

RRB NTPC 19 Jan 2021 Shift 2 Solution

1. Udayin shifted the capital of Magadha from _____ to Patliputra.

- a. Sarnath
- b. Rajagrih
- c. Kaushambi
- d. Taxila

Ans. b

Explanation: The correct answer is Rajagaha.

The city of Pataliputra was founded by Udayin at the confluence of two rivers, the Son and the Ganges.

2. How is nacre, the technical term for an extract from the inside of a shell, better known as?

- a. Garnet
- b. Onyx
- c. Mother-of-pearl
- d. Opal

Ans. c

Explanation:

The correct answer is Mother-of-pearl.

Nacre, commonly known as the mother of pearl, is an organic-inorganic composite substance formed as an inner shell layer by some molluscs; it is also the material that pearls are made of. It's tough, tenacious, and iridescent. Nacre can be found in some of the oldest bivalve, gastropod, and cephalopod lineages.

3. The number of rational numbers between 5 and 7 is:

- a. 2
- b. infinite
- c. 1
- d. 0

Ans. b

Explanation:

You can say 5.1 is a rational number lying between 5 and 7.

More examples are 5.01, 5.001, 5.0001, 5.00001, and so forth.

There is no quota on the number of decimal places and thus the combination of numbers in these decimal places. As long as the number starts with 5 and has a definite end when expressed in decimals, this is an example of rational numbers.

So,

The number of rational numbers between 5 and 7 is infinite

∴ Required answer is Option 2

4. If the cost price of 15 shirts is equal to the selling price of 10 shirts, then what will be the gain or loss percent?

a. 50% gain

b. 50% loss

c. $33\frac{1}{3}$ % loss

d. $33\frac{1}{3}$ % gain

Ans. a

Explanation:

Given:

The cost price of 15 shirts is equal to the selling price of 10 shirts

Concept used:

$$SP = CP + \text{Profit}$$

$$\text{Profit \%} = (\text{Profit}/CP) \times 100$$

Calculation:

Let CP of 15 shirts be Rs. 15x

So,

$$CP \text{ one shirt} = 15x/15 = x$$

According to the question,

$$15x = SP \text{ of 10 shirts}$$

So,

$$SP \text{ of 1 shirt} = 15x/10 = 1.5x$$

Now,

$$\text{Profit} = 1.5x - x$$

$$\Rightarrow \text{Profit} = 0.5x$$

$$\text{Profit \%} = (0.5x/x) \times 100$$

⇒ 50%

∴ Required answer is 50% gain

5. If a painting was sold for Rs. 5,225 after a discount of 5%, then what is the marked price of the painting?

a. Rs. 5,200

b. Rs. 5,575

c. Rs. 5,550

d. Rs. 5,500

Ans. d

Explanation:

Given:

Selling price of painting = Rs. 5225

Discount = 5%.

Concept used:

$SP = MP - MP \times \text{Discount}\%$

SP = Selling price

MP = Marked price

Calculation:

Let the marked price of the painting be Rs. x.

According to the question,

$$5225 = x - (5/100)x$$

$$\Rightarrow 5225 = (100x - 5x)/100$$

$$\Rightarrow 5225 = 95x/100$$

$$\Rightarrow x = 5225 \times 100/95$$

$$\Rightarrow x = 55 \times 100 = 5500$$

So the marked price of the painting is Rs. 5500.

∴ The marked price of the painting is 5500.

6. Rani buys toys at 6 for a rupee and sells them at 3 for a rupee. Her profit is:

a. 150%

b. 20%

c. 50%

d. 100%

Ans. d

Explanation:

Given:

Rani buys toys at 6 for a rupee

Rani sells toys at 3 for a rupee

Concept used:

$$\text{Profit} = \text{SP} - \text{CP}$$

$$\text{Profit \%} = \frac{\text{Profit}}{\text{CP}} \times 100$$

Calculation:

Let she bought $6x$ toys

So, her total CP = $6x/6 = \text{Rs. } x$

Now,

She sells 3 for a rupee

Total SP of $6x$ toys = $6x/3 = \text{Rs. } 2x$

$$\text{Profit} = 2x - x$$

$$\Rightarrow \text{Profit} = x$$

$$\text{Profit \%} = \frac{x}{x} \times 100$$

$$\Rightarrow 100\%$$

\therefore Her profit is 100%

7. The value of $1 - \sin 35^\circ \cos 55^\circ$ is equal to:

a. $\text{Sec}^2 55^\circ$

b. $\text{Cosec}^2 55^\circ$

c. $\text{Cos}^2 35^\circ$

d. $\text{Sin}^2 35^\circ$

Ans. c

Explanation:

Given:

$$1 - \sin 35^\circ \cos 55^\circ$$

Concept used:

$$\text{Sin}^2\theta + \text{Cos}^2\theta = 1$$

Calculation:

$$1 - \sin 35^\circ \cos 55^\circ$$

$$\Rightarrow 1 - \sin 35^\circ \times \cos (90^\circ - 35^\circ)$$

$$\Rightarrow 1 - \sin 35^\circ \times \sin 35^\circ$$

$$\Rightarrow 1 - \sin^2 35^\circ$$

$$\Rightarrow \text{Cos } 2 \ 35^\circ$$

∴ Required answer is $\cos 2 \times 35^\circ$

8. If the diagonal of a cube is $10\sqrt{3}$ cm long, then what is its volume? a. 500 cm³ b. 9000 cm³ c. 1000 cm³ d. 800 cm³

8. If the diagonal of a cube is $10\sqrt{3}$ cm long, then what is its volume?

a. 500 cm³

b. 9000 cm³

c. 1000 cm³

d. 800 cm³

Ans. c

Explanation:

Given:

Length of diagonal is $10\sqrt{3}$ cm

Formula Used:

Length of diagonal = $\sqrt{3} \times \text{Side}$

Volume of Cube = $(\text{Side})^3$

Calculation:

Length of diagonal = $\sqrt{3} \times \text{Side}$

$\Rightarrow 10\sqrt{3} = \sqrt{3} \times \text{Side}$

$\Rightarrow \text{Side} = 10$

Volume of cube = $10^3 = 1000 \text{ cm}^3$

∴ Volume of cube is 1000 cm³

9. As of October 2020, what percentage of stakes are owned by the Government of India in SAIL?

a. 70%

b. 80%

c. 85%

d. 75%

Ans. d

Explanation:

The correct answer is 75%.

A minimum of 12.5 percent of equity shares has been retained for regular investors, while mutual funds and insurance firms would receive 25% of the offer shares. SAIL is owned by the government to the tune of 75%.

10. The mean of 100 observations is 50. If one observation of 50 is replaced by 150, then what will be the new mean?

- a. 52**
- b. 50.5**
- c. 51**
- d. 49.5**

Ans. c

Explanation:

Given:

Mean (100 observations) = 50

Formula used:

Mean = Sum of all observations/Number of observations

Calculation:

Sum of 100 observations = $100 \times 50 = 5000$

Let the sum of 99 observations which were not replaced be 'x'

\Rightarrow 100th observation = $5000 - x = 50$

$\Rightarrow x = 4950$

Now,

Sum of all observations (new) = $x + 150 = 4950 + 150 = 5100$

New mean = $5100/100 = 51$

\therefore The new mean will be 51

11. Who among the following has not been India's Finance Minister?

- a. Yashwant Sinha**
- b. V K Krishna Menon**
- c. Arun Jaitley**
- d. T T Krishnamachari**

Ans. b

Explanation:

The correct answer is V K Krishna Menon.

Vengalil Krishna Menon was a non-career diplomat, politician, and academic from India. Some called him India's second most powerful figure, behind Jawaharlal Nehru, the country's first Prime Minister.

12. Name the Indian classical dance form which is believed to be revealed by Lord Brahma to Bharata, a famous sage, who then codified this sacred dance in a Sanskrit text called 'Natya Shastra'.

- a. Odissi
- b. Kathak
- c. Bharatanatyam
- d. Kathakali

Ans. c

Explanation:

The correct answer is Bharatanatyam.

Bharatanatyam is India's oldest classical dance form, which developed in the Tanjore district of Tamil Nadu and is considered the mother of many other Indian classical dance forms.

In Tamil, Bha- Bhavam (meaning expression), Ra- Ragam (means music), Ta Talam (means beat or rhythm), and Natyam (means dance) are all terms used to describe Bharatnatyam dance.

13. In certain code language, TRUNK is coded as YVXPL. How will GLOBE be coded in that language?

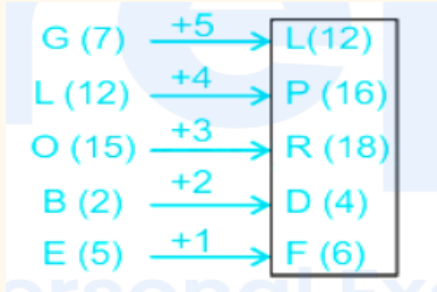
- a. LPRDF
- b. LPREF
- c. LPREG
- d. LPRDG

Ans. a

Explanation:

T (20)	$\xrightarrow{+5}$	Y (25)
R (18)	$\xrightarrow{+4}$	V (22)
U (21)	$\xrightarrow{+3}$	X (24)
N (14)	$\xrightarrow{+2}$	P (16)
K (11)	$\xrightarrow{+1}$	L (12)

Similarly,



Hence, "option 1" is the correct answer.

14. $(\sqrt{2} - \sqrt{3})^2$ is:

- a. a whole number
- b. a natural number
- c. a rational number
- d. an irrational number

Ans. d

Explanation:

Given:

$$(\sqrt{2} - \sqrt{3})^2$$

Concept used:

Irrational numbers are real numbers that cannot be represented as a simple fraction.

These cannot be expressed in the form of a ratio, such as p/q , where p and q are integers, $q \neq 0$. It is a contradiction of rational numbers.

$$(a - b)^2 = a^2 + b^2 - 2.ab$$

Calculation:

$$(\sqrt{2} - \sqrt{3})^2$$

$$\Rightarrow \sqrt{2^2} + \sqrt{3^2} - 2\sqrt{2}\sqrt{3}$$

$$\Rightarrow 2 + 3 - 2\sqrt{6}$$

$$\Rightarrow 5 - 2\sqrt{6}$$

\therefore Required answer is Option 4

15. Please read the information given below and answer the question

Six friends (A, B, C, D, E, F) are playing a game together, in which all are facing the center. E is to the left of D. C is between A and B. F is between E and A.

Who among the following is between D and F?

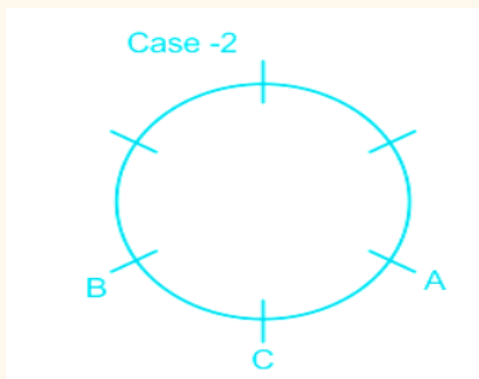
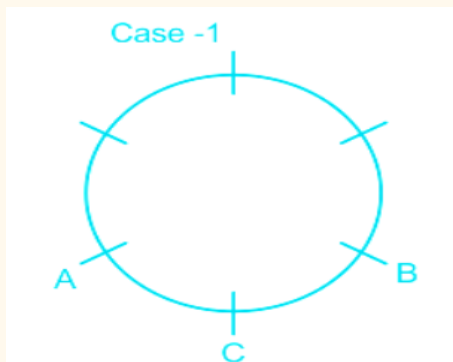
- a. E
- b. A
- c. C
- d. B

Ans. a

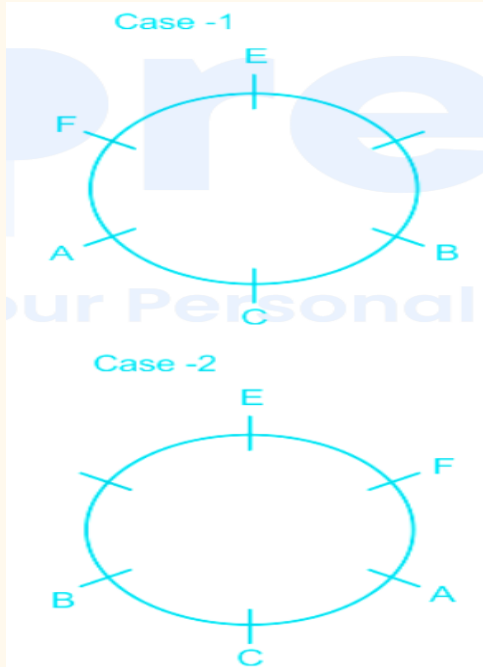
Explanation:

Given that:-

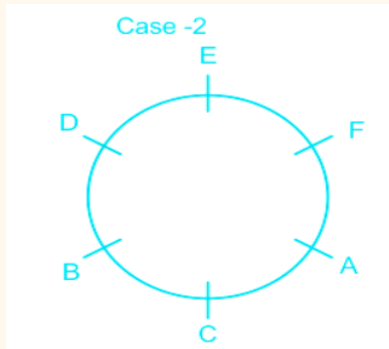
C is between A and B.



F is between E and A.



E is to the left of D. Due to this case 1 is eliminated.



Thus, E is between D and F.

Hence, "option 1" is the correct answer.

16. A train 800 m long is travelling at a speed of 120 km/h. How much time will it take to cross a bridge 1200 m long?

- a. 3 min
- b. 1 min
- c. 4 min
- d. 2 min

Ans. b

Explanation:

Given:

Speed of train = 120 km/hr

Length of train = 800 m

Length of bridge = 1200 m

Concept used:

Time taken = Total length to be covered/Speed of train

Speed in m/sec = km/h \times (5/18)

When a train crosses a bridge it has to cover a distance that is equal to its length plus an additional distance equal to the length of the bridge to cross it.

Calculation:

Total length to be covered = (1200 + 800) m

\Rightarrow 2000 m

Speed in m/sec = 120 \times (5/18) m/s

\Rightarrow 100/3 m/s

Time taken = 2000 \div (100/3) seconds

\Rightarrow 2000 \times (3/100) seconds

\Rightarrow 60 seconds or 1 minute

\therefore The time taken to cross the platform is 1 min

17. Who received the Padma Bhushan for literature and education in 2020?

- a. Shri Narsingh Dev Jamwal
- b. Ms. Gita Mehta
- c. Shri Kailash Madbaiya
- d. Shri Manoj Das

Ans. d

Explanation:

The correct answer is Shri Manoj Das.

Manoj Das received the Saraswati Samman in 2000 .

In 2001, he received the Padma Shri, India's fourth-highest civilian honour, and in 2020, he received the Padma Bhushan, India's third-highest civilian award, for his contributions to literature and education.

18. The mean of 25 observations is 36. If the mean of its first 13 observations is 32 and the last 13 observations is 40, then what will be its 13th observation?

- a. 23
- b. 38
- c. 36
- d. 40

Ans. c

Explanation:

Given:

The mean of 25 observations is 36

The mean of its first 13 observations is 32

The mean of the last 13 observations is 40

Formula used:

Mean = sum of the observation/Number of the observation

Calculation:

Sum of the 25 numbers = $36 \times 25 = 900$

Sum of the first 13 numbers = $13 \times 32 = 416$

Sum of the last 13 numbers = $13 \times 40 = 520$

So,

13 th number = (Sum of the first 13 numbers + Sum of the last 13 numbers) -
(Sum of the 25 numbers)

$\Rightarrow (416 + 520) - (900)$

$\Rightarrow 936 - 900 = 36$

\therefore Its 13 th observation is 36

19. What is MPLADS?

- a. **A scheme launched by the government of India which enables Members of Parliament to do development work in their constituencies**
- b. **A scheme launched by the Madhya Pradesh government for the protection of ladies**
- c. **A scheme launched by the Maharashtra and Punjab governments for legal assistance to deprived sections**
- d. **A scheme launched by the Madhya Pradesh government for the protection of lions and other endangered species**

Ans. a

Explanation:

The correct answer is A

scheme launched by the government of India which enables Members of Parliament to do development work in their constituencies. Members of Parliament Local Area Development Scheme (MPLADS) is a scheme established by the Government of India on December 23, 1993, that allows members of parliament (MP) to recommend developmental work in their constituencies with a focus on creating long-term community assets based on locally felt needs.

20. Who was the Chairman of Atomic Energy Commission at the time of India's First nuclear Test at Pokhran in 1974?

- a. Rajagopala Chidambaram
- b. Homi Sethna
- c. Raja Ramanna
- d. APJ Abdul Kalam

Ans. b

Explanation:

The correct answer is Homi Sethna.

Homi Nusserwanji Sethna was an Indian nuclear scientist and chemical engineer who rose to international prominence as Chairman of the Atomic Energy Commission (India) during the 1974 Pokhran Test Range nuclear test, codenamed Smiling Buddha.

21. Find the value of :

$$(\sqrt{1.69} + \sqrt{0.49}) \times \sqrt{400}$$

- a. 22
- b. 20
- c. 40
- d. 20

Ans. c

Explanation:

$$\text{Given: } \sqrt{1.69} + \sqrt{0.49} \times \sqrt{400}$$

Concept used:

$$0.ab = ab/100$$

Calculation:

$$\sqrt{1.69} + \sqrt{0.49} \times \sqrt{400}$$

$$\begin{aligned}
&= \left(\sqrt{\frac{169}{100}} + \sqrt{\frac{49}{100}} \right) \times \sqrt{400} \\
&= \left(\frac{13}{10} + \frac{7}{10} \right) \times \sqrt{400} \\
&= \left(\frac{13+7}{10} \right) \times 20 \\
&= \left(\frac{20}{10} \right) \times 20 \\
&= 2 \times 20 \\
&= 40
\end{aligned}$$

∴ Required answer is 40

22. Prakash remembers that Danish's birthday comes in the last week of February. Rajesh confirms that Danish's birthday comes after 27th February every year. What is Danish's probable date of birth?

- a. 26th February
- b. 29th February
- c. 27th February
- d. 28th February

Ans. d

Explanation:

From the first statement, Prakash remembers that Danish's birthday comes in the last week of February.

It means the possible dates of his birthday are 22, 23, 24, 25, 26, 27, 28, or 29.

Rajesh confirms that Danish's birthday comes after the 27th of February Every year.

It means the date of his birthday is 28th February or 29th February. But the 29th of February does not exist every year. Thus, according to Rajesh's statement, the date of birth of Danish has to be 28th February.

Hence, "option 4" is the correct answer.

23. Select the option that is related to the third term in the same way as the second term is related to the first term.

Cricket : 11 :: Kabaddi : ?

- a. 6
- b. 5

- c. 7
- d. 8

Ans.c

Explanation: The logic followed here is:- In the Cricket game, there are 11 players in each team. So, 11 is related to cricket. Similarly, the Kabaddi game has 7 players in each team.

So, 7 related to kabaddi. Hence, "option 3" is the correct answer.

24. A sells a radio to B at a gain of 10% and B sells it to C at a gain of 5%. If C pays Rs. 462 for it, then what did it cost A?

- a. Rs. 410
- b. Rs. 420
- c. Rs. 390
- d. Rs. 400

Ans. d

Explanation:

Given:

A sells a radio to B at a gain of 10%

B sells it to C at a gain of 5%

C paid Rs. 462

Concept used:

$$sp = cp + cp \times \text{gain}\%$$

Calculation:

Let cp of A is $100x$

$$\text{So, sp of A} = 100x + 100x \times 1/10$$

$$\Rightarrow 110x = \text{B's cp}$$

Now,

$$\text{B's sp} = 110x + 110x \times 1/20$$

$$\Rightarrow 115.5x$$

According to the question,

$$115.5x = 462$$

$$\Rightarrow x = 462/115.5$$

$$\Rightarrow x = 4$$

So,

$$100x = 400$$

∴ Cost price of A was Rs. 400

25. Slash and burn agriculture is known as Bewar in which state of India?

- a. Andhra Pradesh
- b. Jharkhand
- c. Madhya Pradesh
- d. Rajasthan

Ans. c

Explanation:

The correct answer is Madhya Pradesh.

Slash and burn agriculture is known as Bewar or Dahiya in Madhya Pradesh .

26. The decimal expansion of $\frac{31}{2.5}$ will terminate after:

- a. three decimal places
- b. two decimal places
- c. more than three decimal places
- d. one decimal place

Ans. d

Explanation:

Concept used:

Any rational number (that is, a fraction in the lowest terms) can be written as either a terminating decimal or a repeating decimal.

Just divide the numerator by the denominator.

If you end up with a remainder of 0, then you have a terminating decimal.

Calculation:

$$\frac{31}{2.5} = \frac{310}{25}$$

Now

$$\frac{310}{25} = 12.4$$

So, after one decimal place, decimal expansion will terminate

∴ Required answer is Option 4

27. Who is the winner of 7th MS Swaminathan award for the period 2017-2019?

- a. Sumanta Kundu**
- b. V Praveen Rao**
- c. C M Parihar**
- d. J C Katyal**

Ans. b

Explanation:

The correct answer is V Praveen Rao.

V Praveen Rao , Vice-Chancellor (VC) of Professor Jayashankar Telangana State Agricultural University, has won the 7th Dr M S Swaminathan Award for the 2017-19 academic year.

28. If $\tan 2\theta = \cot (\theta + 6^\circ)$ then θ is:

- a. 28°**
- b. 12°**
- c. 45°**
- d. 24°**

Ans. a

Explanation:

Given:

$$\tan 2\theta = \cot (\theta + 6^\circ)$$

Concept used:

Calculation:

$$\tan 2\theta = \cot (\theta + 6^\circ)$$

$$\Rightarrow \cot(90^\circ - 2\theta) = \cot (\theta + 6^\circ)$$

$$\Rightarrow 90^\circ - 2\theta = \theta + 6^\circ$$

$$\Rightarrow 3\theta = 84^\circ$$

$$\Rightarrow \theta = 28^\circ$$

$$\therefore \theta \text{ is } 28^\circ$$

29. Where is the headquarters of the World Intellectual Property Organisation (WIPO) situated?

- a. Beijing**

- b. Geneva**
- c. Tokyo**
- d. Paris**

Ans. b

Explanation:

The correct answer is Geneva.

The World Intellectual Property Organization (WIPO) is established by the World Intellectual Property Organization (WIPO) Convention, which transforms BIRPI into WIPO.

The newly founded World Intellectual Property Organization (WIPO) is a member-state-led international organization with headquarters in Geneva, Switzerland .

30. The SI unit of sound was named in honour of which physicist?

- a. Heinrich Rudolf Hertz**
- b. Albert Einstein**
- c. JC Maxwell**
- d. Werner Karl Heisenberg**

Ans.a

Explanation:

The correct answer is Heinrich Rudolf Hertz.

The SI unit of sound was named in honour of physicist Heinrich Rudolf Hertz .

31. Select the number that can replace the question mark (?) in the following series.

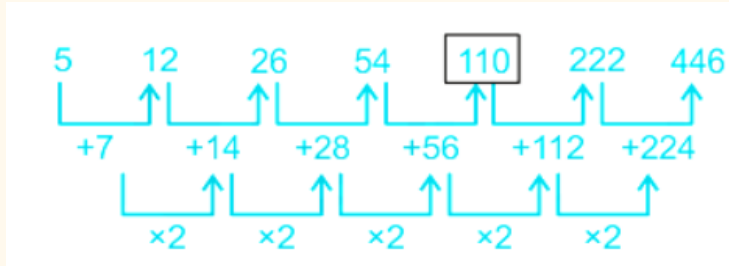
5, 12, 26, 54, ?, 222, 446

- a. 110**
- b. 108**
- c. 116**
- d. 112**

Ans. a

Explanation:

The logic followed here is:-



32. Name the daughter of one of the most important rulers in early Indian history, Chandragupta II.

- a. Parvatigupta
- b. Rudrama Devi
- c. Prabhavatigupta
- d. Lopamudra

Ans. c

Explanation:

The correct answer is Prabhavati gupta.

Chandragupta II's daughter, Prabhavati Gupta, was a powerful monarch in early Indian history.

She married Rudrasena II of the Vakataka Dynasty and served as regent to her sons Divakarsena and Damodarsena after her husband died.

33. The value of $\sqrt{8} + \sqrt{18}$ is:

- a. $5\sqrt{2}$
- b. 12
- c. $2(\sqrt{2} + \sqrt{3})$
- d. $\sqrt{26}$

Ans. a

Explanation:

Given:

$$\sqrt{8} + \sqrt{18}$$

Calculation:

$$\sqrt{8} + \sqrt{18}$$

$$\Rightarrow \sqrt{(4 \times 2)} + \sqrt{(9 \times 2)}$$

$$\Rightarrow 2\sqrt{2} + 3\sqrt{2}$$

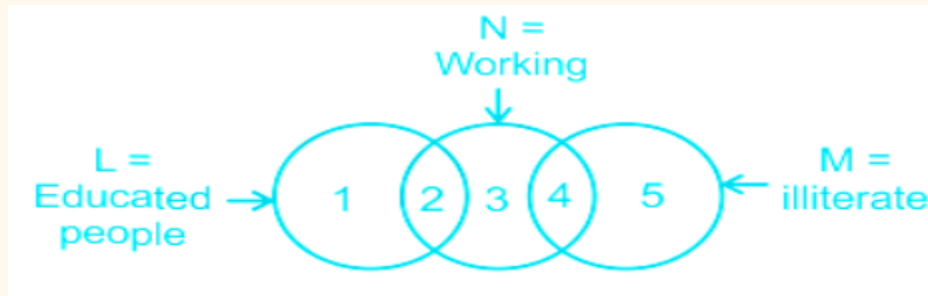
$$\Rightarrow \sqrt{2}(2 + 3) \text{ [Taking } \sqrt{2} \text{ common from both]}$$

$$\Rightarrow \sqrt{2} \times 5$$

$$\Rightarrow 5\sqrt{2}$$

∴ Required answer is $5\sqrt{2}$

34. In the following diagram, L represents educated people, M represents illiterate people, N represents working people. Which number represents people who are working and illiterate?



- a. 4
- b. 2
- c. 3
- d. 5

Ans. a

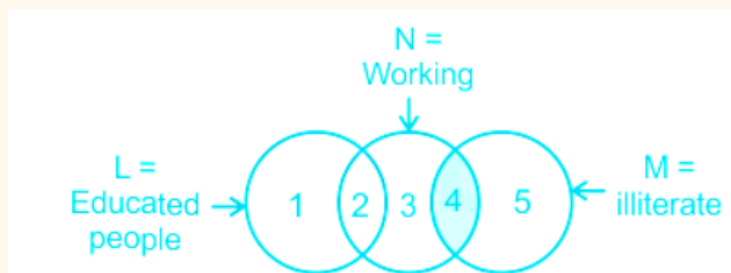
Explanation:

The Venn diagram is given below:-

The L represents educated people,

The M represents illiterate people.

The N represents working people.



The shaded part shows represent people who are working and illiterate is 4.

Hence, "option 1" is the correct answer.

35. Who received the Padma Vibhushan in the field of art in the year 2020?

- a. Shri Balwant Moreshwar Purandare**
- b. Shri Budhaditya Mukherjee**
- c. Shri Chhannulal Mishra**
- d. Shri Mohanlal Viswanathan Nair**

Ans. c

Explanation:

The correct answer is Shri Chhannulal Mishra.

In 2020, Channulal Mishra , together with six others, received the country's highest civilian award, the Padma Vibhushan.

36. A terminating decimal is always:

- a. a rational number**
- b. an integer**
- c. a whole number**
- d. a natural number**

Ans. a

Explanation:

According to the definition of rational number,

The decimal expansion of a rational number always either terminates after a finite number of digit or begins to repeat the same finite sequence of digits over and over.

So, from this we can say option 1 should be the answer.

∴ Correct answer is Option 1

37. Rahul and Neha met on 24th January 2011 at City Hall. After that, accidentally they met again on 23rd January 2019 at the same place. After how many days did they meet the second time?

- a. 2921**
- b. 2919**
- c. 2922**
- d. 2920**

Ans. a

Explanation:

Given that:-

Rahul and Neha met on 24th January 2011 at City Hall. After that, accidentally they met again on 23rd January 2019 at the same place.

Now calculating after how many days did they meet the second time:-

From 24th January 2011 to 24th January 2012 (Non-leap year) = 365 days

From 24th January 2012 to 24th January 2013 (Leap year) = 366 days

From 24th January 2013 to 24th January 2014 (Non-leap year) = 365 days

From 24th January 2014 to 24th January 2015 (Non-leap year) = 365 days

From 24th January 2015 to 24th January 2016 (Non-leap year) = 365 days

From 24th January 2016 to 24th January 2017 (Leap year) = 366 days

From 24th January 2017 to 24th January 2018 (Non-leap year) = 365 days

From 24th January 2018 to 23rd January 2019 (Non-leap year) = 364 days

Total number of days did they meet the second time = $365 + 366 + 365 + 365 + 365 + 366 + 365 + 364 = 2921$

Hence, "option 1" is the correct answer.

38. A tank has two inlets A and B which can fill it in 12 hours and 16 hours respectively. An outlet C can empty the full tank in 8 hours. If all three pipes are opened together when the tank is empty, then how much time will it take to fill the tank?

- a. 48 hours
- b. 36 hours
- c. 20 hours
- d. 40 hours

Ans. a

Explanation:

Given:

A tank has two inlets A and B which can fill it in 12 hours and 16 hours respectively An outlet C can empty the full tank in 8 hours

Concept used:

Total work = LCM of the time taken by the pipes individually

Calculation:

LCM of 12, 16, and 8 is 48 i.e total work

So, the efficiency of pipe A and pipe B,

$48/12 = 4$, $48/16 = 3$

The efficiency of pipe C = $48/8 = -6$ [As it is an outlet pipe its efficiency will be in negative]

Now,

Combined efficiency = $4 + 3 - 6$

$\Rightarrow 1$

Time taken by three pipes = $48/1 = 48$ hours

\therefore It will take 48 hours to fill the tank

39. Which of the following is the shortcut for copying and pasting a file on the desktop?

a. Right click on file and click on copy + right click and paste

b. Ctrl X + Ctrl V

c. Ctrl Z + Ctrl Y

d. Ctrl C + Ctrl V

Ans. d

Explanation:

The correct answer is Ctrl C + Ctrl V.

Key Points

Ctrl+C is often used to copy the highlighted text to the clipboard.

Holding down the Ctrl key and pressing the Vkey pastes the contents of the clipboard into the current cursor location.

40. The median of 4, 4, 5, 7, 6, 7, 7, 12, 3 is:

a. 7

b. 6

c. 4

d. 5

Ans. b

Explanation:

Given:

Numbers are 4, 4, 5, 7, 6, 7, 7, 12, 3

Concept used:

To find the median, the data should be arranged, first, in order of least to greatest

If the total number of observations given is odd, then the formula to calculate the median is:

Median = $\{(n + 1)/2\}$ th term

Calculation:

Arranging the terms in ascending order: 3, 4, 4, 5, 6, 7, 7, 7, 12.

Since the number of terms is 9

Then the median will be the middle term i.e. 5th term which is 6.

\therefore The median is 6

41. Which of the following has terminating decimal representation?

a. $2\frac{1}{3}$

b. $3\frac{1}{7}$

c. $1\frac{1}{5}$

d. $4\frac{1}{9}$

Ans. c

Explanation:

Concept used:

Terminating decimal means a decimal that can be expressed in a finite number of figures or for which all figures to the right of some place are zero.

Calculation:

Given options are:

$$2\frac{1}{3} = \frac{7}{3} \approx 2.333 \text{ (continues)}$$

$$3\frac{1}{7} = \frac{22}{7} \approx 3.1428 \text{ (continues)}$$

$$1\frac{1}{5} = \frac{6}{5} = 1.2$$

$$4\frac{1}{9} = \frac{37}{9} = 4.11 \text{ (continues)}$$

Hence, $1\frac{1}{5}$ has a terminating decimal representation.

\therefore $1\frac{1}{5}$ among the following has terminating decimal representation.

42. 'Champions of the Earth'-the UN's highest environmental honour, was awarded to which Indian in 2018?

- a. Piyush Goyal**
- b. Harsh Vardhan**
- c. CK Mishra**
- d. Narendra Modi**

Ans. d

Explanation:

The correct answer is Narendra Modi.

Key Points

On October 3, 2018, United Nations Secretary-General Antonio Guterres presented Prime Minister Narendra Modi with the 'Champions of the Earth Award,' the world's highest environmental honour.

43. In which year did the Government of India approve ISRO's proposal for the first Indian Moon Mission, Chandrayaan-1?

- a. 2001**
- b. 2003**
- c. 2008**
- d. 2013**

Ans. b

Explanation:

The correct answer is 2003.

In November 2003 , the Indian government approved ISRO's proposal for Chandrayaan-1, India's first lunar mission.

44. What is the other name for Regur soil in India?

- a. Red and yellow soil**
- b. Laterite soil**
- c. Alluvial Soil**
- d. Black soil**

Ans. d

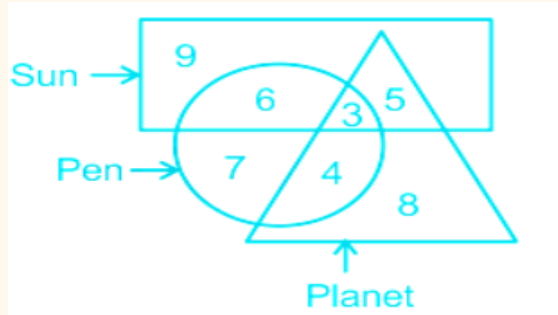
Explanation:

The correct answer is Black soil.

Key Points

Regur Soil, also known as Black Soil, is made up of lava flows and is found in the Deccan trap region , which is stretched across the northwest Deccan plateau.

45. How many planets are not sun?



- a. 15
- b. 14
- c. 13
- d. 12

Ans. d

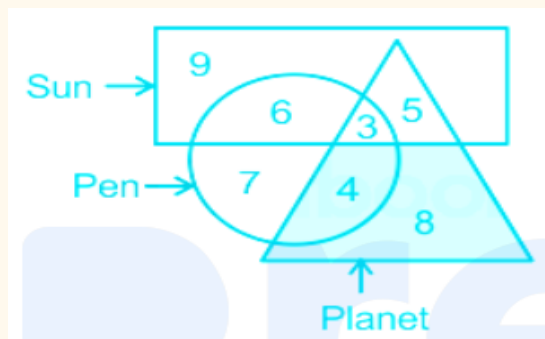
Explanation:

The Venn diagram is given below:-

The rectangle represents Sun,

The circle represents Pen.

The triangle represents Planet.



The planets that are not sun = $4 + 8 = 12$.

Hence, "option 4" is the correct answer

46. Which one of these is the parent company of Google?

- a. Calico
- b. GV

- c. Alphabet Inc.**
- d. Nest Labs**

Ans. c

Explanation:

The correct answer is Alphabet Inc..

Alphabet Inc. is an American multinational technical conglomerate holding company located in Mountain View, California.

47. In the context of the Indian Constitution, which of the following is correctly matched?

- a. Part III - Citizenship**
- b. Part III - Directive Principles of State Policy**
- c. Part III - Fundamental Duties**
- d. Part III - Fundamental Rights**

Ans. d

Explanation:

The correct answer is Part III - Fundamental Rights.

Articles 12 to 35 contained in Part III of the Constitution deal with Fundamental Rights .

48. As of October, 2020, who is the Economic Counsellor and Director of IMF's Research Department?

- a. Gita Gopinath**
- b. Maurice Obstfeld**
- c. Raghuram Rajan**
- d. Christine Lagarde**

Ans. a

Explanation:

The correct answer is Gita Gopinath.

Gita Gopinath is an Indian-American economist who has served as the International Monetary Fund's (IMF) First Deputy Managing Director since January 21, 2022.

49. The mean of the first ten odd natural numbers is:

- a. 8
- b. 9
- c. 10
- d. 11

Ans. c

Explanation:

Formula Used:

mean = sum of the observation/Total number

Calculation:

The numbers are 1, 3, 5, 7, 9, 11, 13, 15, 17 and 19

mean = (1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 + 17 + 19)/10

mean = 100/10 = 10

∴ The mean is 10

50. Four words have been given out of which three are alike in some manner and one is different. Select the odd one.

- a. Air
- b. Field
- c. Mountain
- d. Valley

Ans. a

Explanation:

The logic followed here is:-

Field, mountain, and valley are landforms.

So, air is different from others.

Hence, "option 1" is the correct answer.

51. A map of a city is drawn on a scale of 1 : 50000. The distance between two cities A and B on this map is 12 cm. What will be the actual distance between the two cities?

- a. 9 km
- b. 15 km
- c. 12 km

d. 6 km

Ans. d

Explanation:

Given:

A map of a city is drawn on a scale of 1 : 50000.

The distance between two cities A and B on this map is 12 cm.

Calculation:

Let actual distance be x

Now, According to the question,

$$x \times 1/50000 = 12 \text{ cm}$$

$$\Rightarrow x = 600000 \text{ cm or } 6 \text{ km [1 km = 100000 cm]}$$

\therefore Actual distance is 6 km

52. Name the chemist who proved that the atomic number of an element is a more fundamental property than its atomic mass, which led to modification in Mendeleev's Periodic Law table?

- a. John Newlands**
- b. Johann Dobereiner**
- c. Dmitri Ivanovich Mendeleev**
- d. Henry Moseley**

Ans. : d

Explanation:

The correct answer is Henry Moseley.

Henry Moseley demonstrated that an element's atomic number (abbreviated as Z) is a more fundamental feature than its atomic mass.

53. If the radii of two cylinders are in ratio 2 : 3 and their respective heights are in ratio 5 : 3 then what is the ratio of their volumes?

- a. 17 : 27**
- b. 10 : 17**
- c. 20 : 37**
- d. 20 : 27**

Ans. : d

Explanation:

Given:

The radii of two cylinders are in ratio 2 : 3

The heights are in ratio 5 : 3

Concept used:

Volume of a cylinder = $\pi r^2 h$

r = radius

h = height

Calculation:

Let the radii of the two cylinders be 2x and 3x And height be 5y and 3y

Now,

Ratio = $\pi(2x)^2 5y : \pi(3x)^2 3y$

$\Rightarrow 20x^2 y : 27x^2 y$

$\Rightarrow 20 : 27$

\therefore The ratio of their volumes is 20 : 27

54. Which city from the Harappan Civilization was almost exclusively devoted to crafting production including bead making, shell cutting, metalworking, seal making and weight make?

- a. Harappa
- b. Nageshwar
- c. Mohenjo Daro
- d. Chanhudaro

Ans. d

Explanation:

The correct answer is Chanhudaro.

Compared to Mohenjo Daro, Chanhudaro was a small settlement. This section was dedicated solely to the manufacturing of handicrafts. Bead-making, shell cutting, metal-working, seal-making, and weight-making are some of the principal craft productions

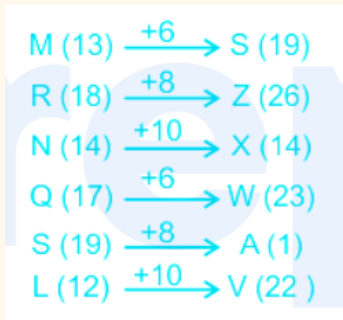
55. In a certain code language, 'MRNQLS' is written as 'SZXWAV'. What is the code for 'STVZBQ' in that code language?

- a. YBGGJA
- b. YBGGJE
- c. YBFFJA
- d. YBFEJA

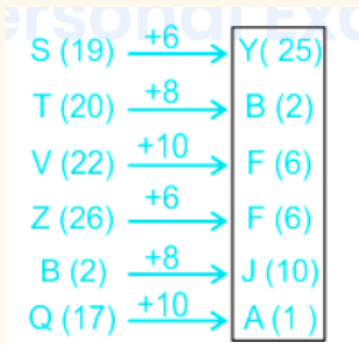
Ans. c

Explanation:

The logic followed here is:-



Similarly,



Hence, "option 3" is the correct answer.

56. Select the number from among the given options that can replace the question mark (?) in the following series.

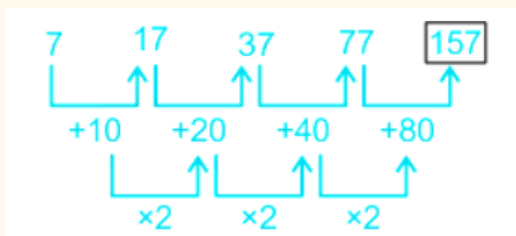
7, 17, 37, 77, ?

- a. 157
- b. 147
- c. 97
- d. 87

Ans. a

Explanation:

The logic followed here is:-



Hence, "Option 1" is the correct answer.

57. Which of the following is NOT a quadratic equation?

- a. $(x + 1)^2 = 2(x - 3)$
- b. $(x + 2)^2 = 2x(x + 1)$
- c. $x^2 + 3x + 1 = (x - 2)^2$
- d. $m(2m + 3) = m^2 + 1$

Ans. c

Explanation:

Concept used:

A quadratic equation is an equation containing one term in which the unknown is squared and no term in which it is raised to a higher power.

Calculation:

Option 3)

$$x^2 + 3x + 1 = (x - 2)^2$$

$\Rightarrow 7x = 3$.. (Here, the highest of x doesn't remain to be 2)

Hence, there is no need to check any further.

Option 3 must be the answer.

$\therefore x^2 + 3x + 1 = (x - 2)^2$ is NOT a quadratic equation.

58. Under which scheme is pension provided to all people aged 60 years or above and belonging to a household below the poverty line?

- a. IGNOAPS
- b. NFBS
- c. IGNWPS
- d. IGNDPS

Ans. a

Explanation:

The correct answer is IGNOAPS.

On November 19, 2007, the National Old Age Pension Scheme (NOAPS) was renamed Indira Gandhi National Old Age Pension Scheme (IGNOPS) and formally inaugurated.

59. Which of the following tournaments of Tennis is played on a clay court?

- a. US Open
- b. Wimbledon
- c. Roland Garros

d. Australian Open

Ans. c

Explanation:

The correct answer is Roland Garros.

On a clay court, the French Open takes place. The Rolland-Garros is also its name.

60. What is meant by Epigraphy?

a. Study of inscriptions

b. Study of skeletons

c. Study of maps

d. Study of coins

Ans. a

Explanation:

The correct answer is Study of inscriptions.

The study of written materials recorded on hard or enduring material is known as epigraphy . Epigraphein ("to write upon, incise") and epigraph ("inscription") are Classical Greek words.

61. $(\sqrt{2} + \sqrt{3})(\sqrt{2} - \sqrt{3})$ is equal to

a. -3

b. -1

c. 3

d. 2

Ans. b

Explanation:

Given:

$$(\sqrt{2} + \sqrt{3})(\sqrt{2} - \sqrt{3})$$

Concept used:

$$a^2 - b^2 = (a + b)(a - b)$$

Calculation:

$$(\sqrt{2} + \sqrt{3})(\sqrt{2} - \sqrt{3})$$

$$\Rightarrow (\sqrt{2})^2 - (\sqrt{3})^2$$

⇒ 2 - 3

⇒ - 1

∴ Required answer is - 1

62. Name the scheme launched by the Government of India in April, 2005, that aims to provide accessible, affordable, accountable, effective and reliable primary health care especially to the poor and vulnerable sections of the population.

- a. NSAP
- b. NRHM
- c. ICDS
- d. AYUSH

Ans. b

Explanation:

The correct answer is NRHM.

The Hon'ble Prime Minister inaugurated the National Rural Health Mission (NRHM) on April 12, 2005, with the goal of providing accessible, inexpensive, and high quality healthcare to the rural population, particularly disadvantaged groups

63. Which subatomic particle was discovered by J Chadwick?

- a. Proton
- b. Neutron
- c. Neuron
- d. Electron

Ans. : b

Explanation: The correct answer is Neutron.

James Chadwick achieved a breakthrough in nuclear research in 1932 when he confirmed the existence of neutrons, which are elementary particles that have no electrical charge.

64. In which country, is the Five-Hundred-Metre Aperture Spherical Telescope (FAST) for listening to alien life opened in 2020?

- a. Germany
- b. India

c. USA

d. China

Ans. d

Explanation:

The correct answer is China.

The Dawodang depression, a natural basin in Pingtang County, Guizhou, southwest China, is home to the Five-hundred-meter Aperture Spherical Radio Telescope.

65. Andaman Teal is an example of which category of animal species?

a. Extinct species

b. Normal species

c. Endemic species

d. Rare species

Ans. c

Explanation:

The correct answer is Endemic species.

Endemic species are those that are found in just one region and nowhere else in the world.

The Andaman teal (*Anas albogularis*) is a duck species native to the Andaman Islands in the Bay of Bengal .

66. The product of $4\sqrt{6}$ and $3\sqrt{24}$ is:

a. a negative number

b. a prime number

c. an irrational number

d. a rational number

Ans. d

Explanation:

Given:

Two numbers are $4\sqrt{6}$ and $3\sqrt{24}$

Concept used:

If a number can be expressed as a fraction where both the numerator and the denominator are integers, the number is a rational number.

Some examples of rational numbers are:

$1/2$

-3/4

0.3 or 3/10

-0.7 or -7/10

0.141414... or 14/99

Calculation:

$$4\sqrt{6} \times 3\sqrt{24}$$

$$\Rightarrow 12\sqrt{6 \times 24}$$

$$\Rightarrow 12\sqrt{144}$$

$$\Rightarrow 12 \times 12$$

$$\Rightarrow 144$$

According to the concept it is a rational number

∴ Required answer is Option 4

67. Name the caves found in western India on the Island of Gharapuris which received the UNESCO heritage site status in 1987.

a. Ajanta Caves

b. Elephanta Caves

c. Khajuraho Caves

d. Ellora Caves

Ans. b

Explanation:

The correct answer is Elephanta Caves.

Elephanta Caves was declared a UNESCO World Heritage Site in 1987 after being repaired.

68. The value of $4x^4 + 9y^2 - 12x^2y$ at $x = 5$ and $y = 2$ is:

a. 1936

b. 2536

c. 1660

d. 2500

Ans. : a

Explanation:

$$\text{Given: } 4x^4 + 9y^2 - 12x^2y$$

$$x = 5$$

$$y = 2$$

Concept used:

$$(a - b)^2 = a^2 + b^2 - 2ab$$

Calculation:

$$\begin{aligned} & 4x^4 + 9y^2 - 12x^2y \\ \Rightarrow & (2x^2)^2 + (3y)^2 - 2 \cdot 2x^2 \cdot 3y \\ \Rightarrow & (2x^2 - 3y)^2 \end{aligned}$$

Now,

$$\begin{aligned} & (2 \times 5^2 - 3 \times 2)^2 \\ \Rightarrow & (2 \times 25 - 3 \times 2)^2 \\ \Rightarrow & (50 - 6)^2 \\ \Rightarrow & (44)^2 \\ \Rightarrow & 1936 \end{aligned}$$

∴ Required answer is 1936

69. Which one among the following is NOT associated with the White Revolution in India?

- a. Norman Borlaug
- b. Dr. Verghese Kurien
- c. Anand
- d. Amul

Ans. a

Explanation:

The correct answer is Norman Borlaug.

Norman Borlaug is NOT associated with the White Revolution in India.

70. A can finish a piece of work in 25 days and B can finish it in 20 days. They work together for 5 days and then A leaves. In how many days will B finish the remaining work?

- a. 12 days
- b. 16 days
- c. 11 days
- d. 15 days

Ans. c

Explanation:

Given:

No. of days taken by A = 25 days

No. of days taken by B = 20 days (A + B) together did work for 5 days

Concept used:

Total work = LCM of the time taken by the workers individually

Calculation:

LCM of 25 and 20 = 100

i.e total work

So, efficiency of A and B is $100/25 = 4$,

$100/20 = 5$

Combined efficiency = 9

Now,

In 5 days,

They will complete $5 \times 9 = 45$

So,

Remaining work = $100 - 45 = 55$

B will take $55/5 = 11$ days to complete the remaining work

∴ B completes the remaining work in 11 days.

71. Hindustan Steel Limited (HSL) was initially designed to manage which of the following steel plants in India?

- a. Bhilai
- b. Rourkela
- c. Bokaro
- d. Durgapur

Ans. b

Explanation:

The correct answer is Rourkela.

Hindustan Steel Limited (HSL) was created with the intention of managing only one new plant in Rourkela .

72. Name the sodium compound which is used to permanently remove the hardness of water.

- a. Sodium hydroxide
- b. Sodium hydrogen carbonate

- c. Sodium carbonate
- d. Sodium chloride

Ans. c

Explanation:

The correct answer is Sodium carbonate.

Hard water is softened with the sodium component.

The lasting hardness of the water is removed with washing soda or sodium carbonate.

73. Which Indian airport is the world's first fully solar powered airport?

- a. Indira Gandhi International Airport
- b. Chennai International Airport
- c. Chhatrapati Shivaji International Airport
- d. Cochin International Airport

Ans. : d

Explanation:

The correct answer is Cochin International Airport.

On March 6, the Cochin International Airport Limited (CIAL) plans to open a 12-megawatt solar power facility at Payyannur in Kerala's Kannur district.

74. If $A : B = 2 : 3$ and $B : C = 4 : 5$, then what is $C : A$?

- a. 15 : 8
- b. 8 : 5
- c. 5 : 18
- d. 5 : 8

Ans. a

Explanation:

Given: $A : B = 2 : 3$ $B : C = 4 : 5$

Calculation:

$A : B = 2 : 3$

$A/B = 2/3$

$B : C = 4 : 5$

$B/C = 4/5$

B should be equal in each case,

So, $A : B : C = 8 : 12 : 15$ [By equaling B in each case]

So, $C : A = 15 : 8$

$\therefore C : A$ is $15 : 8$

75. select the option that is related to the third term in the same way as the second term is related to the first term. Ranthambore : Rajasthan :: Kaziranga : ?

- a. Manipur
- b. Assam
- c. Nagaland
- d. Meghalaya

Ans. b

Explanation:

The logic followed here is:-

Ranthambore national park is situated in Rajasthan. Similarly, Kaziranga national park is situated in Assam.

Hence, "option 2" is the correct answer.

76. In selling 33 m cloth, Rani's profit is equal to the selling price of 11 m cloth, then what is her gain percent?

- a. 30% gain
- b. 20% gain
- c. 50% gain
- d. 60% gain

Ans. c

Explanation:

Given:

In selling 33 m cloth, Rani's profit is equal to the selling price of 11 m cloth

Concept used:

$SP = CP + \text{Profit}$

$\text{Profit \%} = \frac{\text{Profit}}{CP} \times 100$

Calculation: Let SP of 33 m cloth is Rs. $33x$

So, SP of 1 m cloth is Rs.

x According to the question,

$33x = \text{CP of 33 m cloth} + (x \times 11)$

$\Rightarrow 33x - 11x = \text{CP of 33 m cloth}$

$\Rightarrow 22x = \text{CP of 33 m cloth}$

So, profit = $33x - 22x = 11x$

Profit % = $(11x/22x) \times 100$

$\Rightarrow 50\%$

\therefore Her gain percent is 50

77. Which of the following is an audio file extension?

- a. MP5
- b. MOV
- c. WMV
- d. WMA

Ans. d

Explanation:

The correct answer is WMA.

Microsoft collaborated with composer Stan LePard to create the Windows Media Audio (WMA) line of audio codecs and their accompanying audio coding formats.

78. Six persons A, B, C, D, E and F are going to any one place among six different places Delhi, Mumbai, Punjab, Odisha, Goa and UP (not necessarily in the same order). No two persons are going to the same place. B is not going to Delhi. E is going to Odisha. F is not going to Delhi and Goa. D is going to Mumbai. A and C are not going to UP. A is not going to Delhi. Who is going to Delhi?

- a. B
- b. A
- c. C
- d. E

Ans .c

Explanation:

Given that:-

E is going to Odisha.

D is going to Mumbai.

Person	Location
A	
B	
C	
D	Mumbai
E	Odisha
F	

Then, B is not going to Delhi, F is not going to Delhi and Goa, A and C are not going to UP, and A is not going to Delhi.

Thus, C is the only possible choice for Delhi

Person	Location
A	Delhi
B	Delhi
C	Delhi
D	Mumbai
E	Odisha
F	Delhi

Hence, "option 3" is the correct answer.

79. If $x = \sqrt{3} + \sqrt{2}$ then the value of $x^2 + \frac{1}{x^2}$ is:

- a. 10
- b. $2\sqrt{3}$
- c. 14
- d. 12

Ans. a

Explanation:

Given:

$$x = \sqrt{3} + \sqrt{2}$$

Concept used:

$$(a + b)^2 = a^2 + b^2 + 2ab$$

$$(a - b)^2 = a^2 + b^2 - 2ab$$

$$a^2 - b^2 = (a + b)(a - b)$$

Calculation:

$$x = \sqrt{3} + \sqrt{2}$$

$$\Rightarrow \frac{1}{x} = \frac{1}{\sqrt{3} + \sqrt{2}}$$

$$\Rightarrow \frac{1}{x} = \frac{\sqrt{3} - \sqrt{2}}{(\sqrt{3} + \sqrt{2})(\sqrt{3} - \sqrt{2})}$$

$$\Rightarrow \frac{1}{x} = \frac{\sqrt{3} - \sqrt{2}}{(\sqrt{3})^2 - (\sqrt{2})^2}$$

$$\Rightarrow \frac{1}{x} = \frac{\sqrt{3} - \sqrt{2}}{3 - 2}$$

$$\Rightarrow \frac{1}{x} = \sqrt{3} - \sqrt{2}$$

Now,

$$x^2 + \frac{1}{x^2}$$

$$\Rightarrow (\sqrt{3} + \sqrt{2})^2 + (\sqrt{3} - \sqrt{2})^2$$

$$\Rightarrow (\sqrt{3})^2 + (\sqrt{2})^2 + 2 \cdot \sqrt{3} \cdot \sqrt{2} + (\sqrt{3})^2 + (\sqrt{2})^2 - 2 \cdot \sqrt{3} \cdot \sqrt{2}$$

$$\Rightarrow 3 + 2 + 3 + 2$$

$$\Rightarrow 10$$

∴ Required answer is 10

80. Panchpatmali in Koraput district, Odisha has large deposits of which mineral?

- a. Copper
- b. Manganese
- c. Bauxite
- d. Iron Ore

Ans. c

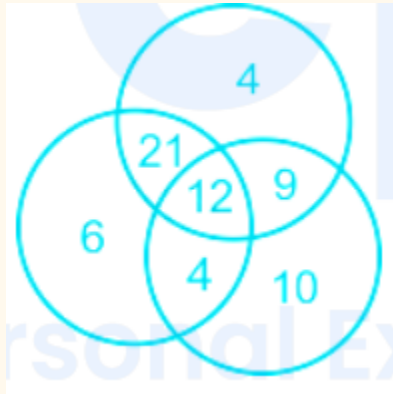
Explanation:

The correct answer is Bauxite.

The state of Odisha produces the most bauxite.

The Panchpatmali deposits in the Koraput district are the state's most important bauxite reserves.

81. The circle positioned above represents people who like cricket. The circle to your left represents people who like volleyball and the circle to your right represents people who like basketball.



How many people like volleyball?

- a. 33
- b. 44
- c. 22
- d. 43

Ans. d

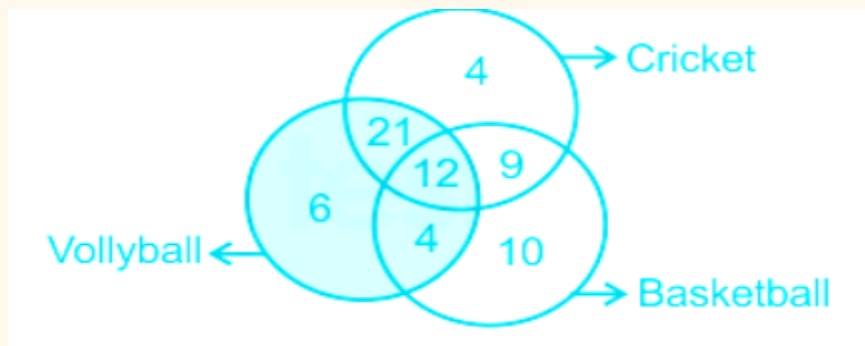
Explanation:

The Venn diagram is given below:-

The circle positioned above represents people who like cricket,

The circle to your left represents people who like volleyball,

The circle to your right represents people who like basketball.



The people who like volleyball = $6 + 21 + 12 + 4 = 43$.
Hence, "option 4" is the correct answer.

- 82. Name the leader whose opposition led to the disappearance of all hopes of compromise between the Congress and the Muslim League in 1928.**
- a. Sir Muhammad Iqbal
 - b. Muhammad Ali Jinnah
 - c. MR Jayakar
 - d. Jawaharlal Nehru

Ans. c

Explanation:

The correct answer is MR Jayakar.

At the All Parties Conference in 1928 , negotiations on addressing the matter fell down when M.R. Jayakar of the Hindu Mahasabha vehemently resisted any compromise efforts.

- 83. Select the option that is related to the third term in the same way as the second term is related to the first term. Kind : Cruel :: Tall : ?**
- a. Short
 - b. Weak
 - c. Strong
 - d. Small

Ans. a

Explanation:

The logic followed here is:-

Kind is the antonym of Cruel .

Similarly, tall is the antonym for short .

Weak is the antonym of strong, and small is the antonym of large.

Hence, "option 1" is the correct answer.

- 84. Which of the following is used to detect cracks and flaws in metal blocks?**
- a. Sound Navigation and Ranging (SONAR)
 - b. Echo

- c. Ultrasound**
- d. Reverberation**

Ans. c

Explanation:

The correct answer is Ultrasound.

Metal blocks can be inspected with ultrasound to discover cracks and faults.

Large structures such as houses, bridges, machinery, and scientific apparatus all use metallic components.

85. When was the Indian Election Commission set up?

- a. 26 th November, 1950**
- b. 25 th January, 1950**
- c. 25 th February, 1950**
- d. 15 th August, 1950**

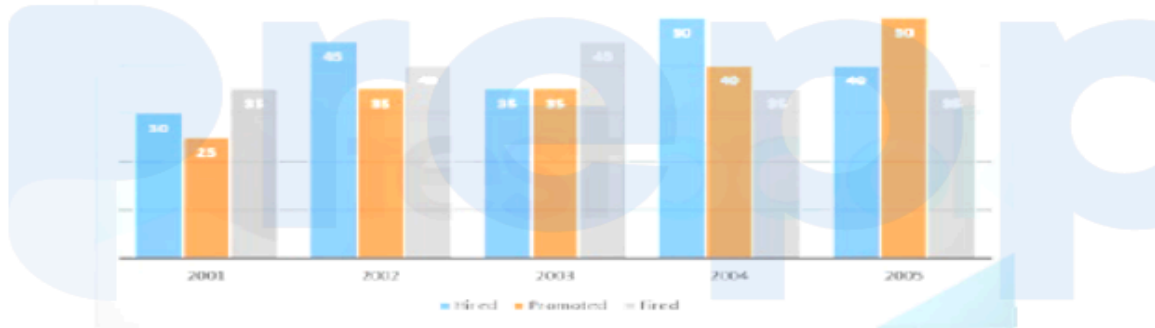
Ans. b

Explanation:

The correct answer is 25 th January 1950.

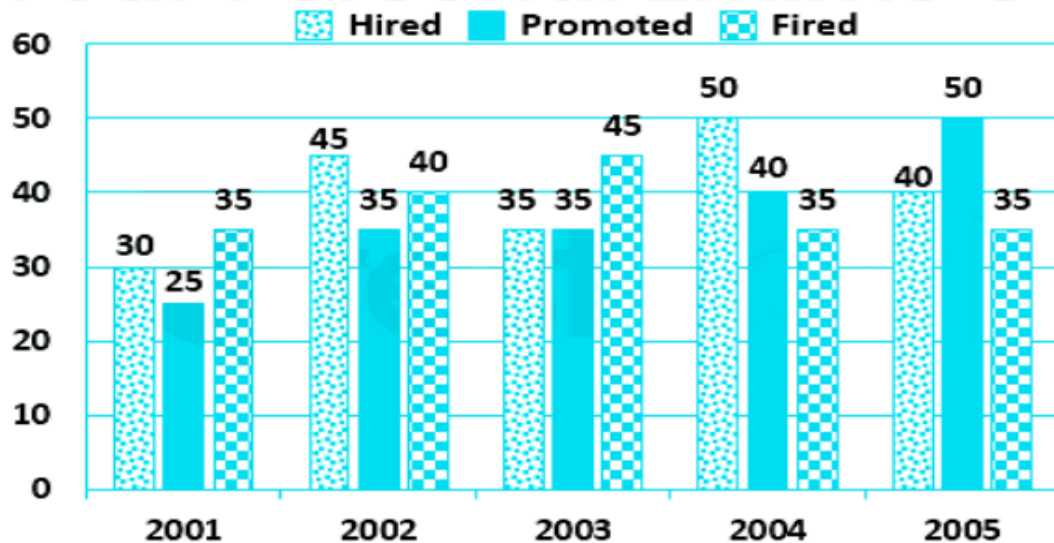
The Election Commission of India (ECI) is an autonomous constitutional authority responsible for administering Union and State election processes in India. It was established under the Constitution on 25 th January 1950 (celebrated as national voters day).

86. Observe the graph and answer the question given below. The bar graph represents a company's data about the number of employees hired, promoted and fired.



Your Personal Exams Guide

Production of Cotton Cloth



What is the difference between the number of employees who were fired in 2003 and the number of employees who were promoted in 2001?

- 10
- 20
- 5
- 15

Ans. b

Explanation: Calculation:

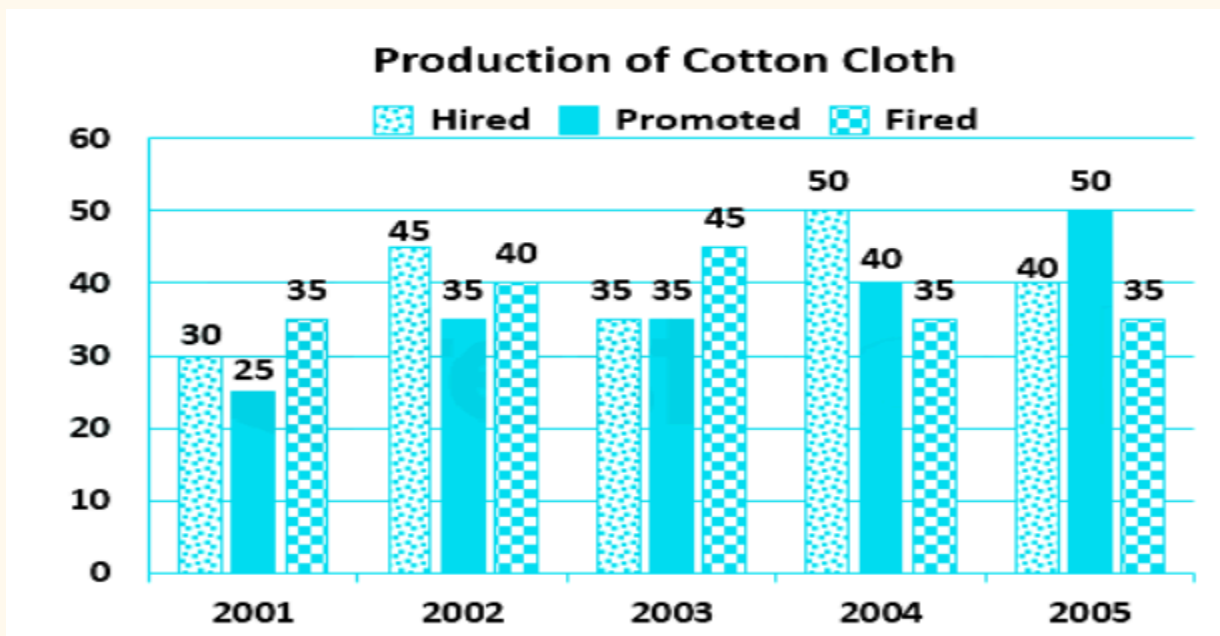
Number of employees who were fired in 2003 = 45

Number of employees who were promoted in 2001 = 25

Difference = $45 - 25 = 20$

∴ Required answer is 20

87. Observe the graph and answer the question given below. The bar graph represents a company's data about the number of employees hired, promoted and fired.



What is the ratio of the average number of employees hired during 2003-2005 to that of those promoted?

- a. 3 : 1
- b. 1 : 1
- c. 2 : 1
- d. 1 : 2

Ans. b

Explanation:

Calculation:

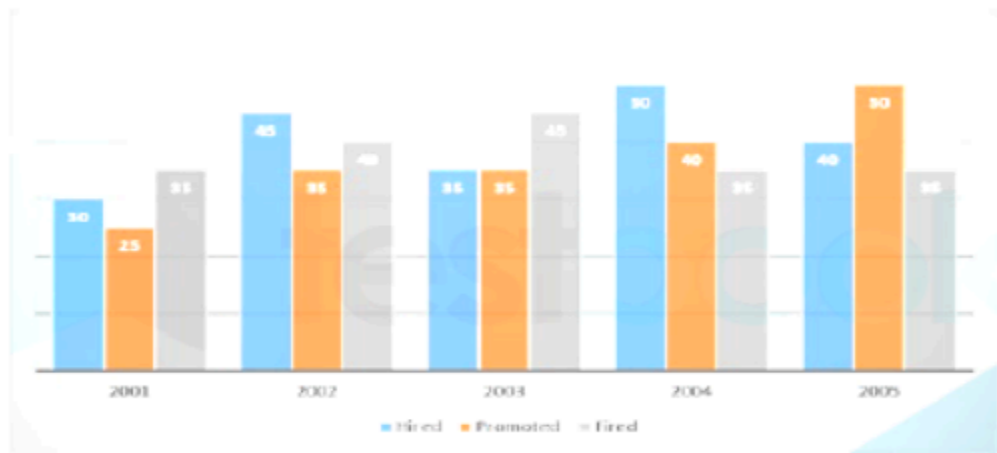
Total of the number of employees hired during 2003 - 2005 = $35 + 50 + 40$
 $\Rightarrow 125$

Total of the number of employees promoted during 2003 - 2005 = $35 + 40 + 50$
 $\Rightarrow 125$ Ratio = $125 : 125$

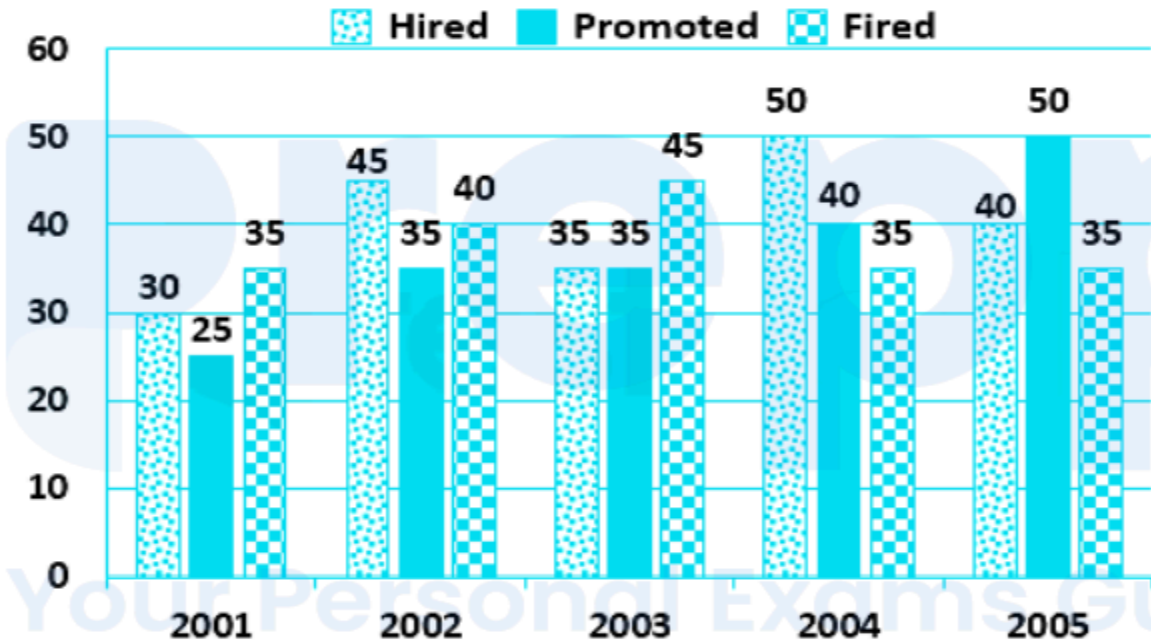
$\Rightarrow 1 : 1$

\therefore Required ratio is $1 : 1$

88. Observe the graph and answer the question given below. The bar graph represents a company's data about the number of employees hired, promoted and fired.



Production of Cotton Cloth



Assume there was no change in employee numbers other than the Hire and Fire data provided above. If the Employee strength in the company was 500 employees in 2001, what would be the approximate difference in the employees promoted, as a percentage of employee strength, for the years 2001 and 2004.

- a. 5%
- b. 15%
- c. 3%
- d. 8%

Ans. c

Explanation:

Calculation:

Number of employees promoted in 2001 = 25

Number of employees promoted in 2004 = 40

Difference = $40 - 25 = 15$

Now,

Employee strength in the company was 500 employees in 2001

And here we asked to calculate the percentage on the basis of employee strength

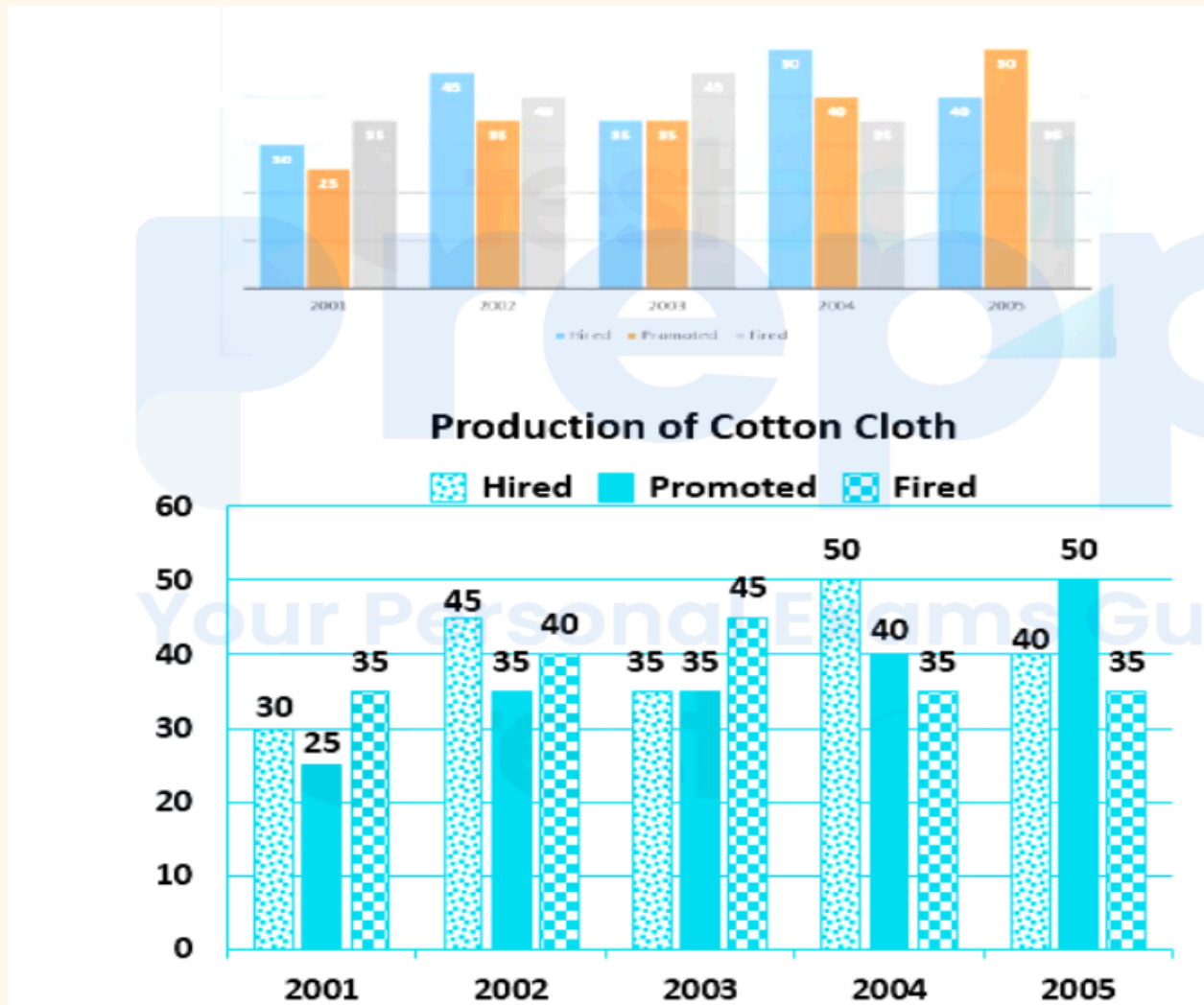
So,

Required % = $(15/500) \times 100$

$\Rightarrow 3\%$

\therefore Required percentage is 3

89. Observe the graph and answer the question given below. The bar graph represents a company's data about the number of employees hired, promoted and fired.



In which year was the number of employees fired highest as compared to the number of employees hired?

- a. 2001
- b. 2003
- c. 2004
- d. 2002

Ans. b

Explanation:

Calculation:

According to the graph in the year 2003 the number of employees fired is the highest among all other years.

∴ Required answer is Option 2

90. A question is given followed by two arguments. Decide which of the arguments is/are strong with respect to the question.

Question: Should all criminals be given severe punishments?

Arguments: 1. Yes. It will induce fear in criminals and crime would reduce greatly.

2. No. Human life is precious, and criminals should also be given a chance to improve.

- a. Only argument 2 is strong.**
- b. Neither argument 1 nor 2 is strong.**
- c. Both arguments 1 and 2 are strong.**
- d. Only argument 1 is strong**

Ans. c

Explanation:

1. Argument 1 states that by inducing fear of severe punishments, criminals can be stopped from committing more crimes and it implies that this example of punishment for criminals will deter others from involving in criminal activities, thereby reducing the crime rates. Thus, argument 1 is strong.

2. Argument 2 states that human life being precious should be treated with caution. It suggests moderate measures to deal with criminals by giving them a chance to repent and start their life afresh. It implies that harsh punishments could be too extreme for criminals. Thus, argument 2 is also strong.

Hence, both arguments 1 and 2 are strong

91. In a certain code language, COLOUR is written as 51714172320. Which word will be written as 61714141720 in that code?

- a. TALLER**
- b. TUTOR**
- c. OSCOR**
- d. DOLLOR**

Ans. d

Explanation:

The logic followed here is:-

$$\begin{array}{l} \text{C (3)} \xrightarrow{+2} 5 \\ \text{O (15)} \xrightarrow{+2} 17 \\ \text{L (12)} \xrightarrow{+2} 14 \\ \text{O (15)} \xrightarrow{+2} 17 \\ \text{U (21)} \xrightarrow{+2} 23 \\ \text{R (18)} \xrightarrow{+2} 20 \end{array}$$

Similarly,

$$\begin{array}{l} 6 \xleftarrow{-2} \text{D (4)} \\ 17 \xleftarrow{-2} \text{O (15)} \\ 14 \xleftarrow{-2} \text{L (12)} \\ 14 \xleftarrow{-2} \text{L (12)} \\ 27 \xleftarrow{-2} \text{O (15)} \\ 20 \xleftarrow{-2} \text{R (18)} \end{array}$$

Hence, "option 4" is the correct answer.

92. Out of the four numbers listed, three are alike in some manner and one is different. Select the odd one.

- a. 169
- b. 8
- c. 125
- d. 216

Ans. a

Explanation:

The logic followed here is:-

1. $169 = 13^2$.

2. $8 = 2^3$.

3. $125 = 5^3$.

4. $216 = 6^3$.

Hence, "option 1" is the correct answer.

93. Four words have been given, out of which three are alike in some manner and one is different. Select the odd one.

- a. Punch
- b. Wrist
- c. Fist
- d. Palm

Ans. a

Explanation:

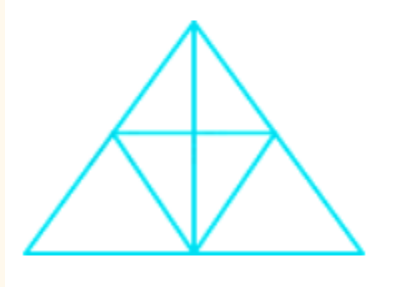
The logic followed here is:-

Wrist, Fist, and Palm are parts of a body but Punch is not a part of body.

Punch means to hit somebody/something hard with your closed hand.

Hence, "option 1" is the correct answer.

94. Find the number of triangles in the given figure.

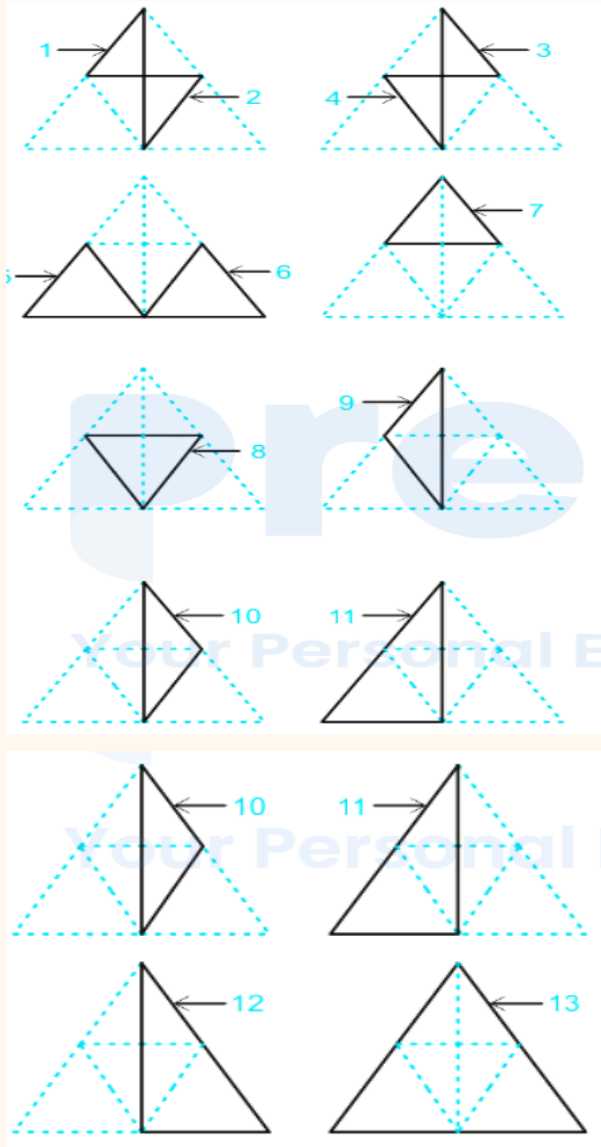


- a. 9
- b. 13
- c. 7
- d. 11

Ans. : b

Explanation:

The figure is for the triangle is:-



The number of triangles is 13.
Hence, "option 2" is the correct answer.

95. Please read the below equation and select an appropriate option from the following.

$$x + y = 10 ; y = x - 2$$

Quantity A is x.

Quantity B is y.

- a. Quantity B is greater.
- b. Impossible to determine.
- c. Quantity A is greater.
- d. Both quantities are equal.

Ans. c

Explanation:

Given: $x + y = 10$; $y = x - 2$

Quantity A is x .

Quantity B is y .

Concept used:

Linear algebraic equation solution.

Calculation: $x + y = 10$ (1)

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

Solving these two equations,

we get, $x = 6$ and $y = 4$

Hence, Quantity A and B are 6 and 4 respectively.

Thus, Quantity A is greater.

\therefore Quantity A is greater.

96. Select the option that is related to the third term in the same way as the second term is related to the first term. Gandhinagar : Ahmedabad ::

Lucknow : ?

- a. Kanpur**
- b. Gorakhpur**
- c. Allahabad**
- d. Varanasi**

Ans. a

Explanation:

Gandhinagar is the capital of Gujarat and Ahmedabad is the state's financial capital.

Similarly, Lucknow is the capital of Uttar Pradesh and Kanpur is the state's financial capital.

Hence, Kanpur is the correct answer.

97. Read the given statement and conclusions carefully and decide which of the assumptions is implicit in the statement.

Statement: "SAVE MONEY - BUY 1 GET 3" — Advertisement by a commercial brand.

Assumptions: 1. Brand sales increased profusely after the offer.

2. People are more attracted to buy if they are offered more than what they are already paying.

- a. Both assumptions 1 and 2 are implicit**
- b. Only assumption 1 is implicit**
- c. Only assumption 2 is implicit**
- d. Neither assumption 1 nor 2 is implicit.**

Ans. c

Explanation: Assumption 1 is not implicit because it says that "sales increased". This cannot be determined from an advertisement.

The purpose of an advertisement for an offer is to attract more people and an advertisement generally believes that people are more willing to buy when offers are provided. Therefore, assumption 2 is implicit.

Hence, only assumption 2 is implicit.

98. Sakshi attended to the following number of clients at the front desk during her internship for 15 days: 18, 20, 16, 17, 32, 17, 6, 16, 12, 13, 17, 28, 24, 45, 17. Find the average of the mode and median of the given data.

- a. 18.25**
- b. 17**
- c. 34**
- d. 19.5**

Ans. b

Explanation:

Given: Sakshi attended to the following number of clients at the front desk during her internship for 15 days:

18, 20, 16, 17, 32, 17, 6, 16, 12, 13, 17, 28, 24, 45, 17.

Concept used: The mode is the value that is repeatedly occurring in a given set

To find the median, the data should be arranged, first, in order of least to greatest

If the total number of observations given is odd, then the formula to calculate the median is:

Median = $\{(n + 1)/2\}$ th term

Calculation:

Mode = 17

As 17 is given 4 times which is the highest among other

Now, Arrangement of numbers in ascending order = 6, 12, 13, 16, 16, 17, 17, 17, 17, 18, 20, 24, 28, 32, 45

As here the total number of observations is 15

So, median = $[(15 + 1)/2]$ th observation

So, 8th observation is 17

Average of median and mode = $(17 + 17)/2 = 17$

\therefore The average of the mode and median is 17

99. If $\frac{8}{15}$ members of the scout team are girls, then what is the ratio of boys to girls in the team?

a. 7 : 8

b. 15 : 7

c. 8 : 7

d. 7 : 15

Ans. a

Explanation:

Given:

$\frac{8}{15}$ members of the scout team are girls,

Calculation:

Let total members be $15x$

So, no. of girls = $15x \times \frac{8}{15} = 8x$

So, no. of boys are $15x - 8x = 7x$

Ratio = $7x : 8x$

$\Rightarrow 7 : 8$

\therefore The ratio of boys to girls in the team is 7 : 8

100. In 8 years, Subhash will be 3 times as old as he is now. After how many years will Subhash be 5 times as old as he is now?

a. 16

b. 24

c. 20

d. 30

Ans. a

Explanation:

Given:

Age after 8 years = 3 × Present age

Calculation:

Let the present age of Subhash be x years

Let n years after the age will be 5 times of present age.

According to the question,

Age after 8 years = 3 × Present age

$$\Rightarrow x + 8 = 3x$$

$$\Rightarrow 2x = 8$$

$\Rightarrow x = 4$ After n years = 5 × Present age

$$\Rightarrow x + n = 5x$$

$$\Rightarrow 4 + n = 20$$

$$\Rightarrow n = 16 \text{ years}$$

∴ After 16 years the age of Subhash will be 5 times of present age.

