10 \times \frac{1}{140} = \frac{10}{140} = \frac{1}{14}$.
- The combined work rate per day for 5 women and 10 children is the sum of their individual daily work rates:

$$\text{Combined Rate} = (\text{Work by 5 women in 1 day}) + (\text{Work by 10 children in 1 day})$$

$$\text{Combined Rate} = \frac{1}{14} + \frac{1}{14}$$

$$\text{Combined Rate} = \frac{1+1}{14} = \frac{2}{14} = \frac{1}{7}$$

So, together, 5 women and 10 children complete $\frac{1}{7}$ of the work each day.

Determining the Total Time Taken

To find the total number of days required to complete the work, we use the relationship:

Time Taken = $\frac{\text{Total Work}}{\text{Combined Work Rate}}$

Since the total work is 1 unit and the combined rate is $\frac{1}{7}$ of the work per day:

$$\text{Time Taken} = \frac{1}{1/7}$$

$$\text{Time Taken} = 7 \text{ days}$$

Therefore, 5 women and 10 children will take 7 days to complete the work.

---

72. Answer: a

Explanation:

Calculating the Family's Average Age Now

This question asks us to find the current average age of a family, which includes a husband, wife, and their child. We are given information about their average age at the time of marriage and the time elapsed since then, as well as the child's age. This involves understanding how averages change over time.

Calculating the Sum of Ages at Marriage

We are told that the average age of the husband and his wife at the time of their marriage was 23 years. Since there are two people (husband and wife), we can calculate the sum of their ages at that time.

Using the formula for average:

$$\text{Average Age} = \frac{\text{Sum of Ages}}{\text{Number of People}}$$

Rearranging the formula to find the sum of ages:

$$\text{Sum of Ages} = \text{Average Age} \times \text{Number of People}$$

So, the sum of the husband's and wife's ages at marriage was:

$$\text{Sum of Ages at Marriage} = 23 \text{ years} \times 2 = 46 \text{ years}$$

Determining Current Ages

The problem states that 5 years have passed since their marriage. During these 5 years, both the husband and wife have aged by 5 years each.

The total increase in their combined age over the 5 years is:

$$\text{Increase in Age} = 5 \text{ years/person} \times 2 \text{ people} = 10 \text{ years}$$

Therefore, the sum of their current ages is:

$$\text{Sum of Current Ages (Husband + Wife)} = (\text{Sum of Ages at Marriage}) + (\text{Increase in Age})$$

$$\text{Sum of Current Ages (Husband + Wife)} = 46 \text{ years} + 10 \text{ years} = 56 \text{ years}$$

Finding the Family's Total Current Age

The family now consists of the husband, the wife, and their child, who is 1 year old.

The total number of family members is now 3.

The child's current age is 1 year.

To find the total current age of the family, we add the child's age to the sum of the parents' current ages:

$$\text{Total Family Age Now} = (\text{Sum of Current Ages (Husband + Wife)}) + (\text{Child's Current Age})$$

$$\text{Total Family Age Now} = 56 \text{ years} + 1 \text{ year} = 57 \text{ years}$$

Calculating the Family's Average Age Now

Now we need to find the average age of the family now. We have the total current age of the family and the number of family members.

$$\text{Average Family Age Now} = \frac{\text{Total Family Age Now}}{\text{Number of Family Members}}$$

$$\text{Average Family Age Now} = \frac{57 \text{ years}}{3 \text{ people}}$$

$$\text{Average Family Age Now} = 19 \text{ years}$$

The average age of the family now is **19 years**.

---

73. Answer: b

Explanation:

Understanding the Logical Fallacy in Premchand's Novels Argument

The question presents a specific argument regarding the novels written by Premchand. Let's break down the argument:

- **Premise:** Every individual novel by Premchand can be read within a single day.
- **Conclusion:** Therefore, all novels by Premchand (collectively) can be read within a single day.

The task is to identify the logical fallacy present in this reasoning. The argument moves from a characteristic of individual items (each novel) to a characteristic of the entire collection of items (all novels).

Identifying the Fallacy of Composition

The reasoning error demonstrated here is the **fallacy of composition**. This fallacy occurs when one incorrectly assumes that a characteristic true for individual parts of a whole must also be true for the whole entity itself.

In simpler terms, it's like saying:

- Component A has property X.
- Component B has property X.
- Therefore, the collection {A, B} must have property X.

This is logically flawed because the properties of individual components do not necessarily transfer to the group as a whole.

Applying Composition Fallacy to Premchand's Novels

Let's apply this to the specific argument about Premchand's novels:

- **The Parts:** Each individual novel written by Premchand.
- **Property of the Parts:** Each novel is readable within a day (presumably due to its length or complexity).
- **The Whole:** The entire collection of Premchand's novels.
- **The Flawed Conclusion:** The entire collection can be read within a day.

The error is assuming that because each book is short, the entire set of books is also short or can be completed in the same short time. Reading one novel in a day is different from reading potentially dozens or hundreds of novels in just one day.

Analyzing Other Fallacy Options

Let's consider why the other options are not the correct fit:

- **Fallacy of Division:** This fallacy is the inverse of the composition fallacy. It involves wrongly assuming that what is true of the whole must also be true for each of its parts. For example, "This team is successful, so every player on the team must be successful." This doesn't apply here.
- **Petitio Principii (Begging the Question):** This fallacy occurs when an argument's premises implicitly or explicitly assume the truth of the conclusion, rather than providing evidence for it. The argument presented doesn't assume its conclusion; it makes a faulty inference from a premise about parts to a conclusion about the whole.
- **None of the above:** Since the fallacy of composition accurately describes the error in the argument, this option is incorrect.

Conclusion

The argument that because each novel by Premchand can be read in a day, all of them together can be read in a day, commits the **fallacy of composition**. It incorrectly transfers a property of the individual novels to the entire collection of novels.

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74. **Answer: d**

Explanation:

Evaluating Assertion and Reason on Education and Success

This question asks us to evaluate an Assertion (A) and a Reason (R) related to the role of education in achieving success. We need to determine if each statement is true or false and if the Reason correctly explains the Assertion.

Analysis of Assertion (A): Education is must for success

- The assertion states that education is a mandatory requirement ("must") for success.
- Success can be defined in many ways, and while education often plays a significant role, it's not universally a prerequisite.
- Many individuals have achieved considerable success through talent, practical experience, hard work, or entrepreneurship without extensive formal education.
- Therefore, the absolute claim that education is a "must" can be considered debatable or potentially false, as success can be achieved through various paths.

Analysis of Reason (R): Education is key to success

- The reason suggests that education is the primary or essential means ("key") to achieving success.
- Similar to the assertion, this statement implies that education is the principal factor unlocking success.
- While education undoubtedly opens doors, provides skills, and enhances opportunities, it's not the sole determinant of success. Other factors like perseverance, networking, adaptability, and opportunity are also critical.
- Calling it "the key" might oversimplify the complex nature of success and ignore other vital contributing elements.
- Thus, this statement can also be considered potentially false due to its limiting and absolute nature.

Determining the Relationship and Correct Option

- Given that both the assertion ("must") and the reason ("key") use strong, absolute terms, they can be reasonably argued as false statements. Success is multifaceted, and education's role, while important, isn't always the sole or mandatory factor.
- If both statements (A) and (R) are considered false, the correct option would be the one that reflects this.
- Option 4 states: "Both (A) and (R) are false". This aligns with the analysis that the absolute claims made in both the assertion and the reason are not

universally true.

Conclusion on Education's Necessity for Success

In conclusion, while education is highly valuable and often facilitates success, labelling it as an absolute "must" or "the key" overlooks the diverse pathways and factors contributing to achieving success in various aspects of life.

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75. **Answer: a**

Explanation:

Understanding 'Iron is a cheap metal' Definition Type

This question asks us to identify the type of definition represented by the statement: 'Iron is a cheap metal'. We need to analyze how this description relates to the different categories of definitions provided in the options.

Analyzing the Statement 'Iron is a cheap metal'

The statement describes **iron** by attributing the characteristic of being **cheap**. In logic and semantics, definitions aim to clarify the meaning or essence of a term. Let's examine the statement against the given options to see which classification fits best.

Detailed Analysis of Definition Types

We will look at each option to determine why the statement 'Iron is a cheap metal' fits a particular category:

- **Accidental Definition:** This type of definition describes properties that a subject possesses but are not part of its essential nature. These characteristics might be circumstantial, variable, or incidental. For example, defining 'a student' as 'someone who often stays late in the library' describes an incidental behaviour, not the essence of being a student.

In the statement 'Iron is a cheap metal', the property 'cheap' refers to its cost. The cost of metals like iron can vary significantly depending on market fluctuations, availability, and comparison with other metals. Therefore, 'cheapness' is not a fundamental, unchanging characteristic inherent to iron itself (like its atomic structure or chemical symbol 'Fe'). It's a property that might be true under certain circumstances or in specific contexts, making it an **accidental** or non-essential attribute.

- **Figurative Definition:** This involves using non-literal language, such as metaphors or similes, to define something. For instance, calling someone 'a rock' suggests stability, using a figurative comparison. The statement 'Iron is a cheap metal' uses literal language to describe the price or perceived value of iron; it does not employ figurative speech.
- **Synonymous Definition:** This definition explains a term by providing another word with the same or a very similar meaning (a synonym). An example would be 'A bicycle is a bike'. The statement does not offer a synonym for iron.
- **Too Narrow Definition:** This occurs when a definition excessively limits the scope of a term, excluding valid examples. For example, defining 'vehicle' as 'a car with four wheels' is too narrow because it excludes trucks, motorcycles, etc. The statement 'Iron is a cheap metal' doesn't narrow down the category of iron; instead, it assigns a potentially variable characteristic to it. It might be an oversimplification or even factually inaccurate in some contexts, but it doesn't fit the logical definition of being 'too narrow'.

Conclusion on Definition Classification

The statement 'Iron is a cheap metal' assigns a characteristic (cheapness) that is not intrinsic to the essential nature of iron. Since the cost is often variable and dependent on external factors, it represents a property that iron happens to possess circumstantially. Therefore, this statement is best classified as an **Accidental definition**.

---

76. **Answer: b**

Explanation:

Understanding Physical Division: The Case of a Chair

This question explores different ways objects or concepts can be classified or broken down. We are given the specific example of dividing a **chair** into its distinct parts: the **leg**, the **back**, and the **seat**. We need to determine which type of division this represents.

Defining the Types of Division

Let's look at the characteristics of each type of division mentioned in the options:

- **Logical Division:** This involves breaking down a concept or category into smaller, logically distinct sub-categories based on reasoning or definition. For example, dividing 'vehicles' into 'cars', 'trucks', and 'motorcycles' based on their function and design.
- **Physical Division:** This refers to the separation or classification of a tangible, physical object into its constituent physical parts. These parts are usually integral components that make up the whole object.
- **Cross Division:** This occurs when a subject is divided according to several independent criteria simultaneously, often resulting in overlapping categories or a confusing classification. It's generally considered a logical fallacy. For instance, dividing students based on both 'grade level' and 'favorite color' might lead to cross-divisional issues if not handled carefully.
- **Metaphysical Division:** This is a division based on abstract philosophical principles, concerning the fundamental nature or essence of a thing, rather than its physical or logical attributes.

Analyzing the Chair Example

The question specifically mentions the division of a **chair** into its **leg**, **back**, and **seat**.

- A chair is a concrete, tangible, **physical** object.
- The **leg**, **back**, and **seat** are the actual, structural, **physical** components that make up the chair.

- The division is based on identifying these distinct physical parts of the object.

Why 'Physical Division' is Correct

Based on the definitions, the act of separating or classifying a **chair** into its physical parts like the **leg**, **back**, and **seat** directly aligns with the concept of **Physical division**. The division deals with the tangible structure of the object.

- It is not a **Logical division** because we are not breaking down an abstract concept but a physical item into its physical components.
- It is not a **Cross division** as we are not using multiple, potentially overlapping criteria; we are simply identifying the inherent physical parts.
- It is not a **Metaphysical division** because the focus is on the actual, observable parts of the chair, not on its abstract essence or philosophical nature.

Therefore, the division of a chair into its leg, back, and seat is a clear instance of **Physical division**.

---

77. **Answer: b**

Explanation:

Determining $x^2 + y^2$ from $x^2 - y^2 = 13$

We are given the equation $x^2 - y^2 = 13$, where x and y are specified as **positive integers**. Our goal is to find the value of $x^2 + y^2$ using this information.

Applying the Difference of Squares Formula

The expression $x^2 - y^2$ is a classic difference of squares. It can be factored algebraically as:

$$x^2 - y^2 = (x - y)(x + y)$$

Substituting the given value, we get:

$$(x-y)(x+y)=13$$

Finding Factors of 13

Since x and y are **positive integers**, it follows that:

- $x+y$ must be a positive integer (sum of two positive integers).
- $x-y$ must be an integer.
- Because $(x-y)(x+y)=13$, which is positive, and we know $x+y$ is positive, $x-y$ must also be positive.
- Furthermore, since y is a positive integer ($y \geq 1$), $x+y$ must be greater than $x-y$.

The number 13 is a prime number. Its only positive integer factors are 1 and 13.

Given the condition $x+y > x-y$, we can set up the following system of equations:

1. $x+y=13$
2. $x-y=1$

Solving for x and y

We can solve this system of linear equations to find the values of x and y.

Step 1: Add the two equations together.

$$(x+y)+(x-y)=13+1$$

$$2x=14$$

$$x=\frac{14}{2}$$

$$x=7$$

Step 2: Substitute the value of x back into one of the equations (e.g., the first one).

$$7+y=13$$

$$y=13-7$$

$$y = 6$$

We have found $x = 7$ and $y = 6$. These values are indeed **positive integers**, and they satisfy the original equation $7^2 - 6^2 = 49 - 36 = 13$.

Calculating $x^2 + y^2$

Now we need to calculate the value of $x^2 + y^2$ using the values $x = 7$ and $y = 6$.

$$x^2 + y^2 = 7^2 + 6^2$$

$$x^2 + y^2 = 49 + 36$$

$$x^2 + y^2 = 85$$

Final Answer

The calculation shows that the value of $x^2 + y^2$ is 85.

---

78. **Answer: b**

Explanation:

Understanding Rhombus Diagonal Properties

A rhombus is a special type of quadrilateral where all four sides are equal in length. A key property of a rhombus is that its diagonals bisect each other at right angles (90 degrees). This means the point where the diagonals intersect divides each diagonal into two equal halves, and the angle formed at the intersection is a perfect square corner.

When the diagonals of a rhombus are drawn, they divide the rhombus into four identical right-angled triangles. The legs of each right-angled triangle are the half-lengths of the diagonals, and the hypotenuse of the triangle is the side of the rhombus.

Calculating the Rhombus Side Length

We are given the lengths of the two diagonals of the rhombus:

- Diagonal 1 (d_1) = 24 cm
- Diagonal 2 (d_2) = 32 cm

First, let's find the lengths of the segments formed when the diagonals bisect each other:

- Half of Diagonal 1 = $\frac{d_1}{2} = \frac{24\text{ cm}}{2} = 12\text{ cm}$
- Half of Diagonal 2 = $\frac{d_2}{2} = \frac{32\text{ cm}}{2} = 16\text{ cm}$

Now, consider one of the four right-angled triangles formed by the diagonals. The lengths of the two legs (the sides forming the right angle) are 12 cm and 16 cm. The side of the rhombus is the hypotenuse of this triangle.

We can use the Pythagorean theorem to find the length of the hypotenuse (the side of the rhombus). The theorem states that in a right-angled triangle, the square of the hypotenuse (s^2) is equal to the sum of the squares of the other two sides (legs).

Let s be the length of the side of the rhombus. According to the Pythagorean theorem:

$$s^2 = \left(\frac{d_1}{2}\right)^2 + \left(\frac{d_2}{2}\right)^2$$

Substitute the values of the half-diagonals:

$$s^2 = (12\text{ cm})^2 + (16\text{ cm})^2$$

Calculate the squares:

$$s^2 = 144\text{ cm}^2 + 256\text{ cm}^2$$

Add the results:

$$s^2 = 400\text{ cm}^2$$

To find the side length s, take the square root of 400:

$$s = \sqrt{400\ \text{cm}^2}$$

$$s = 20\ \text{cm}$$

Side Length Verification

The calculated side length of the rhombus is 20 cm. Comparing this with the given options, we find that option 2 matches our result.

---

79. Answer: c

Explanation:

Let the radius of the cone and hemisphere be r cm

⇒ Height of the cone h = r cm

Let slant height of the cone be l cm

As we know,

$l^2 = r^2 + h^2$

$\Rightarrow l^2 = r^2 + r^2 = 2r^2$

$\Rightarrow l = \sqrt{2}\, r$

Curved surface area of the cone = $\pi rl = \pi \times r \times \sqrt{2}\, r = \sqrt{2}\, \pi r^2$

Curved surface area of the hemisphere = $2\pi r^2$

⇒ Required ratio = $2\pi r^2 : \sqrt{2}\, r^2 \pi = \sqrt{2} : 1$

---

80. Answer: b

Explanation:

Finding the Maximum Number of Rods That Fit in a Room

This problem asks us to determine the maximum number of rods, from a given list of lengths, that can fit inside a room with specified dimensions. To solve this, we need to find the longest possible straight line that can be contained within the room and then compare the lengths of the rods to this maximum possible length.

Room Dimensions and Available Rod Lengths

First, let's note down the dimensions of the room and the lengths of the rods the man wants to place:

- **Room Length** (L): $12\ \text{m}$
- **Room Breadth** (B): $4\ \text{m}$
- **Room Height** (H): $3\ \text{m}$

The lengths of the rods available are:

- Rod 1: $14\ \text{m}$
- Rod 2: $12\ \text{m}$
- Rod 3: $13\ \text{m}$
- Rod 4: $15\ \text{m}$

Determining the Maximum Possible Length for a Rod

The longest straight line that can fit inside a rectangular room (a cuboid) is its **space diagonal**. This diagonal connects opposite corners of the room, passing through the interior.

The formula to calculate the length of the space diagonal (D) of a cuboid with length L, breadth B, and height H is:

$$D = \sqrt{L^2 + B^2 + H^2}$$

Calculating the Space Diagonal

Now, let's substitute the room's dimensions into the formula:

$$D = \sqrt{(12\ \text{m})^2 + (4\ \text{m})^2 + (3\ \text{m})^2}$$

Calculate the squares:

$$D = \sqrt{144\ \text{m}^2 + 16\ \text{m}^2 + 9\ \text{m}^2}$$

Sum the values inside the square root:

$$D = \sqrt{169\ \text{m}^2}$$

Calculate the square root:

$$D = 13\ \text{m}$$

So, the maximum length of any rod that can fit inside this room is **13 meters**.

Checking Which Rods Can Fit in the Room

We need to compare the length of each available rod with the maximum possible length (the space diagonal, which is 13 m) to see if it fits:

- **Rod 1 (14 m):** Since $14\ \text{m} > 13\ \text{m}$, this rod is too long to fit in the room.
- **Rod 2 (12 m):** Since $12\ \text{m} \leq 13\ \text{m}$, this rod can fit in the room.
- **Rod 3 (13 m):** Since $13\ \text{m} \leq 13\ \text{m}$, this rod can fit exactly along the space diagonal of the room.
- **Rod 4 (15 m):** Since $15\ \text{m} > 13\ \text{m}$, this rod is also too long to fit in the room.

Final Count: Maximum Number of Rods

Based on the comparison, the rods that can fit inside the room are the 12 m rod and the 13 m rod.

Therefore, the maximum number of rods from the given list that the man can put in the room is **2**.

---

81. Answer: a

Explanation:

Calculating the Value of x_3 Using Mean Properties

This solution explains how to find the value of x_3 given the mean of a set of numbers and the mean of a larger set including x_3. We will use the definition of the arithmetic mean to solve this problem.

Understanding the Mean

The arithmetic mean (or average) of a set of numbers is calculated by summing all the numbers in the set and then dividing by the count of numbers in that set. The formula is:

$$\text{Mean} = \frac{\text{Sum of all observations}}{\text{Number of observations}}$$

Step-by-Step Calculation

We are given two pieces of information:

- The mean of x_1 and x_2 is 7.5.
- The mean of x_1, x_2, and x_3 is 8.

Step 1: Using the Mean of x_1 and x_2

From the first piece of information, we can write the equation for the mean:

$$\frac{x_1+x_2}{2} = 7.5$$

To find the sum of x_1 and x_2, we multiply both sides by 2:

$$x_1 + x_2 = 7.5 \times 2$$

$$x_1 + x_2 = 15$$

So, the sum of the first two numbers is 15.

Step 2: Using the Mean of x_1, x_2, and x_3

From the second piece of information, we can write the equation for the mean of the three numbers:

$\frac{x_1+x_2+x_3}{3} = 8$

To find the sum of x_1, x_2, and x_3, we multiply both sides by 3:

$x_1 + x_2 + x_3 = 8 \times 3$

$x_1 + x_2 + x_3 = 24$

This tells us that the sum of all three numbers is 24.

Step 3: Finding the Value of x_3

We have the sum of the first two numbers $(x_1 + x_2)$ and the sum of the first three numbers $(x_1 + x_2 + x_3)$. We can find x_3 by subtracting the sum of the first two from the sum of the three.

We know:

$(x_1 + x_2) + x_3 = 24$

And from Step 1, we know:

$x_1 + x_2 = 15$

Substitute the value of $(x_1 + x_2)$ into the equation:

$15 + x_3 = 24$

To isolate x_3, subtract 15 from both sides:

$x_3 = 24 - 15$

$x_3 = 9$

Conclusion

Therefore, the value of x_3 is 9.

82. **Answer: a**

Explanation:

Classroom Communication Explained

Classroom communication is the process through which information, ideas, and feelings are exchanged between teachers and students, and among students themselves, within an educational setting. Effective classroom communication is vital for learning, engagement, and creating a positive learning environment. It encompasses various methods and styles used to convey messages.

Analyzing Communication Types in the Classroom

Let's examine the options provided to understand which one is typically not considered a primary category of classroom communication:

- **Formal communication**: This is a very common aspect of classroom communication. It includes structured, official interactions, such as lectures, planned discussions, teacher instructions, and official announcements. It usually follows established channels and protocols within the school or classroom.
- **Informal communication**: This type is also prevalent in classrooms. It refers to spontaneous, social interactions that occur among students or between students and teachers outside the official structure. Examples include casual conversations, chatting about assignments, or peer-to-peer learning discussions.
- **Silent communication**: This refers to non-verbal communication, which plays a significant role in the classroom. It includes body language, facial expressions, gestures, posture, and eye contact used by both teachers and students to convey messages, understanding, or emotions without using words.
- **Indirect communication**: While communication in a classroom can sometimes be indirect (meaning the message isn't stated explicitly but implied), "Indirect communication" is not usually classified as a distinct *type* of classroom communication alongside formal, informal, and silent modes. Instead,

indirectness can be a characteristic *within* formal or informal communication. The other three options represent recognized and distinct ways messages are conveyed in a learning environment. Therefore, based on standard classifications of communication types within an educational context, indirect communication is the one that doesn't fit as a primary category compared to the others.

Conclusion on Classroom Communication Inclusion

Based on the analysis, formal, informal, and silent (non-verbal) communication are fundamental components regularly observed and discussed in the context of classroom interactions. Indirect communication, while a possible strategy, is not typically defined as a separate category in the same way.

---

83. **Answer: c**

Explanation:

Understanding Circular Communication Patterns

This question asks about the most suitable purpose for using a **circular type of communication**. Communication networks show how messages travel within a group. Different patterns exist, each with pros and cons.

Key Communication Network Types

To understand where circular communication fits best, let's briefly compare it to other common network types:

- **Circular Network:** Information flows sequentially from one member to the next, eventually returning to the start. Each member typically interacts with only two others.
- **Wheel Network:** One central member acts as a hub, and all communication must pass through them.

- **Chain Network:** Information travels in a straight line from one member to the next.
- **All-Channel Network:** Everyone communicates freely with everyone else, allowing maximum interaction.

Evaluating Circular Communication Suitability

Now, let's analyze why **circular communication** might be suitable for specific purposes:

- **Member dissatisfaction:** This pattern is generally not ideal for reducing dissatisfaction. Because messages pass sequentially, they can become distorted or delayed. This lack of clarity and speed might even worsen frustration or misunderstanding among members.
- **Effective judgement process:** Making good judgments often requires quick feedback, open discussion, and collaboration. The limited interaction in a circular network (members only talk to two others) slows down the process and restricts the flow of diverse ideas, making it unsuitable for effective group judgment or complex problem-solving.
- **Effective transmission of information:** While a **circular type of communication** does ensure that information eventually reaches everyone in a structured order, it's often slow and prone to errors (distortion). Other networks, like the wheel or all-channel, are usually considered more effective for transmitting information quickly and accurately.
- **Member satisfaction:** The circular pattern can foster a degree of **member satisfaction**. Here's why:
  - **Inclusion:** Every member is part of the communication flow, receiving information sequentially. This prevents individuals from feeling left out.
  - **Order:** The structured, step-by-step process provides predictability. Members know how information will move through the group.
  - **Participation:** Even though interaction is limited, each member plays a role in passing the message along. This structured participation can make members feel involved.

  Compared to highly restrictive or chaotic networks, the balanced, sequential nature of circular communication can lead to moderate satisfaction levels because it ensures everyone is informed in an orderly fashion.

Conclusion on Circular Communication's Best Use

Based on its structure, the **circular communication** pattern is most appropriate for situations where maintaining an orderly, sequential flow of information and ensuring everyone receives it is important for **member satisfaction**. While it might not be the fastest or most collaborative method, its inclusiveness and structure contribute positively to how members feel about the communication process.

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84. **Answer: b**

Explanation:

Defining the Concept of Listening

Listening is a fundamental communication skill. It involves more than just hearing sounds; it requires active engagement to understand and interpret the message being conveyed. Let's explore the best definition among the given options.

Analyzing the Options for Listening

We need to identify the option that most accurately describes the process of **listening**.

- **Option 1: The physiological process of decoding**

  This option focuses on the physical aspect of hearing and the initial brain activity involved in processing sound waves. While hearing is a part of listening, listening itself encompasses a broader cognitive process.

- **Option 2: A process we use to make sense out of what we hear**

  This definition highlights the core purpose of listening: understanding and interpreting the meaning behind the sounds we perceive. It involves cognitive effort to grasp the speaker's message, intent, and context.

- **Option 3: Forwarding the information that has been communicated**

Forwarding information describes relaying a message, which is a communication act itself but not the definition of listening. Listening is about receiving and understanding, not necessarily passing information along.

- **Option 4: Recalling information that has been communicated**

  Recalling information refers to memory. While effective listening often leads to better recall, the act of remembering is distinct from the process of actively making sense of what is heard.

Key Components of Effective Listening

Effective **listening** involves several key elements:

- **Hearing:** The physical ability to detect sound.
- **Understanding:** Interpreting the meaning of the sounds and words.
- **Remembering:** Retaining the information heard.
- **Evaluating:** Critically assessing the message.
- **Responding:** Providing feedback or reacting to the message.

Option 2 best encapsulates the crucial step of understanding and interpreting the message, which is central to the overall process of **listening**.

Conclusion on Listening Definition

Based on the analysis, the most comprehensive and accurate definition of **listening** is the cognitive process aimed at making sense of what is heard. This involves interpretation and understanding, distinguishing it from mere hearing or subsequent actions like recalling or forwarding information.

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85. **Answer: c**

Explanation:

Understanding the Meaning of Responding in Communication

In communication, the term 'responding' refers to the process of reacting to a message received from another person. It's a crucial part of the communication loop, showing that the message has not only been received but also processed. A good response often involves more than just acknowledging; it signifies understanding and engagement.

Analyzing the Options for Responding

Let's break down the provided options to understand what 'responding' truly means in a communication context:

- **Option 1: Focussing on a particular sound or message**
  This describes the act of paying attention or selective listening. While focusing is necessary to receive a message, it is not the same as responding to it. Responding happens *after* you have processed the message.
- **Option 2: Sorting the various sounds that draw your attention**
  This refers to auditory processing and filtering information. It's about managing sensory input, which is a preliminary step to understanding a message, but not the response itself.
- **Option 3: Confirming your understanding of a message**
  This option accurately captures the essence of responding. When you confirm your understanding, you are actively engaging with the message and providing feedback to the sender. This can be done through verbal cues (like paraphrasing or asking clarifying questions) or non-verbal cues (like nodding). This confirmation shows you have interpreted the message and are ready to proceed or acknowledge it. This is a core aspect of effective communication.
- **Option 4: Assigning meaning to messages**
  Assigning meaning is part of the interpretation process, which is essential for understanding. However, 'responding' typically implies an action or feedback *based* on that assigned meaning, rather than just the act of assigning meaning itself. Confirmation of understanding is a more complete definition of responding in many communication contexts.

Conclusion on Responding

Based on the analysis, the most accurate definition of 'responding' among the given choices is **confirming your understanding of a message**. This involves actively processing the information and providing feedback to ensure clarity and effective communication.

---

86. **Answer: c**

Explanation:

Identifying the First 10 Prime Numbers

The question asks us to compare the **median** (represented by M) and the **mean** (represented by m) of the first 10 **prime numbers**. To do this, we first need to list these numbers.

A prime number is a natural number greater than 1 that has exactly two distinct positive divisors: 1 and itself. Listing the first ten prime numbers in ascending order, we get:

- 2
- 3
- 5
- 7
- 11
- 13
- 17
- 19
- 23
- 29

Calculating the Median (M)

The **median** is the value separating the higher half from the lower half of a data sample. For a dataset with an even number of observations (like our 10 prime numbers), the median is the average of the two middle values.

Our sorted list is: 2, 3, 5, 7, **11**, **13**, 17, 19, 23, 29.

The two middle numbers are the 5th and 6th values, which are 11 and 13.

We calculate the median (M) by finding the average of these two numbers:

$M = \frac{11+13}{2}$

$M = \frac{24}{2}$

$M = 12$

So, the **median** (M) of the first 10 prime numbers is 12.

Calculating the Mean (m)

The **mean** is the sum of all the values divided by the number of values.

First, we sum the first 10 prime numbers:

Sum = 2 + 3 + 5 + 7 + 11 + 13 + 17 + 19 + 23 + 29 = 129

There are 10 numbers in our list.

Now, we calculate the mean (m):

$m = \frac{\text{Sum of the numbers}}{\text{Count of the numbers}}$

$m = \frac{129}{10}$

m = 12.9

So, the **mean** (m) of the first 10 prime numbers is 12.9.

Comparing Median (M) and Mean (m)

We have calculated the median (M) and the mean (m) for the first 10 prime numbers:

- Median (M) = 12
- Mean (m) = 12.9

Comparing these two values, we can see that 12 is less than 12.9.

Therefore, M < m.

Conclusion on Comparison

The calculation shows that the **median** (M = 12) is less than the **mean** (m = 12.9) for the first 10 prime numbers. This directly corresponds to the relationship M < m.

---

87. **Answer: c**

Explanation:

Mode of Observations Explained

This question asks us to find the **mode** for a given set of numerical data. The **mode** is a key statistical measure that identifies the value which appears most frequently in a data set.

The Data Set

We are given the following list of observations:

- 0, 1, 6, 7, 2, 3, 7, 0, 7, 2, 6, 6, 7, 5, 0, 7

Step-by-Step Calculation of Mode

To determine the mode, we need to count how many times each distinct number appears in the list. Let's tally the occurrences:

Observation Value	Count (Frequency)
0	3
1	1
2	2
3	1
5	1
6	3
7	4

Identifying the Most Frequent Observation

By reviewing the frequency counts in the table above, we can identify the observation with the highest frequency:

- The number **7** appears 4 times.
- The numbers 0 and 6 each appear 3 times.
- The number 2 appears 2 times.
- The numbers 1, 3, and 5 each appear only 1 time.

The observation '7' has the highest frequency, appearing more times than any other value in the list.

Determining the Mode

Based on our frequency analysis, the value that occurs most often is 7. Therefore, the **mode** of the given observations is 7.

Matching the Result to Options

The options provided were:

1. 3.8
2. 6
3. 7
4. None of the above

Our calculated mode is 7, which directly corresponds to option 3.

---

88. Answer: b

Explanation:

Understanding Pie Diagram Proportions and Slice Angles

A pie diagram, also known as a pie chart, is a circular chart used to represent data. It's divided into different segments or 'slices', where each slice represents a specific category or item. The size of each slice visually communicates how much of the whole that particular item constitutes. Pie charts are excellent for showing proportions or percentages of a whole.

How Proportions Relate to Pie Chart Slices

The key principle in constructing a pie chart is that the entire circle represents the total amount or 100%. The data is divided into parts, and each part is allocated a section of the circle. The size of each section is determined by the proportion of the data it represents. This proportion is directly mapped to the central angle of the sector (slice).

The central angle (θ) for each slice is calculated based on the proportion of the item relative to the total sum. The formula used is:

$$\theta = \frac{\text{Value of the Item}}{\text{Total Value}} \times 360^\circ$$

Or, if the proportion is already known as a fraction or percentage:

$$\theta = \text{Proportion of the Item} \times 360^\circ$$

For instance, if a specific item makes up 50% of the total data, its corresponding slice in the pie chart will have a central angle of $0.50 \times 360^\circ = 180^\circ$, which is exactly half the circle.

Analyzing the Options for Proportionality

Let's look at why the central angle is the correct measure of proportion in a pie chart:

- **Angle of slices:** This is the correct answer. The central angle of each slice is directly calculated from the item's proportion. If an item's proportion doubles, its angle also doubles, maintaining a direct linear relationship.
- **Area of slices:** The area (A) of a slice depends on both the angle (θ) and the radius (r) of the pie chart, using the formula $A = \frac{\theta}{360^\circ} \times \pi r^2$. While the area is proportional to the proportion (because θ is), the angle is the more fundamental geometric property that defines the slice's size based on the proportion. The angle is the direct input for determining the slice size relative to the full 360°.
- **Length of curved arcs of slices:** The length of the arc (L) forming the outer edge of the slice is given by $L = \frac{\theta}{360^\circ} \times 2\pi r$. Similar to the area, the arc length is proportional to the central angle and thus indirectly proportional to the item's proportion. However, the angle is the direct measure determined by the data's proportion.
- **Perimeter of slices:** The perimeter (P) includes the arc length plus the two radii forming the sides of the sector $(P = L + 2r)$. This measurement is even less directly tied to the proportion compared to the angle.

Conclusion on Pie Chart Representation

The defining characteristic that visually represents the proportion of each item in a pie diagram is the central angle of its corresponding slice. Therefore, the proportion of various items in a pie diagram is directly proportional to the **angle of slices**.

89. **Answer: d**

Explanation:

Understanding the Number Relationship Pattern

This question asks us to find a specific relationship or pattern between the numbers 3 and 11. Once we identify this pattern, we need to apply the same logic to the number 7 to find the corresponding number from the given options.

Identifying the Relationship Between 3 and 11

Let's analyze the connection between the first pair of numbers, 3 and 11. We can explore several mathematical operations to see if they fit:

- **Addition:** Adding a constant value. $11 - 3 = 8$. If we add 8 to 7, we get $7 + 8 = 15$, which is not among the options.
- **Multiplication:** Multiplying by a constant value. $11/3 \approx 3.67$. This doesn't seem straightforward.
- **Combining Operations:** Let's consider squaring the first number and then performing another operation.
  - If we square 3, we get $3^2 = 9$.
  - How can we get 11 from 9? We can add 2: $9 + 2 = 11$.

So, the potential pattern is: Square the first number and add 2. We can represent this relationship mathematically as $y = x^2 + 2$, where x is the first number and y is the second number.

Let's test this pattern with the given pair (3, 11):

- $x = 3$
- $y = 3^2 + 2 = 9 + 2 = 11$

The pattern holds true for the pair (3, 11).

Applying the Pattern to Find the Related Number for 7

Now, we apply the same identified pattern, $y = x^2 + 2$, to the number 7.

- Here, the first number is $x = 7$.
- We need to find the second number, y.

Step-by-Step Calculation

Follow these steps to calculate the result:

1. **Square the first number (7):** $7^2 = 7 \times 7 = 49$
2. **Add 2 to the result:** $49 + 2 = 51$

Using the formula: $y = 7^2 + 2 = 49 + 2 = 51$.

Conclusion: Matching with Options

The calculation shows that the number related to 7, following the same pattern as 3 relates to 11, is 51.

Comparing this result with the given options:

- 1. 22
- 2. 29
- 3. 18
- 4. 51
- 5.

Our calculated value, 51, matches the fourth option.

---

90. Answer: a

Explanation:

- **Question Breakdown**: The question asks to identify which of the listed communication types represents **horizontal communication** within an organization.

Understanding Horizontal Communication

Horizontal communication, also known as lateral communication, refers to the flow of information between individuals or groups at the same hierarchical level within an organization. Its main purposes include:

- Coordinating tasks and activities between departments or team members.
- Sharing information, solving problems, and building rapport among peers.
- Facilitating teamwork and collaboration.

Analyzing Communication Types

Let's examine the different types of communication mentioned in the options:

Communication Type	Description	Relation to Hierarchy
Lateral Communication	Exchange of information between individuals or groups at the same organizational level (e.g., between two department managers or team members in the same department).	**Horizontal**
Downward Communication	Information flow from superiors to subordinates (e.g., a manager giving instructions to their team).	Vertical (Downward)
Upward Communication	Information flow from subordinates to superiors (e.g., an employee reporting progress or feedback to their manager).	Vertical (Upward)
Neutral Communication	This is not a standard classification for communication flow based on organizational hierarchy.	N/A

Identifying the Correct Communication Flow

Based on the definitions:

- **Lateral communication** fits the description of horizontal communication perfectly because it occurs between colleagues at the same rank or level.
- Downward and upward communication are forms of **vertical communication**, as they involve a change in hierarchical level.
- Neutral communication is not a recognized category in this context.

Therefore, **lateral communication** is the type of communication that occurs horizontally across an organization.

---

91. Answer: a

Explanation:

Defining Verbal Communication

Verbal communication is a type of communication that makes use of spoken words. It involves the exchange of information, thoughts, and feelings through speech. The effectiveness of verbal communication depends on factors like clarity of speech, pronunciation, tone of voice, and the choice of words.

Analyzing Communication Examples

Let's look at each scenario presented to determine which one represents **verbal communication**:

- **Option 1: Professor Sharma delivered his lecture in the class**

  In this case, Professor Sharma is using spoken words to deliver information to his students. This is a direct use of speech, making it a classic example of **verbal communication**.

- **Option 2: Professor Verma gave the message to the students through mobile**

Communicating 'through mobile' usually implies sending a written message (like SMS, WhatsApp, or email) or possibly a voice note. While a voice note is verbal, the general phrasing suggests a mode that is often written or digitally mediated, rather than direct, live speech. Thus, this is typically considered **written communication** or digital communication.

- **Option 3: The child was crying to attract the attention of the mother**

  Crying is a vocalization, but it is primarily an expression of emotion or discomfort rather than the use of structured language or words to convey a specific message. This form of communication is categorized as **non-verbal communication**.

- **Option 4: Deepak wrote a letter for leave application**

  Writing a letter involves using words, but the medium is written text. Therefore, this is an example of **written communication**, not verbal communication.

Conclusion: Identifying Verbal Communication

Comparing the options, delivering a lecture involves direct speech and spoken words. This aligns perfectly with the definition of **verbal communication**. The other options represent written communication (Options 2 and 4) or non-verbal communication (Option 3).

---

92. **Answer: a**

Explanation:

Communication Through Gestures: Exploring Kinesics

This solution delves into the specific field of communication that deals with gestures.

Understanding Communication Channels

Communication is a complex process involving various methods to convey messages. While verbal communication uses spoken or written words, **non-verbal communication** encompasses all other ways we send messages. This includes body language, facial expressions, eye contact, and importantly, gestures. The question asks to identify the specific area of study related to communication through gestures.

Analyzing the Options

Let's examine each option to understand its relevance to communication through gestures:

- **Kinesics**: This field specifically studies communication through body movements. It covers gestures, posture, facial expressions, eye movements, and touch. Gestures, such as waving, pointing, or using hand signals, are a primary component of kinesics.
- **Proxemics**: This area focuses on the study of how people perceive and use space to communicate. It deals with concepts like personal space, territoriality, and the distance between individuals during interaction. Proxemics is not directly related to gestures themselves.
- **Para-language**: Also known as paralanguage, this refers to the vocal aspects of speech that accompany words. It includes elements like tone of voice, pitch, speed of speaking, volume, and pauses. Para-language is about *how* something is said, not through body movements.
- **Non-verbal behaviour**: This is a broad, overarching category that includes all forms of communication that do not involve words. While gestures are a type of non-verbal behaviour, this option is less specific than kinesics. Kinesics is the specialized study *within* non-verbal behaviour that deals directly with body movements like gestures.

Identifying the Correct Field for Gestures

When considering communication specifically through gestures, the most accurate and specific field of study is **Kinesics**. Kinesics provides the framework for understanding the meaning and impact of our bodily movements, including the vast array of gestures we use consciously and unconsciously.

While gestures are indeed a part of the larger category of **non-verbal behaviour**, **Kinesics** is the precise term for the study of body motion communication, making it the most appropriate answer.

---

93. **Answer: b**

Explanation:

Understanding Communication Forms

Communication involves the exchange of messages or information between individuals. This exchange is typically interactive. We need to identify which of the listed activities doesn't primarily function as a form of active communication between participants.

Interview: A Direct Communication Method

An **Interview** is a structured conversation where one person asks questions to gain information from another. This involves a clear, usually two-way, exchange of ideas and information, making it a definite form of communication.

Discussion: An Interactive Communication

A **Discussion** involves talking about a topic, sharing viewpoints, and exchanging ideas. It's a collaborative process requiring active participation from multiple people, establishing it firmly as a form of communication.

Social Interaction: Broader Communication

Social interaction encompasses any relationship or communication between two or more individuals. Activities like talking, gesturing, or even sharing silence in a social context involve communication, making this a broad category of communication.

Reading Novel: Receptive Activity

Reading an interesting novel is mainly a receptive or passive activity for the reader. While the author uses the novel to communicate a story, ideas, or emotions, the act of reading itself is the reader's process of receiving and interpreting that message. It doesn't typically involve a direct, real-time exchange between the reader and the author, unlike the other options. Therefore, it's not considered a form of active communication in the same sense.

Identifying Non-Communication Activity

In summary, interviews, discussions, and social interactions all represent ways people actively communicate with each other. Reading a novel, however, is primarily about receiving and interpreting information conveyed through written text, making it distinct from these interactive communication processes.

---

94. Answer: c

Explanation:

This problem involves identifying a hidden pattern or rule used in a sequence of operations that resembles subtraction but yields non-standard results. We need to apply this identified rule to solve the final operation.

Identifying the Pattern in the Given Operations

Let's analyze the provided examples to understand the underlying rule:

- **Example 1:** 41 - 32 = 55
- **Example 2:** 42 - 34 = 76
- **Example 3:** 53 - 13 = 48

We observe that the standard subtraction doesn't apply (e.g., 41 - 32 = 9, not 55). Let's consider the digits of the numbers involved.

Let the first number be N_1 and the second number be N_2. We can represent N_1 as AB (where A is the tens digit and B is the units digit) and N_2 as CD.

Let's calculate the sum of the digits for each number:

- For $N_1 = AB$, the sum of digits is $S_1 = A + B$.
- For $N_2 = CD$, the sum of digits is $S_2 = C + D$.

Now, let's test a hypothesis where the result is formed by concatenating these sums (S_1 and S_2).

Testing the Pattern:

- **Example 1:** 41 - 32
  - $N_1 = 41 \implies A = 4, B = 1$. Sum $S_1 = 4 + 1 = 5$.
  - $N_2 = 32 \implies C = 3, D = 2$. Sum $S_2 = 3 + 2 = 5$.
  - If we concatenate S_1 and S_2, we get 55. This matches the result. Let's check if the order is always $(S_1)(S_2)$.
- **Example 2:** 42 - 34
  - $N_1 = 42 \implies A = 4, B = 2$. Sum $S_1 = 4 + 2 = 6$.
  - $N_2 = 34 \implies C = 3, D = 4$. Sum $S_2 = 3 + 4 = 7$.
  - If we concatenate S_1 and S_2, we get 67. However, the given result is 76. This suggests the order might be different.
  - Let's try concatenating S_2 and S_1: Concatenate(S_2, S_1) = Concatenate $(7, 6)$ = 76. This matches the result.
- **Example 3:** 53 - 13
  - $N_1 = 53 \implies A = 5, B = 3$. Sum $S_1 = 5 + 3 = 8$.
  - $N_2 = 13 \implies C = 1, D = 3$. Sum $S_2 = 1 + 3 = 4$.
  - Let's test the pattern: Concatenate(S_2, S_1) = Concatenate$(4, 8)$ = 48. This matches the result.

The consistent pattern observed is: For an operation $AB - CD$, the result is obtained by concatenating the sum of the digits of the second number $(S_2 = C + D)$ with the sum of the digits of the first number $(S_1 = A + B)$.

Rule: $AB - CD = \text{Concatenate}(C + D, A + B)$

We can summarize this analysis in a table:

Operation	N_1 (Digits)	$S_1 = A + B$	N_2 (Digits)	$S_2 = C + D$	Result = Concatenate (S_2, S_1)
41 - 32	41 (4, 1)	$4 + 1 = 5$	32 (3, 2)	$3 + 2 = 5$	Concatenate(5, 5) = 55
42 - 34	42 (4, 2)	$4 + 2 = 6$	34 (3, 4)	$3 + 4 = 7$	Concatenate(7, 6) = 76
53 - 13	53 (5, 3)	$5 + 3 = 8$	13 (1, 3)	$1 + 3 = 4$	Concatenate(4, 8) = 48

Applying the Pattern to Calculate 33 - 22

Now, we apply the discovered rule to the question 33 - 22.

- First Number (N_1): 33
  - Digits are 3 and 3.
  - Sum of digits (S_1) = $3 + 3 = 6$.
- Second Number (N_2): 22
  - Digits are 2 and 2.
  - Sum of digits (S_2) = $2 + 2 = 4$.
- Apply the rule: Concatenate(S_2, S_1)
  - Concatenate(4, 6) = 46.

Therefore, based on the identified pattern, 33 - 22 equals 46.

Final Answer Determination

The calculation using the established pattern yields 46. Comparing this with the given options, Option 3 matches our result.

---

95. **Answer: b**

Explanation:

Exploring the Family Relationship Puzzle

This question involves understanding family connections based on a descriptive statement. We need to figure out the relationship between a woman and a man she is introducing. Let's break down the core statement: "his brother's father is the only son of my grandfather."

Analyzing the Statement Step-by-Step

To solve this, let's identify the key people and relationships mentioned:

- **The Man:** The person being introduced.
- **The Woman:** The person speaking.
- **"His brother's father":** This refers to the father of the man being introduced. Since brothers share the same father, this is simply the **Man's Father**.
- **"My grandfather":** This refers to the grandfather of the woman who is speaking.
- **"The only son of my grandfather":** This refers to the son of the woman's grandfather. Since he is the *only* son, this uniquely identifies the **Woman's Father**.

Connecting the Family Links

Now, let's combine the pieces based on the statement:

> *The Man's Father = The Woman's Father (who is the only son of the Woman's Grandfather)*

This equality tells us that the father of the man is the same person as the father of the woman.

Determining the Woman's Relation to the Man

If two individuals share the same father, they are siblings.

- The man is the son of this common father.
- The woman is also the daughter of this same common father.

Therefore, the woman and the man are brother and sister.

The question asks how the woman is related to the man. Since they are siblings, and the woman is the one speaking, she is the man's **Sister**.

Final Answer Confirmation

Based on the logical deduction from the statement, the woman is the **Sister** of the man.

---

96. **Answer: a**

Explanation:

Decoding the Multiplication Pattern Question

This question presents a series of multiplication-like operations that follow a specific, non-standard pattern. We are given three examples:

- $4 \times 6 = 1812$
- $5 \times 8 = 2415$
- $6 \times 9 = 2718$

Our goal is to identify this underlying **pattern** and apply it to find the result of 7×6.

Analyzing the Pattern in Given Examples

Let's break down each provided example to understand how the results are obtained:

- **Example 1:** $4 \times 6 = 1812$
  Let the operation be represented as $a \times b$. Here, $a=4$ and $b=6$.
  The result is 1812. It appears to be formed by two parts: 18 and 12.
  Observing the numbers:
  - The first part, 18, is obtained by multiplying the second number (6) by 3: $6 \times 3 = 18$.

    - The second part, 12, is obtained by multiplying the first number (4) by 3: $4 \times 3 = 12$.

  So, the pattern seems to be: Concatenate $(b \times 3)$ and $(a \times 3)$.
- **Example 2:** $5 \times 8 = 2415$
  Here, $a=5$ and $b=8$. The result is 2415.
  Let's check if the pattern holds:
    - First part: $b \times 3 = 8 \times 3 = 24$.
    - Second part: $a \times 3 = 5 \times 3 = 15$.

  Concatenating these gives 2415. The pattern is consistent.
- **Example 3:** $6 \times 9 = 2718$
  Here, $a=6$ and $b=9$. The result is 2718.
  Checking the pattern:
    - First part: $b \times 3 = 9 \times 3 = 27$.
    - Second part: $a \times 3 = 6 \times 3 = 18$.

  Concatenating these gives 2718. The pattern is confirmed across all examples.

The established **rule** for the operation $a \times b$ is to calculate $(b \times 3)$ and $(a \times 3)$ and then combine them in that order.

Applying the Pattern to Find 7 × 6

Now, we apply the identified pattern to the question 7×6.

In this case, $a = 7$ and $b = 6$.

1. **Calculate the first part:** Multiply the second number (b) by 3.
   $b \times 3 = 6 \times 3 = 18$
2. **Calculate the second part:** Multiply the first number (a) by 3.
   $a \times 3 = 7 \times 3 = 21$
3. **Combine the results:** Concatenate the first part (18) and the second part (21).
   Result = 1821

Conclusion and Matching the Option

Following the discovered pattern, the calculation for 7×6 yields 1821.

Comparing this result with the given options:

- Option 1: 1821
- Option 2: 2428
- Option 3: 3035
- Option 4: 3642

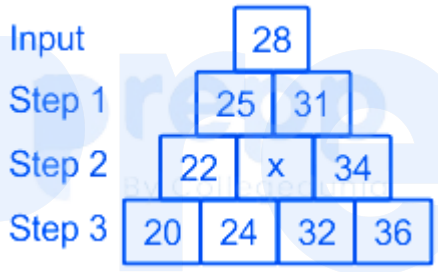
The calculated result 1821 matches **Option 1**.

---

97. Answer: b

Explanation:

The given number pyramid:



The logic is as follows:
The average of two numbers is written above them.
(20 + 24) / 2 = 22

(24 + 32) / 2 = 28

(32 + 36) / 2 = 34

(22 + 28) / 2 = 25

(28 + 34) / 2 = 31

(25 + 31) / 2 = 28

Hence, option 2 is the correct answer.

---

98. **Answer: b**

Explanation:

Decoding the Word Code Pattern

This problem involves deciphering a code where a word is transformed into a new sequence of letters based on a specific rule. We are given that the word **TABLE** is coded as **UCEPJ**. We need to find the code for the word **CHAIR** using the same rule.

Analyzing the Transformation Rule: TABLE to UCEPJ

First, let's determine the relationship between the letters of **TABLE** and **UCEPJ**. We can compare each letter and see how it changes:

- The first letter T in TABLE becomes U in UCEPJ. This is a shift of +1 position in the alphabet (T $\rightarrow$ U).
- The second letter A in TABLE becomes C in UCEPJ. This is a shift of +2 positions (A $\rightarrow$ B $\rightarrow$ C).
- The third letter B in TABLE becomes E in UCEPJ. This is a shift of +3 positions (B $\rightarrow$ C $\rightarrow$ D $\rightarrow$ E).
- The fourth letter L in TABLE becomes P in UCEPJ. This is a shift of +4 positions (L $\rightarrow$ M $\rightarrow$ N $\rightarrow$ O $\rightarrow$ P).
- The fifth letter E in TABLE becomes J in UCEPJ. This is a shift of +5 positions (E $\rightarrow$ F $\rightarrow$ G $\rightarrow$ H $\rightarrow$ I $\rightarrow$ J).

The coding pattern is based on adding the position of the letter in the word to its alphabetical index. Specifically, the shift increases by one for each subsequent letter in the word.

We can represent this pattern clearly:

Letter in TABLE	Shift Operation	Coded Letter in UCEPJ
T	$T + 1$	U
A	$A + 2$	C
B	$B + 3$	E
L	$L + 4$	P
E	$E + 5$	J

Applying the Identified Pattern to CHAIR

Now, we apply the same logic (adding the letter's position number to the letter itself) to the word **CHAIR**:

- For the first letter C: Apply a +1 shift. C $\rightarrow$ D.
- For the second letter H: Apply a +2 shift. H $\rightarrow$ J.
- For the third letter A: Apply a +3 shift. A $\rightarrow$ D.
- For the fourth letter I: Apply a +4 shift. I $\rightarrow$ M.
- For the fifth letter R: Apply a +5 shift. R $\rightarrow$ W.

Let's show this step-by-step:

Letter in CHAIR	Shift Operation	Resulting Coded Letter
C	$C + 1$	D
H	$H + 2$	J
A	$A + 3$	D
I	$I + 4$	M
R	$R + 5$	W

Determining the Final Code for CHAIR

By applying the observed pattern of sequential alphabetical shifts (+1, +2, +3, +4, +5) to the letters of **CHAIR**, we obtain the resulting letters D, J, D, M, and W.

Therefore, the coded word for **CHAIR** is **DJDMW**.

---

99. **Answer: c**

Explanation:

- **Question Analysis**: The question asks for the total number of unique **handshakes** possible among **eight friends** at a party, given that each person shakes hands with every other person exactly once.
- **Problem Type**: This is a classic combinatorics problem. We need to find the number of ways to select pairs (groups of 2) from a larger set (the 8 friends), where the order of selection does not matter (A shaking B's hand is the same as B shaking A's). This indicates the use of combinations.

Calculating the Number of Handshakes

To find the total number of possible **handshakes** among **eight friends**, we can use the combination formula. A handshake involves exactly two people. Therefore, we need to find the number of ways to choose 2 friends from the group of 8.

Using the Combination Formula

The combination formula calculates the number of ways to choose a subset of k items from a larger set of n items, without regard to the order of selection. The formula is:

$$C(n,k) = \binom{n}{k} = \frac{n!}{k!(n-k)!}$$

In this problem:

- n = Total number of friends = 8
- k = Number of friends in one handshake = 2

We substitute these values into the formula:

$$C(8,2) = \binom{8}{2} = \frac{8!}{2!(8-2)!}$$

Step-by-Step Calculation

1. **Calculate the factorials**:
   - $n! = 8! = 8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1$
   - $k! = 2! = 2 \times 1 = 2$
   - $(n-k)! = (8-2)! = 6! = 6 \times 5 \times 4 \times 3 \times 2 \times 1$
2. **Substitute into the formula**:

$$C(8,2) = \frac{8!}{2!6!}$$

3. **Simplify the expression**: We can rewrite $8!$ as $8 \times 7 \times 6!$.

$$C(8,2) = \frac{8 \times 7 \times 6!}{2 \times 1 \times 6!}$$

4. **Cancel out** $6!$:

$$C(8,2) = \frac{8 \times 7}{2 \times 1}$$

5. **Perform the multiplication and division**:

$$C(8,2) = \frac{56}{2}$$

$$C(8,2) = 28$$

Alternative Method: Sequential Counting

We can also think about this sequentially:

- The first friend shakes hands with the other 7 friends.
- The second friend has already shaken hands with the first, so they shake hands with the remaining 6 friends.
- The third friend shakes hands with the remaining 5 friends.

- This pattern continues: 4, 3, 2, and finally, the seventh friend shakes hands with the eighth friend (1 handshake).

The total number of handshakes is the sum of these counts:

$7 + 6 + 5 + 4 + 3 + 2 + 1 = 28$

This sum is equivalent to the sum of the first $n - 1$ integers, where $n = 8$. The formula for the sum of the first m integers is $\frac{m(m+1)}{2}$. Here, $m = n - 1 = 7$.

$$\text{Sum} = \frac{7(7+1)}{2} = \frac{7 \times 8}{2} = \frac{56}{2} = 28$$

Final Answer Summary

Both methods confirm that the total number of possible **handshakes** among **eight friends**, where each person shakes hands with every other person exactly once, is **28**.

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100. Answer: a

Explanation:

Analyzing the Fallacy in the Sanskrit Language Argument

The question presents a logical argument and asks us to identify the specific type of fallacy it commits. The argument is structured as follows:

- Premise 1: Some languages are difficult to learn.
- Premise 2: Sanskrit is a language.
- Conclusion: Therefore, Sanskrit is difficult to learn.

We need to determine the flaw in this reasoning process, focusing on the relationship between the premises and the conclusion, particularly concerning the terms used.

Understanding Categorical Syllogisms and Fallacies

This argument is a form of categorical syllogism. Identifying fallacies often involves checking if the argument correctly uses its terms according to logical rules. A common fallacy related to syllogisms is the **Fallacy of the Undistributed Middle Term**.

The Fallacy of the Undistributed Middle Term Explained

In a categorical syllogism, there are three terms:

- The major term (predicate of the conclusion)
- The minor term (subject of the conclusion)
- The middle term (appears in both premises but not the conclusion)

The middle term must be **distributed** in at least one of the premises. A term is distributed if the statement makes a claim about *all* members of the class that the term represents. If the middle term is not distributed in either premise, the conclusion cannot logically follow.

Applying the Rule to the Sanskrit Argument

Let's identify the terms and check the distribution:

- Minor term: Sanskrit
- Major term: difficult to learn
- Middle term: languages

Now, let's examine the premises:

1. Premise 1: "**Some languages** are difficult to learn."
    - Here, the subject term "languages" refers only to *some* members of the category of languages, not all of them. Therefore, "languages" is **undistributed** in this premise.
2. Premise 2: "Sanskrit is a **language**."
    - In this statement, "language" is the predicate of an affirmative proposition ('Sanskrit is a...'). Predicate terms in affirmative propositions

are generally **undistributed** because the statement doesn't necessarily refer to all members of the predicate class. It only states that Sanskrit belongs to this class.

Since the middle term "languages" is not distributed in either Premise 1 or Premise 2, the argument commits the **Fallacy of the Undistributed Middle Term**.

The argument fails because knowing that *some* languages are difficult and that Sanskrit is a language doesn't logically guarantee that Sanskrit falls into the *specific subset* of languages that are difficult. It might belong to the subset of languages that are not difficult.

Why Other Options Are Incorrect

- **Fallacy of Composition**: This fallacy occurs when one assumes that what is true for a part must also be true for the whole group. For example, "Each instrument in the orchestra is light, therefore the orchestra is light." This does not apply to the Sanskrit argument.
- **Fallacy of Division**: This fallacy occurs when one assumes that what is true for the whole group must also be true for each part. For example, "The team is excellent, therefore every player is excellent." This also does not apply here.
- **None of the above**: Since the Fallacy of the Undistributed Middle Term correctly describes the error, this option is incorrect.

Conclusion on the Argument's Fallacy

The argument incorrectly concludes that Sanskrit must be difficult because it belongs to the category 'languages', even though the premise only states that *some* languages possess this difficulty. This logical error is precisely the **Fallacy of the Undistributed Middle Term**.