RRB NTPC 30 Dec 2020 Shift 1 Solution

1. Find the length of the longest pole that can be placed in a room of dimensions 30 m × 15 m × 10 m.

a. 31 m
b. 33 m
c. 35 m
d. 18 m

Ans. c
Explanation:
Given:
Dimensions of the room = 30 m × 15 m × 10 m
Formula used:
Diagonal of a cuboid = √ l2 + b2 + h2
Calculation:
The longest pole that can be placed in a cuboidal room is the diagonal.
Diagonal of cuboid = $\sqrt{30^2 + 15^2 + 10^2}$ = √ 900 + 225 + 100
⇒ √ 1225 = 35 m
∴ The longest pole that can be placed in the cuboidal room = 35 m

2. A cuboid having the surface area of 3 adjacent faces as a, b, c has the volume:

a. $(abc)^{\frac{1}{3}}$
b. abc
c. $(abc)^{\frac{1}{2}}$
d. $a^3b^3c^3$

Ans. c
Explanation:
Given:
The Areas of 3 adjacent faces of cuboid = a, b & c

Formula used:
The volume of cuboid = Length × Breadth × Height
Calculation:
Let the sides of the cuboid be L, B & H
So, a = L × B; b = B × H; c = H × L
abc = (L × B) × (B × H) × (H × L)
⇒ abc = L2 × B2 × H2
⇒ L × B × H = √abc
∴ The volume of cuboid = √abc

3. Which state is the largest producer of gold in India?
a. Chhattisgarh
b. Telangana
c. Karnataka
d. Jharkhand

Ans. c
Explanation:
The correct answer is Karnataka.
Karnataka is the largest producer of gold in India.

4. A sum of money amounts to Rs.1600 in two years and Rs. 1700 in three years, at compounded interest, compounded annually. What is the rate of interest?
a. 6.5%
b. 6.25%
c. 6%
d. 7%

Ans. b
Explanation:
Given:
Amount in 2 years = Rs.1600
Amount in 3 years = Rs.1700
Formula used:
Amount = Principal × (1 + R/100)n
Calculation:

Let the principal be = P
1600 = P(1 + R/100)2 (1)
1700 = P(1 + R/100)3 (2)
By (2) ÷ (1)
⇒ 1700 ÷ 1600 = P(1 + R/100) 3 ÷ P(1 + R/100)2
⇒ 17/16 = (100 + R)3 ÷ (100 + R)2
⇒ 17/16 = (100 + R)/100
⇒ 1700 = 1600 + 16R
⇒ R = 100/16 = 6.25
∴ The rate of interest is 6.25%

5. Where is the 'Zojila Tunnel Project' located?
a. Sikkim
b. Uttar Pradesh
c. Odisha
d. Jammu & Kashmir

Ans. d
Explanation:
The correct answer is Jammu & Kashmir.
Zojila Tunnel Project' located in Jammu & Kashmir.

6. In the context of computers, tracker balls is a/an _____ device.
a. output
b. input
c. storage
d. processing

Ans. b
Explanation:
The correct answer is Input.
A device that receives data for processing is called aninput device.
In the context of computers, tracker balls is an input device.

7. Solve the following.
6202.5 + 620.25 + 62.025 + 6.2025 + 0.62025 = ?
a. 6891.59675

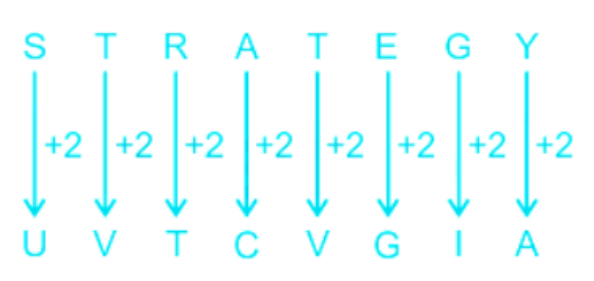
b. 6791.59775
c. 5892.59775
d. 6891.59775

Ans. d
Explanation:
Calculation:
6202.5 + 620.25 + 62.025 + 6.2025 + 0.62025
⇒ 6822.75 + 68.84775
⇒ 6891.59775
∴ The required result = 6891.59775

8. In a certain code language, VIARAIL is written as XKCTCKN. How will STRATEGY be written as in that language?
a. UVTCVGIZ
b. UWTCVGIA
c. UVTCVFIA
d. UVTCVGIA

Ans. d
Explanation:
According to the alphabetical positions of the letters,

Similarly



Hence, ‘ UVTCVGIA ’ is the correct answer.

9. In the following expression which number should be added so that it becomes a complete square?
1 + 3 + 7 + 9 + 11 + 13
a. 5
b. 7
c. 3
d. 1

Ans. a
Explanation:
Given:
1 + 3 + 7 + 9 + 11 + 13
Concept:
The sum of consecutive odd numbers is a perfect square.
Calculation:
Here, in this series, we need to add 5 in order to make it a consecutive odd numbers series.
Hence, 1 + 3 + 7 + 9 + 11 + 13 = 44
∵ 44 + 5 = 49; 49 is the square of 7
∴ The required no to be added is 5.

10. What is the full form of DHCP in networking system?
a. Dynamic Host Configuration Protocol
b. Dynamic Host Control Point
c. Data Host Control Panel
d. Display House Control Protocol

Ans. a
Explanation:
The correct answer is Dynamic Host Configuration Protocol.
DHCP is the acronym of Dynamic Host Configuration Protocol.

11. Which of the following is NOT related to Centre-State relations in India?
a. Punchhi Commission
b. Kothari Commission

c. Rajamannar Commission
d. Sarkaria Commission

Ans. b
Explanation:
Kothari Commission Is NOT correct.
Among the options, onlyKothari Commissionis NOT related to Centre-State relations in India.

12. Find the number of all prime numbers less than 55.
a. 15
b. 17
c. 18
d. 16

Ans. d
Explanation:
Calculation:
Prime numbers less than 55 = 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53
∴ The required no of prime numbers is 16

13. The down fold in a rock is known as a/an:
a. syncline
b. backline
c. crestline
d. anticline

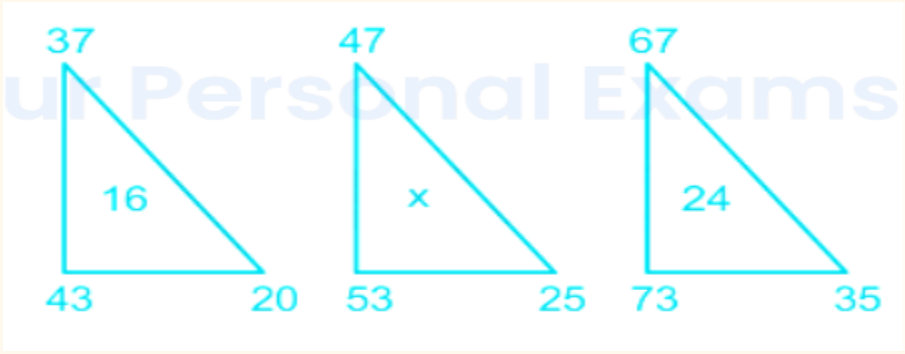
Ans. a
Explanation:
The correct answer is syncline
The downfold in a rock is known as a syncline.

14. 'Garden' is related to 'Gardner' in the same way as 'Museum' is related to '_____'.
a. Artist
b. Guide
c. Curator

d. Museology

Ans. c
Explanation:
The logic is:
A Gardener is a person who maintains and looks after a Garden.
Similarly,
Curator is a keeper or custodian of a museum or other collection.
Hence, ‘ Curator ’ is the correct answer.

15. Study the given pattern carefully and select the number from among the given options that can replace x.

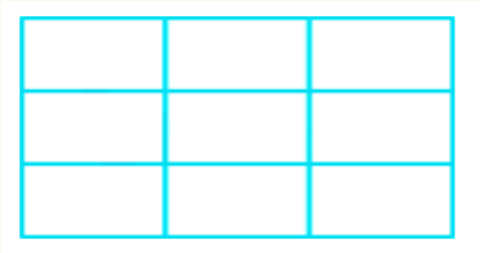


a. 18
b. 14
c. 12
d. 20

Ans. d
Explanation:
The logic follow here is:
[(top number + bottom number) ÷ right bottom number] × 4 = middle number
Figure (1) → (37 + 43) ÷ 20 = 80 ÷ 20 = 4
4 × 4 = 16
[(top number + bottom number) ÷ right bottom number] × 5 = middle number
Figure (2) → (47 + 53) ÷ 25 = 100 ÷ 25 = 4
4 × 5 = 20
[(top number + bottom number) ÷ right bottom number] × 6 = middle number
Figure (3) → (67 +73) ÷ 35 = 140 ÷ 35 = 4

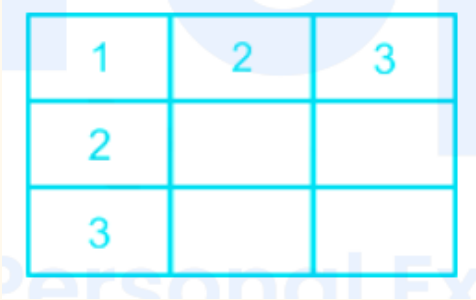
4 × 6 = 24
Hence, 20 is the correct answer.

16. How many rectangles are there in the given figure?



a. 28
b. 36
c. 32
d. 42

Ans. b
Explanation:



Number of rectangles in the given figure = (1 + 2 + 3) × (1 + 2 + 3)
= 6 × 6
= 36
Hence, ‘ 36 ’ is the correct answer.

17. One kilobyte is equal to _____ bytes.
a. 2048
b. 1024
c. 256
d. 512

Ans. b
Explanation:

The correct answer is 1024.
One kilobyte is equal to1024 bytes.

18. India's scientific mission to observe and study the solar corona is called:
a. Astrostat
b. Chandrayaan
c. Satnav
d. Aditya-L1

Ans. d
Explanation:
The correct answer is Aditya-L1.
Aditya-L1 is India's first solar mission.

19. The 2022 Commonwealth Games are scheduled to be held in:
a. Edinburg
b. Delhi
c. Perth
d. Birmingham

Ans. d
Explanation:
The correct answer is Birmingham.
The 2022 Commonwealth Games (officially known as the XXII Commonwealth Games) will be held inBirmingham, England.

20. If the difference between a number and its 25% is 24, then the number is:
a. 32
b. 34
c. 40
d. 28

Ans. a
Explanation:
Calculation:
Let the number be = y
So, y - 25/100 × y = 24

⇒ y - y/4 = 24
⇒ 3y/4 = 24
⇒ y = 24 × 4 ÷ 3 = 32
∴ The required no = 32

21. Which eminent person is associated with Bardoli?
a. Mahavir
b. Sardar Vallabhbhai Patel
c. Guru Nanak
d. Aurobindo Ghosh

Ans. b
Explanation:
The correct answer is Sardar Vallabhbhai Patel.
Sardar Vallabhbhai Patel is associated with Bardoli.

22. If mean is 40 and standard deviation is 5 then C.V (Coefficient of variation) is:
a. 20%
b. 12.5%
c. 100%
d. 5%

Ans. b
Explanation:
Given:
Mean = 40
Standard deviation = 5
Formula used:
C.V (Coefficient of variation) = Standard deviation/ Mean × 100
Calculation:
C.V = 5/40 × 100 = 12.5%
∴ C.V = 12.5%

23. Which of the following is a metalloid?
a. Silicon

b. Bromine
c. Lead
d. Gold

Ans. a
Explanation:
The correct answer is Silicon.
Silicon is a metalloid.

24. Who was the Viceroy when the Royal Commission on Civil Services was formed in 1912?
a. Lord Irwin
b. Lord Dufferin
c. Lord Curzon
d. Lord Hardinge

Ans. d
Explanation:
The correct answer is Lord Hardinge.
Lord Hardinge was the Viceroy when the Royal Commission on Civil Services was formed in 1912.

25. A metallic part of a machine is made from a mixture of copper, zinc and lead mixed in the ratio of 13 : 6 : 1. If the weight of zinc in this part is 90 kg, then the total weight of the part will be:
a. 285 kg
b. 210 kg
c. 195 kg
d. 300 kg

Ans. d
Explanation:
Given:
Copper : Zinc : Lead = 13 : 6 : 1
Quantity of zinc = 90 kg
Calculation:
Let the part of copper, zinc and lead are 13y, 6y, y

13y + 6y + y = 20y (Total)
⇒ 6y = 90kg
∴ Total weight of the machine part = 20y = 90kg/6y × 20y
⇒ 300 kg

26. Which of the following is used in plastics?
a. Krypton
b. Ammonia
c. Butane
d. Ethylene

Ans. d
Explanation:
The correct answer is Ethylene.
Ethylene is used in plastics.

27. Who wrote the great literary work 'Mricchakatika'?
a. Kalidasa
b. Shudraka
c. Harsha
d. Bhaasa

Ans. b
Explanation:
The correct answer is Shudraka.
Mṛcchakatika is a Sanskrit drama written by Shudraka.

28. Select the option that is related to the third letter-cluster in the same way as the second letter-cluster is related to the first letter-cluster.
ABCD : ZYXW :: GHIJ : ?
a. PQRS
b. TSRQ
c. LMNO
d. MLKJ

Ans. b

Explanation:
Letters of the word are coded according to the equivalent opposite letter of a particular letter of the word.

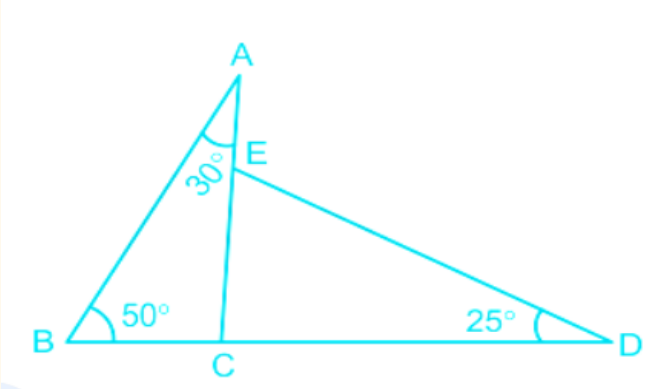
A	B	C	D
Z	Y	X	W

Similarly,

G	H	I	J
T	S	R	Q

Hence, ‘ TSRQ ’ is the correct answer.

29. In the given diagram, if ∠BAC = 30°, ∠ABC = 50° and ∠CDE = 25°, then ∠AED is equal to:



a. 115°
b. 105°
c. 75°
d. 95°

Ans. b

Explanation:
Given:
∠BAC = 30°, ∠ABC = 50° and ∠CDE = 25°
Concept:
Exterior Angle Property = An exterior angle of a triangle is equal to the sum of its two opposite non-adjacent interior angles.
Calculation:
∠ACD = ∠BAC + ∠ABC [Exterior Angle Property]
∠ACD = 30° + 50° = 80°
∠AED = ∠ACD + ∠EDC [Exterior Angle Property]
⇒ 80° + 25° = 105°
∴ ∠AED = 105°

30. Which of the following is composed of nerve fibres that mediate reflex actions and that transmit impulses to and from the brain?
a. Spinal cord
b. Heart
c. Rib cage
d. Muscles

Ans. a
Explanation:
The correct answer is Spinal cord.
Human central neural system includes the brain and the spinal cord and is the site of information processing and control.

31. Avinash, Bhuvnesh and Chaman can complete a piece of work in 20, 30 and 60 days respectively. In how many days can Avinash complete the work if he is assisted by Bhuvnesh and Chaman on every third day?
a. 15
b. 18
c. 16
d. 12

Ans. a
Explanation:

Given:
No of days Avinash takes = 20
No of days Bhuvnesh takes = 30
No of days Chaman takes = 60
Calculation:
Let the total work be the LCM of 20, 30 and 60 as being the common multiple.
LCM (20, 30, 60) = 60
Formula used:
Total work = No of days × Efficiency
Calculation:

Days	Total work	Efficiency
Avinash (20)		3
Bhuvnesh(30)	60 units	2
Chaman (60)		1

On first day Avinash will work alone and on third day Avinash will work with Bhuvnesh and Chaman.
Day 1 = Avinash = 3 units
Day 2 = Avinash = 3 units
Day 3 = Avinash + Bhuvnesh + Chaman = 3 + 2 + 1 = 6 units
Hence, Work done in 3 days = 3 + 3 + 6 = 12 units
⇒ 3 days × 5 = 12 units × 5
⇒ 15 days = 60 units
∴ The required no of days required = 15 days

32. Solve the following.
(4 + 2 - 16 ÷ 4 + 3) + {(1 + 8 × 7) ÷ 19} × [(3 + 5 - 4) + (17 - 9 × 4)] = ?
a. -40
b. -225
c. 335
d. 40

Ans. a
Explanation:
Calculation:
(4 + 2 - 16 ÷ 4 + 3) + {(1 + 8 × 7) ÷ 19} × [(3 + 5 - 4) + (17 - 9 × 4)]
⇒ (6 - 4 + 3) + {(57) ÷ 19} × [4 - 19]

⇒ 5 + 3 × (- 15)
⇒ 5 - 45 = - 40
∴ The required result = - 40

33. Which is the 29th state of India created in 2014?
a. Telangana
b. Uttarakhand
c. Jharkhand
d. Sikkim

Ans. a
Explanation:
The correct answer is Telangana.
Telangana Became the 29th state of India formed in 2014.

34. As of October 2020, who is the Chairman of the Fifteenth Finance Commission of India?
a. N. K. Singh
b. Shaktikanta Das
c. A. M. Khusro
d. Vijay L. Kelkar

Ans. a
Explanation:
The correct answer is N. K. Singh.
As of October 2020,NK Singhis the Chairman of the Fifteenth Finance Commission of India.

35. In a game Rajesh lost $\frac{1}{3}$ of his money in the first round of the game, in the second round he losses $\frac{3}{5}$of his remaining money and in the third round he lost $\frac{4}{7}$ of the rest. He is left with what part of original sum of monely?
a. $\frac{4}{15}$
b. $\frac{4}{45}$
c. $\frac{4}{35}$

d. $\frac{2}{5}$

Ans. c
Explanation:
Given:
Lost of money in the round 1 = 1/3
Lost of money in the round 2 = 3/5 of remaining money
Lost of money in the round 3 = 4/5 of the rest money
Calculation:
Let the total money Rajesh has, be the LCM of 3, 5 and 7 just for the convenience of the calculation.
LCM (3, 5, 7) = 105
Hence, let the total money Rajesh has = 105
Money he lost in round 1 = 105 × 1/3 = 35
⇒ Remaining money after round 1 = 105 - 35 = 70
Money he lost in round 2 = 70 × 3/5 = 42
⇒ Remaining money after round 2 = 70 - 42 = 28
Money he lost in round 3 = 28 × 4/7 = 16
Now, rest of the money Rajesh has = 28 - 16 = 12
∴ The fraction of money he is left with to the original money = 12/105 = 4/35

36. $(x - y)^3 + (y - z)^3 + (z - x)^3$ = ?
a. 3xyz
b. 3(x - y)(y - z)(z - x)
c. (x + y + z)(x
d. (x - y)(y - z)(z - x)

Ans. b
Explanation:
Concept:
If a + b + c = 0, then a3 + b3 + c3 - 3abc = 0
Calculation:
Let (x - y) = a; (y - z) = b; (z - x) = c
∵ a + b + c = x - y + y - z + z - x = 0
∴ (x - y) 3 + (y - z) 3 + (z - x) 3 = 3(x - y)(y - z)(z - x)

37. Which of the following is situated in Jammu and Kashmir?
a. Pakhal Wildlife Sanctuary
b. Dachigam National Park
c. Jaldapara National Park
d. Balpakram National Park

Ans. b
Explanation:
The correct answer is Dachigam National Park.
Key Points
Dachigam National Park is located in Srinagar,Jammu and Kashmir.

38. The Big Bang theory was propounded by:
a. Thomas Gold
b. Al-Biruni
c. Dr. Allen Sundes
d. George Lamaitre

Ans. d
Explanation:
The correct answer is George Lamaitre.
The Big Bang theory was propounded by George Lamaitre.

39. In which year did the disinvestment process in Public Sector Enterprises in India start?
a. 2018
b. 2000
c. 1990
d. 1991

Ans. d
Explanation:
The correct answer is 1991.
The disinvestment process in Public Sector Enterprises in India started in1991.

40. If 3 men or 6 boys can complete a task in 20 days, how many days will 6 men and 8 boys take to do the same task?

a. 15
b. 16
c. 10
d. 6

Ans. d
Explanation:
Given:
3 men = 6 boys
6 boys can complete the task in 20 days
Formula used:
Total work = No of people × No of days
Calculation:
1 men = 6/3 boys = 2 boys
⇒ 6 men = 2 × 6 boys = 12 boys
Now, total boys will be (12) + 8 = 20
6 boys can finish a work in 20 days.
∴ 20 boys can complete the work in (20 × 6) ÷ 20 = 6 days

41. Number 0.232323 can be written in rational form as:
a. $\frac{23}{999}$
b. $\frac{23}{99}$
c. $\frac{23}{990}$
d. $\frac{23}{9}$

Ans. b
Explanation:
Given:
0.232323
Calculation:
Let y = 0.232323 (1)
By multiplying y by 100
100y = 23.232323 (2)
(2) - (1)
⇒ 100y - y = 23.232323 - 0.232323

⇒ 99y = 23
⇒ y = 23/99
∴ 0.232323 = 23/99

42. The given table shows the number of formal learners, informal learners and illiterates, on the basis of gender, in the age group of 18-30 years in village X near Delhi. Determine the ratio among the formal learners, informal learners and illiterates.

Formal Learners	Boys	39
	Girls	52
Informal Learners	Boys	65
	Girls	78
Illiterates	Boys	143
	Girls	169

a. 7 : 11 : 24
b. 7 : 24 : 11
c. 11 : 24 : 7
d. 11 : 7 : 24

Ans. a
Explanation:
Calculation:
No of formal learners = 39 + 52 = 91
No of informal learners = 65 + 78 = 143
No of illiterates = 143 + 169 = 312
∴ The required ratio = 91 : 143 : 312
⇒ 7 : 11 : 24

43. India's longest road-cum-rail bridge, connecting Assam and Arunachal Pradesh, is called the:
a. Pamban Bridge

b. Bogibeel Bridge
c. Howrah Bridge
d. Godavari Bridge

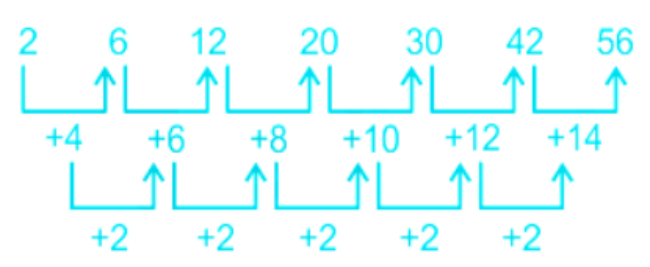
Ans. b
Explanation:
The correct answer is Bogibeel Bridge.
Bogibeel bridge connects Dibrugarh in Assam to Pasighat in Arunachal Pradesh.

44. The 'SATH-E' project is associated with which of the following fields?
a. Education
b. Agriculture
c. Transportation
d. Communication

Ans. a
Explanation:
The correct answer is Education.
Project SATH-E is the acronym of ‘Sustainable Action for Transforming Human Capital-Education’.Project SATH-E is associated with education.

45. Select the number from among the given options that can replace the question mark (?) in the following series.
2, 6, 12, 20, 30, 42, ?
a. 50
b. 52
c. 60
d. 56

Ans. d
Explanation:
The logic is:



Hence, ‘ 56 ’ is the correct answer.

46. Which of the following welfare schemes' achievements have been recongnised by the Guiness World Records?
a. Pradhan Mantri Kaushal Vikas Yojana
b. Pradhan Mantri Jan Dhan Yojana
c. Pradhan Mantri Suraksha Bima Yojana
d. Pradhan Mantri Krishi Sinchai Yojana

Ans. b
Explanation:
The correct answer is Pradhan Mantri Jan Dhan Yojana.
Pradhan Mantri Jan Dhan Yojana entered into the Guinness Book of World Records in 2015.

47. Who founded the 'Slave Dynasty'?
a. Nasir-ud-din Mahmud
b. Razia Sultan
c. Qutb-ud-din Aibak
d. Ghiyas-ud-din Balban

Ans. c
Explanation:
The correct answer is Qutb-ud-din Aibak.
The Slave dynasty was founded byQuṭb al-Dīn Aibak.

48. Which state does NOT have a Vidhan Parishad (Legislative Council)?
a. Karnataka
b. Maharashtra
c. Kerala
d. Telangana

Ans. c
Explanation:
Kerala is NOT correct.
Among the options, Keraladoes NOT have a Vidhan Parishad.

49. Which of the following is a satellite based augmentation system of India?
a. GAGAN SHAKTI
b. NAG
c. GAGAN
d. JATAN

Ans. c
Explanation:
The correct answer is GAGAN.
GAGAN is a satellite-based augmentation system in India.

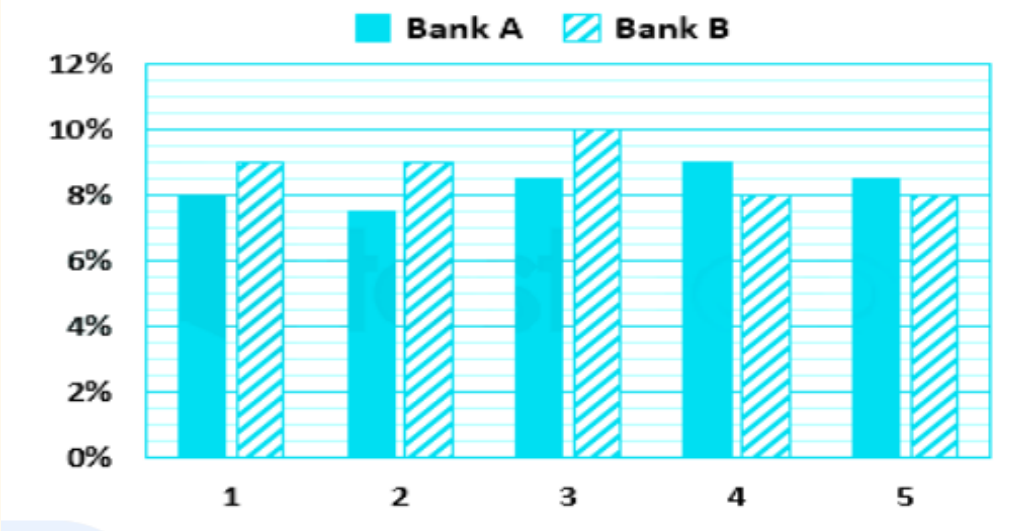
50. 'Obey' is related to 'Disobey' in the same way as 'Appoint' is related to '_____'.
a. Dissent
b. Eliminate
c. Disappear
d. Dismiss

Ans. d
Explanation:
The logic is:
Obey is the antonym of Disobey.
Similarly,
Appoint is the antonym of Dismiss.
Hence, ‘ Dismiss ’ is the correct answer.

51. Value of cos 1° cos 2° cos 3° .....cos 179° is:
a. 0
b. 1
c. $\frac{1}{2}$
d. -1

Ans. a
Explanation:
Calculation:
cos 1° cos 2° cos 3° .....cos 179°
∵ cos 90° = 0
⇒ cos 1° cos 2° cos 3° .....cos 179°
⇒ cos 1° cos 2° cos 3° .....cos 90° cos 179°
⇒ cos 1° cos 2° cos 3° ..... 0 × cos 179° = 0
∴ cos 1° cos 2° cos 3° .....cos 179° = 0

52. The given chart gives interest rates offered on deposits by two banks A and B for a period of 5 years (1-5). What would be the difference in interest amount earned in year 3, if a person had deposited Rs. 23 lakhs at the beginning of the year in bank B instead of in bank A?



a. Rs. 34,500
b. Rs. 28,800
c. Rs. 37,600
d. Rs. 41,200

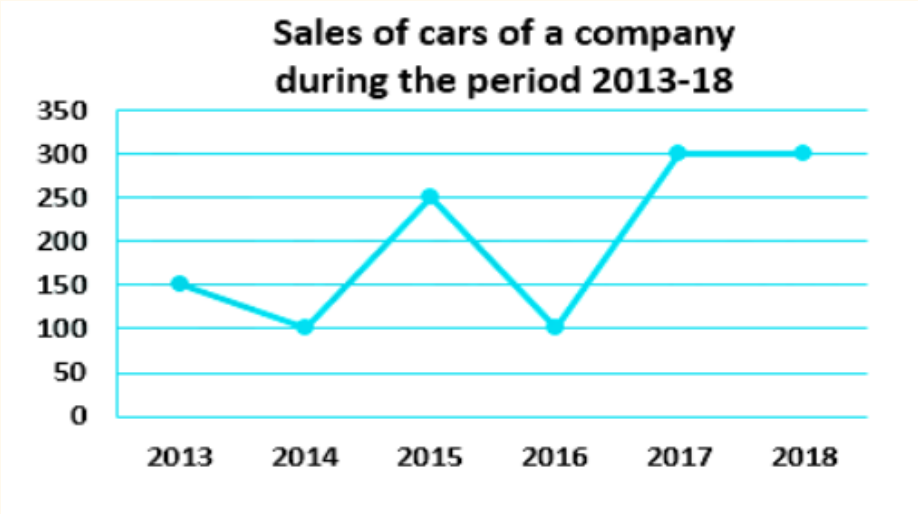
Ans. a
Explanation:
Given:
Investment = Rs.23 lakhs
Interest rate for year 3 in bank A = 8.5%

Interest rate for year 3 in bank B = 10%
Calculation:
Difference of rate interest in bank B and A = 10% - 8.5% = 1.5%
∴ Required interest = 2300000 × 1.5% = Rs.34500

53. The Bering Strait connects the:
a. Atlantic Ocean and Gulf of Hudson
b. Indian Ocean and Java Sea
c. Mediterranean Sea and Atlantic Ocean
d. Arctic ocean and Pacific Ocean

Ans. d
Explanation:
The correct answer is Arctic ocean and Pacific Ocean.
The Bering Strait is a strait that connects thePacific and Arctic oceans.

54. From the given diagram, determine the difference between the total number of cars sold in the first three years and in the last three years.



a. 1200
b. 150
c. 200
d. 700

Ans. c
Explanation:

Calculation:
Sum of the total no of cars sold in the first 3 years = 150 + 100 + 250 = 500
Sum of the total no of cars sold in the last 3 years = 100 + 300 + 300 = 700
∴ The required difference = 700 - 500 = 200

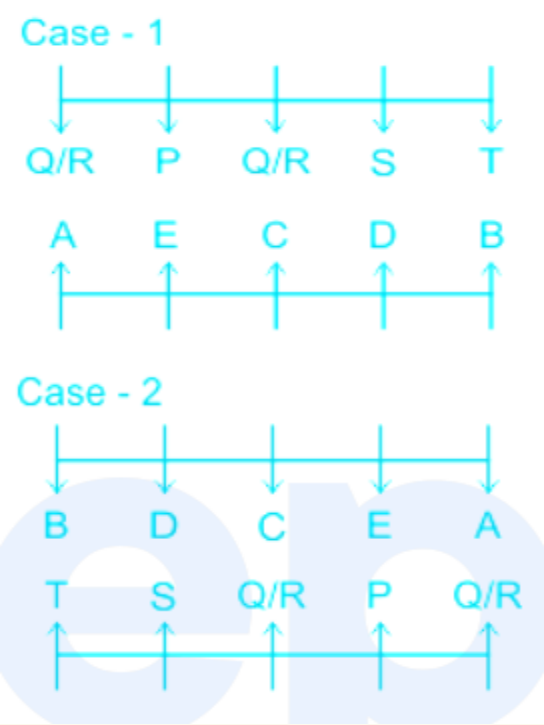
55. On the first day 84500 people visited a trade fair. On the 4th day number reduced to 16900. By what percentage people reduced on the 4th day?
a. 0%
b. 75%
c. 80%
d. 20%

Ans. c
Explanation:
Given:
No of visitors on day 1 = 84500
No of visitors on day 4 = 16900
Calculation:
Reduce in number of visitors = 84500 - 16900 = 67600
∴ The required reduce percentage = 67600 ÷ 84500 × 100 = 80%

56. Five boys A, B, C, D and E and five girls P, Q, R, S and T are sitting in two rows opposite each other such that the boys are in one row and the girls are in one row. C is sitting in the center and A is sitting on his left. D is sitting between B and C. T who is to the immediate left of S is sitting opposite B who is three seats away from E. P is sitting between Q and R. Who is sitting opposite E?
a. R
b. Q
c. S
d. P

Ans. d
Explanation:
Five boys - A, B, C, D and E
five girls - P, Q, R, S and T are sitting in two rows opposite each other such that the boys are in one row and the girls are in one row.

1. C is sitting in the center and A is sitting on his left.
2. D is sitting between B and C.
3. T who is to the immediate left of S is sitting opposite B who is three seats away from E.
4. P is sitting between Q and R.



Therefore, P sits opposite E.
Hence, ‘P’ is the correct answer.

57. Lord Mahavira's original name is _____.
a. Ananda
b. Siddhartha
c. Sariputta
d. Vardhamana

Ans. d
Explanation:
The correct answer is Vardhamana.
Vardhamanais the original name of Lord Mahavira.

58. The value of cos 12° + cos 84° + cos 168° + cos 96° is:
a. 0.5
b. 1
c. 0
d. -1

Ans. c
Explanation:
Given:
cos 12° + cos 84° + cos 168° + cos 96°
Formulas used:
cos A + cos B = 2 cos (A + B)/2 . cos (A - B)/2
Cos A + cos (180° - A) = 0
Calculation:
(cos 12° + cos 96°) + (cos 84° + cos 168°)
⇒ 2 cos 54°. cos 42° + 2 cos 126°. cos 42°
⇒ 2 cos 42°(cos 54° + cos 126°)
⇒ 2 cos 42° × 0
⇒ 0
∴ The required result is 0

59. Value of the square root of $\frac{36.1}{102.4}$ is:

a. $\frac{61}{340}$
b. $\frac{19}{34}$
c. $\frac{19}{32}$
d. $\frac{19}{31}$

Ans. c
Explanation:
Given:
$\frac{36.1}{102.4}$
Calculation:
√36.1/102.4 = √361/1024

⇒ $\sqrt{19^2}$
/32^2
⇒ 19/32
∴ √36.1/102.4 = 19/32

60. Invertebrates do NOT include:
a. molluscs
b. reptiles
c. arachnids
d. insects

Ans. b
Explanation:
Reptilesis NOT correct.
Among the options, only reptiles do NOT include Invertebrates.

61. The Nipah virus outbreak in 2018 took place in:
a. Kerala
b. Uttar Pradesh
c. Karnataka
d. Tamil Nadu

Ans. a
Explanation:
The correct answer is Kerala.
Nipah virus disease (NiV) outbreak was reported from Kozhikode district of Kerala on 19 May 2018.

62. A shopkeeper sold two toys for Rs. 990 each. On the first toy he gained 10% and on the second he lost 10%. Find the total percentage gain or loss.
a. 10% Loss
b. 10% Gain
c. 1% Loss
d. 1% Gain

Ans. c
Explanation:

Given:
Selling price of two toys = Rs.990 each
Increase/ Decrease % = 10%
Formula used:
Loss % = (CP - SP)× 100/CP
SP(selling price) = Cost Price(CP)× (100 + Profit%)/100
SP = CP(100 - loss%)/100
Calculation:
Total SP of both toy is = 990 + 990
⇒ Rs. 1980
CP of the first toy he gained 10%
⇒ 990 × 100/(100 + 10)
⇒ Rs. 900
CP of the second toy he loss 10%
⇒ 990 × (100)/(100 - 10)
⇒ Rs. 1100
Total CP = 900 + 1100
⇒ Rs. 2000
Loss = CP > SP
Loss% = (2000 - 1980)× 100/2000
⇒ 1%
∴ Loss percent = 1%

63. The base of an isosceles triangle in 8 cm and one of its equal sides is 5 cm. The height of the vertex opposite to the base from the base is:
a. 3 cm
b. 4 cm
c. 2 cm
d. 5 cm

Ans. a
Explanation:
Given:
Base of isosceles triangle = 8 cm
One of the equal sides = 5 cm
Formula used:
Area of triangle = 1/2 × base × Height

Area of triangle (Heron's Formula) = √ s(s - a)(s - b)(s - c)
s = (a + b + c) ÷ 2
Sides of the triangle = a, b, c
Calculation:
s = (8 + 5 + 5) ÷ 2 = 9
1/2 × 8 × Height = √ 9(9 - 8)(9 - 5)(9 - 5)
⇒ 4 × Height = 3 × 4
⇒ Height = 3 cm
∴ The height of the vertex oppsote to the base = 3 cm

64. Sunila had $9\frac{1}{4}$kg of flour to make bread with. If the recipe says that she needs$1\frac{1}{8}$ kg to make one loaf of bread, how many loads can she make? Estimate to the nearest whole number.
a. 7
b. 10
c. 9
d. 8

Ans. d
Explanation:
Given:
Quantity of flour Sunila has =
Quantity of flour needed to make one loaf =
Calculation:
No of the loaves to be made = Quantity of flour available ÷ Quantity needed for one loaf
⇒$9\frac{1}{4} \div 1\frac{1}{8}$ = 37/4 ÷ 9/8
⇒ 37/4 × 8/9
⇒ 8.2
∴ Required no of loaves (nearest to the whole no) = 8

65. Who is the author of the book 'Republic'?
a. Leo Tolstoy
b. John Ruskin
c. Plato
d. TS Eliot

Ans. c
Explanation:
The correct answer is Plato.
Plato is known for his work " the Republic ".

66. Which of the following is an ancient Buddhist text?
a. Vishnu Purana
b. Raghuvamsam
c. Ritusamhara
d. Abhidharma kosha

Ans. d
Explanation:
The correct answer is Abhidharma kosha.
Abhidharma kosha is an ancient Buddhist text on Abhidharma from the 4th or 5th century CE.

67. If '+' is replaced by '-', '×' is replaced by '+' and '-' by '×'. then 28 + (5 × 7) $-\frac{9}{6}$ will be equal to:
a. 15
b. 10
c. 20
d. 8

Ans. b
Explanation:
28 + (5 × 7) −96
After replacing the symbols by their meaning, we get:
28 - (5 + 7) × 9/6
= 28 - 12 × 9/6
= 28 - 18
= 10
Hence, ‘ 10 ’ is the correct answer.

68. What is the smallest number which when increased by 3 is divisible by 27, 35, 25 and 21?
a. 4722

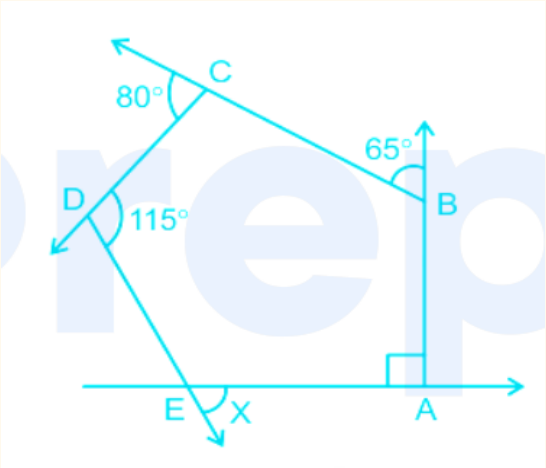
b. 317
c. 4725
d. 4728

Ans. a
Explanation:
Calculation:
LCM of 27, 35, 25 and 21 = 4725
∴ The smallest no which when increased by 3 is 27, 35, 25 & 21 = 4725 - 3 = 4722

69. The sum of two numbers is 20 and their difference is 2.5. Ratio of these numbers will be:
a. 7 : 9
b. 9 : 7
c. 3 : 5
d. 2 : 7

Ans. b
Explanation:
Given:
Sum of two numbers = 20
Difference of two numbers = 2.5
Concept:
C omponendo and dividendo: It states that if a/b = c/d, then a + b/a - b = c + d/c - d
Calculation:
Let the two numbers = a & b
a + b = 20 (1)
a - b = 2.5 (2)
By (1) ÷ (2)
(a + b) / (a - b) = 20/2.5 = 8/1
By c omponendo and dividendo:-
(a + b) + (a - b)/ (a + b) - (a - b) = 8 + 1/ 8 - 1
⇒ 2a/2b = 9/7
⇒ a/b = 9/7
∴ The required ratio = 9 : 7

70.



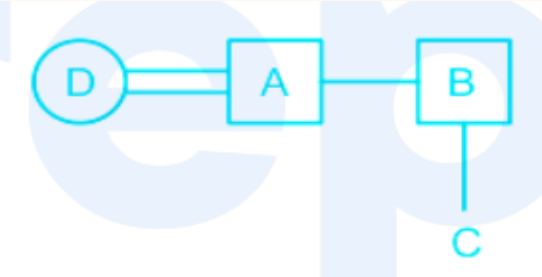
In the given figure, value of x is:
a. 70°
b. 60°
c. 55°
d. 65°

Ans. b
Explanation:
Formula used:
The sum of the angle of a pentagon = (n - 2) × 180°
Calculation:
Sum of the angles of pentagon ABCDE = (5 - 2) × 180° = 540°
∠BCD = 180° - 80° = 100° (Linear pair)
∠CBA = 180° - 65° = 115°
∠BAE = 90° [Given]
∠DEA = 540° - 100° - 115° - 90° - 115° = 120°
∴ ∠x = 180° - 120° = 60° [Linear pair]

71. If A is the brother of B, B is the father of C and D is the wife of A, then how is D related to C?
a. Niece
b. Aunt
c. Uncle
d. Nephew

Ans. b

Explanation:



Clearly, D is aunt of C.
Hence, ‘ Aunt ’ is the correct answer

72. Four natural resources are listed, out of which three are alike in some manner and one is different. Select the odd one.
a. Water
b. Coal
c. Solar
d. Wind

Ans. b
Explanation:
The description is as follows:

Option	Description
1. Water	Water is a renewable resource.
2. Coal	Coal is a non-renewable resource.
3. Solar	Solar energy is a renewable resource.
4. Wind	Wind energy is a renewable resource.

Hence, ‘ coal ’ is the odd one out.

73. Which of the following is NOT an abiotic component?
a. Water
b. Green plant
c. Sunlight
d. Soil

Ans. b
Explanation:
Green plant is NOT correct.

Among the options, Onlygreen plant is NOT an abiotic component.

74. Parshotam and Anjilka moving in the opposite directions from the same place at a speed of 30 km/h and 3.5 km/h respectively. How far will they be from each other after 2.5 h?
a. 8.75 km
b. 66.25 km
c. 83.75 km
d. 75 km

Ans. c
Explanation:
Given:
Speed of Parshotam = 30 km/h
Speed of Anjika = 3.5 km/h
Formula used:
Distance = Speed × Time
Calculation:
While going in opposite directions;
Distance covered by Parshotam in 2.5 hours = 30 km/h × 2.5 hours = 75 km
Distance covered by Anjika in 2.5 hours = 3.5 km/h × 2.5 hours = 8.75 km
∴ Distance between Parshotam and Anjika after 2.5 hours = 75 km + 8.75 = 83.75 km

75. Solve the following.

$$\left[\frac{\left(1+4-\frac{42}{14}+65\right)+\left\{\frac{(2+7\times9)}{13}\right\}\times[(65+7-19)]+(19-39\times5)}{369}\right]=?$$

a. -52/123
b. -25/123
c. 52/123
d. 224

Ans. c
Explanation:
Calculation:

$$\left[\frac{\left(1+4-\frac{42}{14}+65\right)+\left\{\frac{(2+7\times9)}{13}\right\}\times[(65+7-19)]+(19-39\times5)}{369}\right]$$

⇒ [(5 - 3 + 65) + {65 ÷ 13} × [(53)] + (- 176)] ÷ 369
[369
(1+4− +65 +{ }×[(65+7−19)]+(19−39×5) 14
42) 13
(2+7×9)
]
⇒ [67 + 5 × 53 - 176] ÷ 369
⇒ [67 + 265 - 176] ÷ 369
⇒ [332 - 176] ÷ 369
⇒ 156 ÷ 369
⇒ 52/123
∴ The required result = 52/123
NOTE: The correct option of the above question was wrongly entered in the exam paper, which has been edited.

76. Which is India's first ever Innovative advanced Earth Observation Satellite launched in 2018?
a. HysIS
b. GSAT-2
c. APPLE
d. GSAT-7

Ans. a
Explanation:
The correct answer is HysIS.
HysIS is India's first-ever Innovative advanced Earth Observation Satellite.

77. Two dice are thrown simultaneously and the sum of the numbers appearing on them is noted. What is the probability that the sum is 12?
a. $\frac{1}{36}$
b. 3
c. 36
d. $\frac{12}{36}$

Ans. a
Explanation:
Given:
No of possible outcomes when two dice are thrown simultaneously: 6 × 6 = 36
(1,1), (1, 2), (1, 3), (1, 4), (1, 5), (1, 6)
(2, 1), (2, 2), (2, 3), (2, 4), (2, 5), (2, 6)
(3, 1), (3, 2), (3, 3), (3, 4), (3, 5), (3, 6)
(4, 1), (4, 2), (4, 3), (4, 4), (4, 5), (4, 6)
(5, 1), (5, 2), (5, 3), (5, 4), (5, 5), (5, 6)
(6, 1), (6, 2), (6, 3), (6, 4), (6, 5), (6, 6)
Formula used:
Probability = No of favorable outcome ÷ No of total outcomes
Calculation:
No of outcome with sum 12 (6, 6) = 1
∴ Required probability = 1/36

78. Who was the founder of the Vishishtadvaita philosophy?
a. Vishnu Swami
b. Madhvacharya
c. Ramanujacharya
d. Nimbarka

Ans. c
Explanation:
The correct answer is Ramanujacharya.
Ramanujacharyais considered the founder of the Vishishtadvaita philosophy.

79. 'Operation Greens' is a government scheme for:
a. development of bamboo crops
b. Supply stabilization of TOP crops (Tomato Onion Potato)
c. research and investment in crop education
d. general price levels of crops

Ans. b
Explanation:
The correct answer is Supply stabilization of TOP crops (Tomato Onion Potato).
'Operation Greens' was a scheme formulated for the integrated development of the Tomato,

Onion and Potato (TOP) value chain.

80. Which of the following is the assumption for the claim that 'Pleasure is desirable'?
a. Everyone desires pleasure.
b. Some persons desire pleasure.
c. Everyone desires something.
d. Pleasure is essential.

Ans. a
Explanation:
From option 1 - The best assumption for the claim that 'Pleasure is desirable' is everyone desires pleasure. So it is correct assumption.
From option 2 - The assumption some persons desire pleasure is not correct for the claim that 'Pleasure is desirable'. So it is not correct assumption.
From option 3 - The assumption everyone desires something is not correct for the claim that 'Pleasure is desirable'. So it is not correct assumption.
From option 4 - The assumption pleasure is essential is not correct for the claim that 'Pleasure is desirable'. So it is not correct assumption.
Hence, "option 1" is the correct answer.

81. Which is the first nuclear reactor made in India?
a. KAMINI
b. CIRUS
c. Apsara
d. Dhruva

Ans. c
Explanation:
The correct answer is Apsara.
Apsara is the first nuclear reactor made in India.

82. Which of the following is the administrative capital of South Africa?
a. Durban
b. Cape Town
c. Pretoria
d. Bloemfontein

Ans. c
Explanation:
The correct answer is Pretoria.
Pretoria is the administrative capital of South Africa.

83. Where are the headquarters of the OECD is located?
a. Rome
b. Paris
c. New York
d. Geneva

Ans. b
Explanation:
The correct answer is Paris.
The headquarters of the OECD is located in Paris in France.

84. Which of the following is NOT classified under Kingdom Animalia?
a. Metazoa
b. Protozoa
c. Choanozoa
d. Pipiens

Ans. b
Explanation:
Correct Ans. 2)
Concept:
The living organisms are divided into five different kingdoms namely: Monera (Unicellular, Prokaryotic), Protista (Unicellular, eukaryotes), Fungi (unicellular as well as multicellular, eukaryotes), Plantae (Multicellular, eukaryotic), and Animalia (Multicellular, eukaryotic).
Members of Protista are Chrysophytes, Dinoflagellates, Euglenoids, Slime moulds, and Protozoans under Protista.
Explanation:
Option 1:
Protozoans are unicellular, eukaryotic organisms.
They are believed to be primitive relatives of animals.
Earlier, protozoans were regarded as "one-celled animals", because they often

possess animal-like behaviors, such as motility and predation.
In the classical system, they were placed in the kingdom Animalia but later Ernst Haeckel proposed a third kingdom of life, which he named Protista.
Ernst Haekel included eukaryotes that are not animals, plants, or fungi and adopt a heterotrophic mode of nutrition.
Option 2:
Metazoa is classified under Kingdom Animalia.
All multicellular animals besides sponges are metazoans .
Metazoan animals are heterotrophic in nature.
Option 3:
Choanozoa is classified under Kingdom Animalia.
These are funnel-shaped animals.
Option 4:
Pipiens are classified under phylum Arthropoda, Kingdom Animalia.
Culex pipiens, commonly referred to as the common house mosquito, is a species of mosquito.
So, the correct answer is option 2.

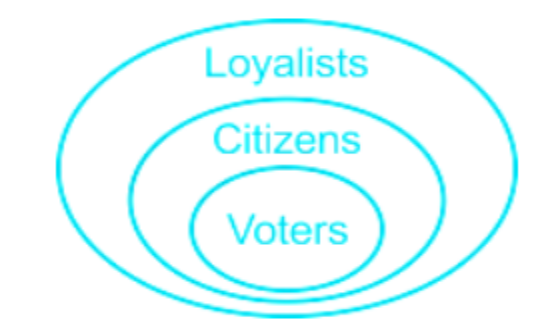
85. By selling an article for Rs.138, a shopkeeper losses 8%. At what price should the article be sold to get a gain of 4%?
a. Rs. 90
b. Rs. 210
c. Rs. 144
d. Rs. 156

Ans. d
Explanation:
Given:
Selling Price = Rs.138
Loss percent = 8%
Formula used:
Loss percent = (CP - SP) ÷ CP × 100
Selling Price = Cost Price × (100 + profit)%
Calculation:
Loss % = (CP - 138) ÷ CP × 100
⇒ 8 = (CP - 138) ÷ CP × 100
⇒ 2× CP = 25 × CP - 138 × 25

⇒ 23CP = 138 × 25
⇒ CP = 138 × 25 ÷ 23 = 150
At profit = 4%
⇒ Selling Price = 150 × 104/100 = 156
∴ The required selling price = Rs.156

86. The conclusion that follows from the premises 'All voters are citizens' and 'All citizens are loyalists' is:
a. All voters are loyalists.
b. All citizens are voters.
c. All loyalists are citizens.
d. All loyalists are voters.

Ans. a
Explanation:
The least possible Venn diagram is:



1. All voters are loyalists. → True (As, 'All voters are citizens' and 'All citizens are loyalists' → All voters are loyalists)
2. All citizens are voters. → False (As, 'All voters are citizens' and 'All citizens are loyalists' → Some citizens are voters)
3. All loyalists are citizens. → False (As, 'All voters are citizens' and 'All citizens are loyalists' → Some loyalists are citizens)
4. All loyalists are voters. → False (As, 'All voters are citizens' and 'All citizens are loyalists' → Some loyalists are voters)

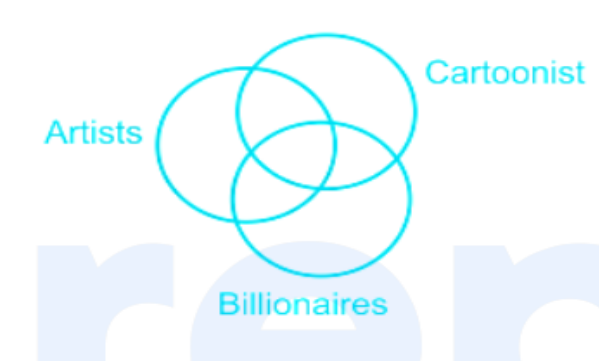
Hence, ‘ All voters are loyalists ’ is the correct answer.

87. 'Little knowledge is a dangerous thing' is a decision based on:
a. Ignorance is bliss.
b. Informal learning is not satisfactory.

c. Little things are dangerous.
d. Incomplete information may cause harm.

Ans. d
Explanation:
The statement is 'Little knowledge is a dangerous thing' is a decision based onFrom option 1- Ignorance is bliss is not best decision of the sentence. So it is not follow.
From option 2 - Informal learning is not satisfactory is not best decision of the sentence. So it is not follow.
From option 3 - Little things are dangerous is not best decision of the sentence. So it is not follow.
From option 4 - Incomplete information may cause harm is the best decision of the sentence. So it is follow.
Hence, "option 4" is the correct answer.

88. In the given Venn diagram, assuming that the shaded areas do not exist, determine which conclusion can be validity drawn?



a. All cartoonists are artists.
b. No artists are billionaires.
c. All artists are cartoonists.
d. Some billionaires are cartoonists.

Ans. d
Explanation:
1. All cartoonists are artists. → Invalid (As, the entire region of Artists and Cartoonists do not intersect)
2. No artists are billionaires. → Invalid (As the intersection of artists and billionaires is not shaded, which implies some artists are billionaires)

3. All artists are cartoonists. → Invalid (As, the entire region of Artists and Cartoonists do not intersect)
4. Some billionaires are cartoonists. → Valid (As, the intersection region of billionaires and cartoonists is not shaded)
Hence, ' Some billionaires are cartoonists ' is the correct answer.

89. Which of the following is a mirror image of the word ENCOURAGEMENT?

a. ENCOURAGEMENT

b. ENCOURAGEMENT

c. ENCOURAGEMENT

d. ENCOURAGEMENT

Ans. a
Explanation:
The mirror image of the word ENCOURAGEMENT is shown below:

Hence, ‘ option 1 ’ is the correct answer.

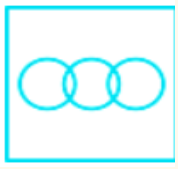
90. In a certain code language, PENINSULA is written as 111. How will DICHOTOMY be written as in that language?
a. 212
b. 121
c. 112
d. 222

Ans. c
Explanation:
The pattern followed here is:
According to the alphabetical positions of the letters,

PENINSULA → P (16) + E (5) + N (14) + I (9) + N (14) + S (19) + U (21) + L (12) + A (1) = 16 + 5 + 14 + 9 + 14 + 19 + 21 + 12 + 1 = 111
Similarly,
DICHOTOMY → D (4) + I (9) + C (3) + H (8) + O (15) + T (20) + O (15) + M (13) + Y (25) = 4 + 9 + 3 + 8 + 15 + 20 + 15 + 13 + 25 = 112
Hence, ‘ 112 ’ is the correct answer.

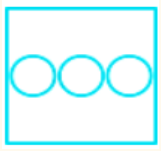
91. Select the number from among the given options that can replace the question mark (?) in the following series.
1, 9, 25, 49, 81, ?
a. 91
b. 111
c. 121
d. 94

Ans. c
Explanation:
The logic is:
$1^2 = 1$
$3^2 = 9$
$5^2 = 25$
$7^2 = 49$
$9^2 = 81$
$11^2 = 121$
Hence, ‘ 121 ’ is the correct answer.

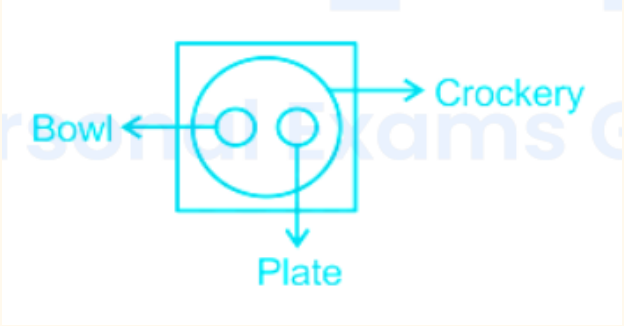
92. Select the Venn diagram that best represents the relationship between the following classes.
Crockery, Plate, Bowl
a. 

b. 

c. 

d. 

Ans. c
Explanation:
The Venn diagram that best represents the relationship between Crockery, Plate, and Bowl is shown below:



Bowl and Plate are name of Crockery items.
Hence, ‘ option 3 ’ is the correct answer.

93. Select the option that is related to the third letter-cluster in the same way as the second letter-cluster is related to the first letter-cluster.
AEJ : ZVQ :: BFK : ?
a. YUP
b. CGK
c. LPT
d. TPL

Ans. a
Explanation:

According to the alphabetical positions of the letters
The pattern followed here is:
Letters are coded with equivalent opposite letters.

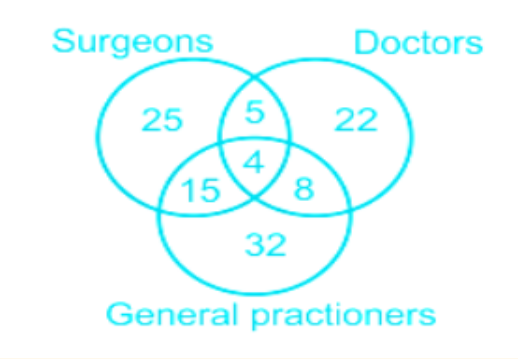
A	E	J
Z	V	Q

Similarly,

B	F	K
Y	U	P

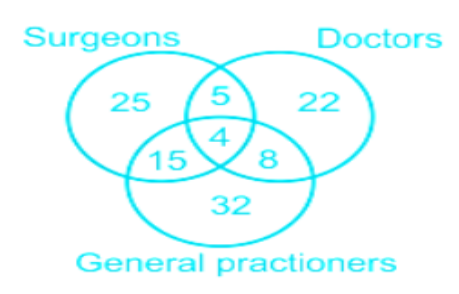
Hence, ‘ YUP ’ is the correct answer.

94. From the given Venn diagram, find the number of doctors who are surgeons but not general practitioners.



a. 8
b. 9
c. 4
d. 5

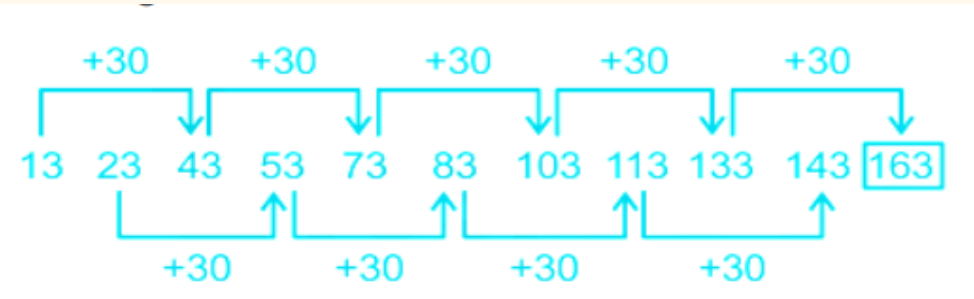
Ans. d
Explanation:
In the given Venn diagram, the number of doctors who are surgeons but not general practitioners is shown below:



Hence, ‘ 5’ is the correct answer.

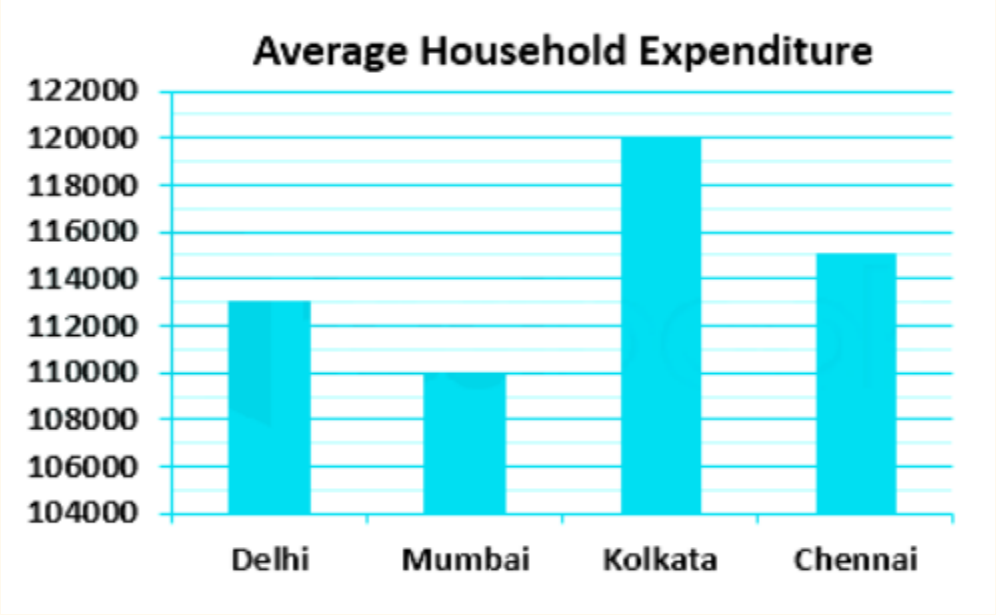
95. Select the number from among the given options that can replace the question mark (?) in the following series.
13, 23, 43, 53, 73, 83, 103, 113, 133, 143, ?
a. 183
b. 163
c. 153
d. 173

Ans. b
Explanation:
The logic is as follows:



Hence, the missing term is 163.

96. The average household expenditure in four metros Delhi, Mumbai, Kolkata and Chennai is given in the graph. What is the ratio of the highest average household expenditure to the lowest average household expenditure?

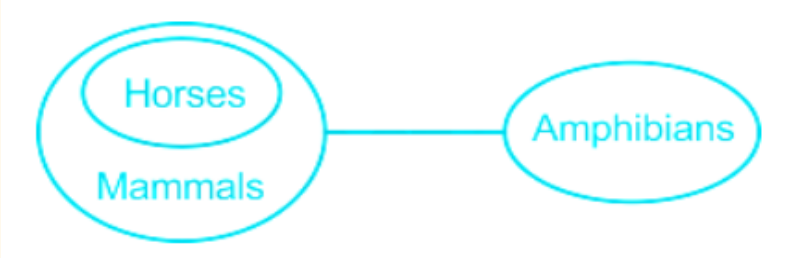


a. 12 : 11
b. 23 : 11
c. 11 : 12
d. 11 : 23

Ans. a
Explanation:
Given:
Highest average household expenditure (Kolkata) = 120000
Lowest average household expenditure (Mumbai) = 110000
Calculation:
∴ The required ratio = 120000 : 110000 = 12 : 11

97. The conclusion that follows from the premises 'All horses are mammals' and No mammals are amphibians' is:
a. Some horses are amphibians.
b. All horses are amphibians.
c. Every amphibian is a horse.
d. No amphibians are horses.

Ans. d
Explanation:
The least possible Venn diagram is:



Conclusions:
1. Some horses are amphibians. → False (As, All horses are mammals and No mammals are amphibians → No horses are amphibians)
2. All horses are amphibians. → False (As, All horses are mammals and No mammals are amphibians → No horses are amphibians)
3. Every amphibian is a horse. → False (As, All horses are mammals and No mammals are amphibians → No horses are amphibians)
4. No amphibians are horses. → True (As, All horses are mammals and No mammals are amphibians → No amphibians are horses)
Hence, ' option 4 ' is the correct answer.

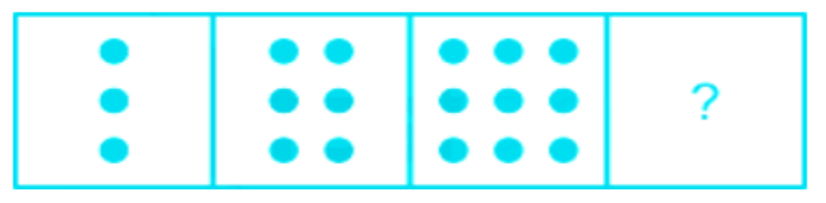
98. Four equipment are listed, out of which three are alike in some manner and one is different. Select the odd one.
a. Compass
b. Beaker
c. Test Tube
d. Dropper

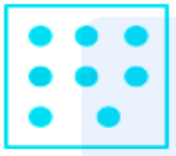
Ans. a
Explanation:
The description is as follows:
1. Compass
an instrument for drawing circles and arcs and measuring distances between points, consisting of two arms linked by a movable joint, one arm ending in a point and the other usually carrying a pencil or pen.
2. Beaker a lipped cylindrical glass container for laboratory use.
3.TestTube
a thin glass tube closed at one end, used to hold small amounts of material for laboratory testing or experiments.

4. Dropper
a short glass tube with a rubber bulb at one end and a tiny hole at the other, for measuring out drops of medicine or other liquids for laboratory use.

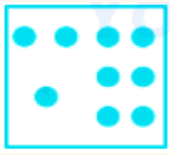
Hence, ‘ Compass ’ is the odd one out.

99. Study the given pattern carefully and select the image from among the given options that can replace the question mark (?).



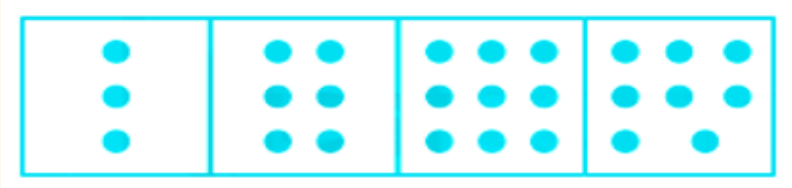
a. 

b. 

c. 

d. 

Ans. a
Explanation:
The image from among the given options that can replace the question mark (?) is shown below:



Roman Numerals:
I → 1
II → 2
III → 3
IV → 4
So, option 1 will replace the question mark (?) in the given figure.
Hence, ‘ option 1 ’ is the correct answer

100. Select the number from among the given options that can replace the question mark in the following matrix.

14	12	10	8
10	8	2	4
8	14	6	16
12	18	14	?

a. 18
b. 10
c. 16
d. 20

Ans. d
Explanation:
The logic is:
Column 1 - Column 2 = Column 3 - Column 4
Column 1: 14 - 10 = 12 - 8
Column 2: 12 - 8 = 18 - 14
Column 3: 10 - 2 = 14 - 6
Similarly,

Let the missing number be x
Column 3: 8 - 4 = x - 16
⇒ 4 = x - 16
⇒ 4 + 16 = x
⇒ 20 = x
Therefore, the missing number is 20.
Hence, ‘ 20 ’ is the correct answer.