RRB NTPC 4 Jan 2021 Shift 2 Solution

1. A rhombus has one of its diagonal 65% of the other. A square is drawn using the longer diagonal as side. What will be the ratio of the area of the rhombus to that of the square?
a. 15 : 18
b. 40 : 13
c. 13 : 40
d. 18 : 15

Ans. c
Explanation:
Given:
A rhombus has one of its diagonal 65% of the other.
A square is drawn using the longer diagonal as a side.
Concept used:
Area of rhombus = ½(diagonals product)
Area of square = side × side
Calculations:
Let diagonal(larger) of rhombus be 100 cm
Let the diagonal(smaller) diagonal be 65 cm (65% of larger diagonal)
Area of Rhombus = ½(100 × 65) = 3250
Side of square = 100 cm (equal to larger diagonal)
Area of square = (100 × 100) = 10000
Ratio,
⇒ Rhombus : Square = 3250 : 10000
⇒ 13 : 40
∴ The correct choice is option 3.

2. How many members are nominated by the President of India in the Lok Sabha from the Anglo-Indian community?
a. 4
b. 6

c. 2
d. 3

Ans. c
Explanation:
The correct answer is 2.
The President can nominate up to two members from the Anglo-Indian community.

3. GSAT-31 is an/a _____
a. Telecommunication Satellite
b. Experimental Satellite
c. Polar Satellite
d. Navigational Satellite

Ans. a
Explanation:
The correct answer is Telecommunication Satellite.
Key Points
GSAT-31 is a Telecommunication Satellite.

4. Simplify.
$25 \div 10 - \{\frac{7}{4} \times \frac{1}{3}\} \times \frac{6}{5} + \frac{14}{3} \times \frac{9}{10} - \{\frac{1}{5} \div \frac{1}{25}\}$
a. 11
b. 10
c. 5
d. 1

Ans. d
Explanation:
Calculations :
Solve as per above given steps
$25 \div 10 - \{\frac{7}{4} \times \frac{1}{3}\} \times \frac{6}{5} + \frac{14}{3} \times \frac{9}{10} - \{\frac{1}{5} \div \frac{1}{25}\}$
⇒ 25 ÷ 10 - (7/12) × (6/5) + (14/3) × (9/10) - 5
⇒ (5/2) - (7/10) + (21/5) - 5
⇒ (18/10) + (21/5) - 5

⇒ (60/10) - 5
⇒ 6 - 5
⇒ 1
∴ The correct choice is option 4.

5. By default, how many worksheets are present in the workbook of Excel MS Office- 2010?
a. 4
b. 3
c. 2
d. 1

Ans. b
Explanation:
The correct answer is 3.
In Excel MS Office- 2010, there are three worksheets present by default.

6. A number is first decreased by 20% and then increased by 15%. The number so obtained is 64 less than the original number. The original number is:
a. 700
b. 800
c. 850
d. 600

Ans. b
Explanation:
Given:
A number is first decreased by 20% and then increased by 15%.
The number so obtained is 64 less than the original number
Calculations:
Let the number be 100x
Number after decrement of 20% = 100x - 20% of 100x
⇒ 80x
Number after 15% increment = 80x + 15% of 80x
⇒ 92x
According to the question
100x - 92x = 64 (difference of the original and new number)

⇒ 8x = 64
⇒ x = 8
Original number = 100x = 800
∴ The correct choice is option 2.

7. Ram Kumar bought two LED TV sets for Rs. 41,000. By selling one at a profit of 20% and the other at a loss of 15%, he found that the selling prices of both the TV sets are the same. Find his overall gain or loss.
a. Rs. 200 loss
b. Rs. 400 loss
c. Rs. 200 gain
d. Rs. 400 gain

Ans. a
Explanation:
Given:
Ram Kumar bought two LED TV sets for Rs. 41,000, selling one at a profit of 20% and the other at a loss of 15%
Calculations:
Let the cost price of items be Rs. ‘x’ and Rs '41000-x’
He got 20% profit on Rs x & 15% loss on Rs ‘41000 - x’
Selling price (at profit) = x + 20% of x = 120% of x
Selling price (at loss) = 41000 - x - 15% of 41000 - x = 85% (41000 - x)
According to the question
120% of x = 85% (41000 - x) (selling price are the same)
⇒ 120x = 85 × (41000 - x)
⇒ 24x = 17 × (41000 - x)
⇒ 41x = 17 × 41000
⇒ x = 17000 and 41000 - x = 24000
Total selling price = 120% of x + 85%(41000 - x)
⇒ 120% of 17000 + 85% of 24000
⇒ 20400 + 20400
⇒ 40800
So,
Loss = Cost Price - Selling Price
⇒ 41000 - 40800
⇒ 200 Rupees

∴ The correct choice is option 1.

8. Find the greatest number of five digits, which is exactly divisible by 468.
a. 99468
b. 99486
c. 99864
d. 99684

Ans. d
Explanation:
Calculations:
Number = Division × Quotient + Remainder
Let the number be 99999 in this case
99999 = 468 × 213 + 315
99999 - 315 = 468 × 213
So,
Highest 5 digit number divisible by 468 = 99999 - 315
⇒ 99684
∴ The correct choice is option 4.

9. The English Language continued to be used for official purposes of the Union via section 3 of the Official Language Act which came into force in the year :
a. 1963
b. 1965
c. 1970
d. 1960

Ans. b
Explanation:
The correct answer is1965.
Official Languages Act, 1963:
This Act may be called the Official Languages Act, 1963.
Section 3 shall come into force on the 26th day of January, 1965 and the remaining provisions of this Act shall come into force on such date as the Central Government may, by notification in the Official Gazette, appoint and different dates may be prescribed for different provisions of this act.

10. 24 mango trees, 56 apple trees and 72 orange trees have to be planted in rows such that each row contains the same number of trees of one variety only. Find the minimum number of rows in which the above mentioned trees may be planted.
a. 17
b. 15
c. 19
d. 18

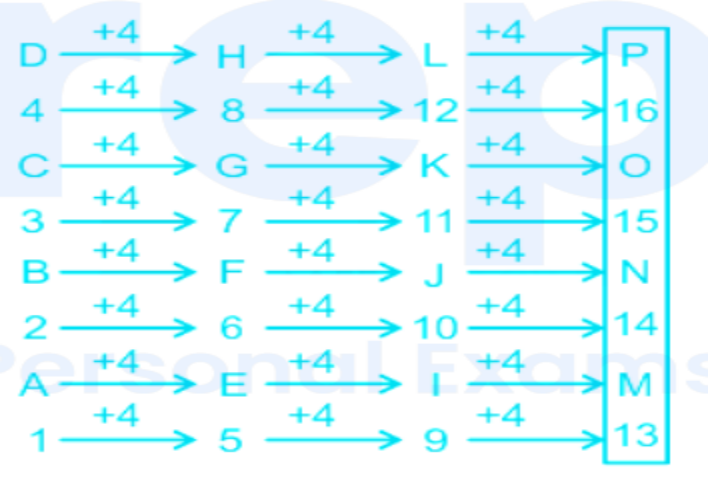
Ans. c
Explanation:
Given:
24 mango trees, 56 apple trees and 72 orange trees have to be planted in rows such that each row contains the same number of trees of one variety only.
Calculations:
There are 24 mangoes trees, 56 apple trees & 72 Orange trees.
To get the minimum number of rows, we need maximum trees in each row.
In each row, we need the same number of trees
So we need to calculate HCF
HCF of 24, 56 & 72
⇒ $24 = 2^3 \times 3$
⇒ $56 = 2^3 \times 7$
⇒ $72 = 2^3 \times 3^2$
HCF = $2^3 = 8$
Number of minimum rows = (24 + 56 + 72)/8 = 152/8
⇒ 19
∴ The correct choice will be option 3.

11. Two cars start from Ahmedabad and run in opposite directions with one car's speed being 200 km/h more than the other. If they are 4500 km apart after 9 h, then the sum of the speeds of both the cars is:
a. 150 km/h
b. 500 km/h
c. 250 km/h
d. 350 km/h

Ans. b
Explanation:
Given:
Two cars start from Ahmadabad and run in opposite directions with one car's speed being 200 km/h more than the other.
They are 4500 km apart after 9 h.
Concept used:
Distance = Speed × Time
Calculations:
Let the speed of one car be 'x' km/h & other be '200 + x' km/h
Distance = Distance by 1
st car + Distance by 2
nd car
4500 = (x) × 9 + (200 + x) × 9 (time = 9 hours)
⇒ 500 = x + 200 + x
⇒ 2x = 300
⇒ x = 150 & (200 + x) = 350
Sum of speeds = 350 + 150
⇒ 500
∴ The correct choice is option 2

12. Select the alphanumeric cluster from among the given options that can replace the question mark (?) in the following series.
D4C3B2A1, H8G7F6E5, LI2K11J10I9, ?
a. QITPIGOLSNI4
b. PIORISSI4T13
c. PI6O15N14M13
d. MISNI6O17P18

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



Hence, ‘ PI6O15N14M13 ’ is the correct answer.

13. Ina certain code language, DESTINY is written as YNITSED. How will DIGNITY be written as in that language?
a. YGITNID
b. YTINGID
c. YINGTID
d. YIGTIND

Ans. b
Explanation:
The logic is:

Similarly

Hence, ‘ YTINGID ’ is the correct answer.

14. Which is the fat-storing tissue in our body?
a. Areolar tissue
b. Adipose tissue
c. Epithelial tissue
d. Vascular tissue

Ans. b
Explanation:
The correct answer is Adipose tissue.
Adipose tissue is the fat-storing tissue in our body.

15. The captain of a cricket team of 11 members is 35 years old and the wicket-keeper is 5 years older than the captain. If the ages of these two are excluded, the average age of the remaining players is three years less than the average age of the whole team. What is the average age of the whole team?
a. 24 years
b. 28 years
c. 26 years
d. 25 years

Ans. a
Explanation:
Given:
The captain of a cricket team of 11 members is 35 years old and the wicket-keeper is 5 years older than the captain. If the ages of these two are excluded, the average age

of the remaining players is three years less than the average age of the whole team.
Concept used:
Average = Sum of all observation/No.of observations
Calculations:
Age of captain = 35
Age of wicketkeeper = 35 + 5 = 40
Let the average age of all players be x
When captain & wicketkeeper excluded average age is 'x – 3' years
Age of whole team = 11 × x = 11x
Age of team when captain and wicket keeper excluded = 9(x- 3)
So,
⇒ 11x - (35 + 40) = 9(x - 3)
⇒ 11x = 9x - 27 + 75
⇒ 2x = 75 - 27
⇒ 2x = 48
⇒ x = 24
∴ The average age of whole team is 24 years.

16. The law that permitted widows to remarry (Hindu Widows' Remarriage Act) was passed in the year:
a. 1858
b. 1855
c. 1856
d. 1854

Ans. c
Explanation:
The correct answer is 1856.
Hindu Widows' Remarriage Act was passed on 16th July1856.

17. The Southernmost tip of Indian territory is _____.
a. Indira point
b. Kanyakumari
c. Karondi
d. Cape Comorin

Ans. a

Explanation:
The correct answer is Indira point.
The Southernmost tip of Indian territory isIndira point.

18. Which city was the cleanest city of India (in category Cities >10 Lakh) as per Swachh Survekshan 2020?
a. Bhopal
b. Indore
c. Chandigarh
d. Jaipur

Ans. b
Explanation:
The correct answer is Indore.
Indore was the cleanest city of India as perSwachh Survekshan 2020.

19. Find the rate of interest for a sum that becomes $\frac{14641}{10000}$ times of itself in 4 years compounded annually.
a. 20%
b. 10%
c. 15%
d. 12%

Ans. b
Explanation:
Given:
A sum becomes (14641/10000) times in 4 years.
Concept used:
Principle [1+(Rate)/100]
t = Amount (where t is time)
Calculations:
Let the principle be 10000,
Amount = 10000 × (14641/10000) = 14641
So,
10000[1+(R/100)4 = 14641
⇒ [1+(R/100) 4 = 14641/10000
⇒ [1+(R/100)]4 = (11/10)4

⇒ [1+(R/100)] = 11/10
⇒ R = 10%
∴ The correct choice is option 2.

20. Eminent Social reformer and Women's education activist Pandita Ramabai Sarasvati was a great scholar of _____
a. English
b. Marathi
c. Sanskrit
d. Hindi

Ans. c
Explanation:
The correct answer is Sanskrit.
Eminent Social reformer and Women's education activist Pandita Ramabai Sarasvati was a great scholar of Sanskrit.

21. When was the first Passenger train run in India?
a. 1857
b. 1854
c. 1853
d. 1856

Ans. c
Explanation:
The correct answer is 1853.
The first Passenger train ran in1853 in India.

22. In Telecom field, ISP stands for:
a. Internet Speed Protocol
b. Internet Speed Provider
c. Internet Service Provider
d. Internet Service Protocol

Ans. c
Explanation:
The correct answer is Internet Service Provider.

23. What is the other name of Newton's first law of motion?
a. Law of movement
b. Law of displacement
c. Law of inertia
d. Law of momentum

Ans. c
Explanation:
The correct answer is Law of inertia.
Law of inertia
It is the other name of Newton's first law of motion .

24. Who has won the Nine Dots Prize Award 2019?
a. Chetan Bhagat
b. James Williams
c. Sandeep Maheshwari
d. Annie Zaidi

Ans. d
Explanation:
The correct answer is Annie Zaidi.
Annie Zaidi won the Nine Dots Prize Award 2019.

25. Find the sum of the numbers between 400 and 500 such that when 8, 12, and 16 divide them, it leaves 5 as remainder in each case.
a. 922
b. 932
c. 942
d. 912

Ans. a
Explanation:
Calculations:
Numbers are 8, 12 and 16 that must divide numbers between 400 & 500 & get remainder 5
To find the multiple of different numbers, we need to find out the LCM

LCM of 8, 12, 16
$8 = 2^3$, $12 = 2^2 \times 3$, $16 = 2^4$
LCM = $2^4 \times 3 = 48$
Number pattern = 48k + 5 (Remainder)
Number between 400 & 500
Smallest number = 48 × 9 + 5 = 437
Largest number = 48 × 10 + 5 = 485
So,
Sum of numbers = 437 + 485
⇒ 922
∴ The correct choice is option 1.

26. Simplify.
17 - 4 × (5.4 ÷ 9) + 6 × 1.9
a. 26
b. 22
c. 24
d. 28

Ans. a
Explanation:
Calculations:
Solve as per above given method
⇒ 17 – 4 × (5.4 ÷ 9) + 6 × 1.9
⇒ 17 - 4 × 0.6 + 11.4
⇒ 17 - 2.4 + 11.4
⇒ 17 + 9
⇒ 26
∴ The correct choice is option 1.

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

a. 8
b. 9
c. 7
d. 5

Ans. a
Explanation:
The logic follows here is: Cross relation,
Figure (1) → 10 × 8 = 80
Figure (2) → 9 × 7 = 63
Similarly,
Figure (3) → 8 × 6 = 48
implies, ? = 8

Hence, 8 is the correct answer.

28. Sushil Kumar won the Olympic medal for:
a. Wrestling
b. Boxing
c. Weightlifting
d. Shooting

Ans. a
Explanation:
The correct answer is Wrestling.
Sushil Kumar won the Olympic medal in wrestling.

29. By selling a car for Rs. 1,20,000, David makes a profit of 20%. What will be the selling price of the car if he sells it at 30% profit?
a. Rs. 1,40,000
b. Rs. 1,30,000
c. Rs. 1,25,000
d. Rs. 1,35,000

Ans. b
Explanation:
Given:
By selling a car for Rs. 1,20,000, David makes a profit of 20%.
Calculations:
Let the cost of car be x
Selling price = cost price + 20% of cost price
By selling a car for Rs. 1,20,000, David makes a profit of 20%
⇒ 120% of x = 120000
⇒ x = 100000
Selling price (at 30% profit) = 100000 + 30% of 100000
⇒ 130000
∴ The correct choice is option 2

30. As of 2020, the only person who has received the Nobel prize for physics twice is:
a. Marie Curie
b. John Bardeen
c. Arthur Ashkin
d. Lawrence Bragg

Ans. b
Explanation:
The correct answer is John Bardeen.
John Bardeenis the only person to be awarded the Nobel Prize in Physics twice.

31. Which acid is present in the ant sting?
a. Tartaric acid
b. Methanoic acid

c. Lactic acid
d. Acetic acid

Ans. b
Explanation:
The correct answer is Methanoic acid.
Methanoic acid is present in the ant sting.

32. If a + b + c = 14, ab + bc + ca = 47 and abc = 15 then find the value of a3+ b3+c3.
a. 815
b. 825
c. 835
d. 845

Ans. a
Explanation:
Given:
a + b + c = 14, ab + bc + ca = 47 and abc = 15
Concept used:
$a^3 + b^3 + c^3 - 3abc = (a + b + c) \times [(a + b + c)^2 - 3(ab + bc + ca)]$
Calculations:
$a^3 + b^3 + c^3 - 3abc = 14 \times [(14)^2 - 3 \times 47]$
$\Rightarrow a^3 + b^3 + c^3 - 3 \times 15 = 14(196 - 141)$
$\Rightarrow a^3 + b^3 + c^3 = 14(55) + 45$
$\Rightarrow 770 + 45$
$\Rightarrow 815$
$\therefore$ The correct choice is option 1.

33. Find the value of tan 15° + cot 15°
a. 4
b. 2
c. 6
d. 8

Ans. a
Explanation:
Calculations:

cot15° + tan15°
⇒ (cos15°/sin15°) + (sin15°/cos15°)
⇒ (cos
2
15° + sin
2
15°)/(sin15° cos 15°) (Sin
2θ + cos
2θ = 1)
⇒ 1/(sin15° cos15°)
Multiply and divide equation by 2
⇒ 2/(2 sin15° cos15°) (2 sinθ cosθ = sin2θ)
⇒ 2/sin30° (sin30° = 1/2)
⇒ (2/1/2) = 2 × 2
⇒ 4
∴The correct choice is option 1.

34. Where was the first British presidency established in India?
a. Surat
b. Kolkata
c. Mumbai
d. Goa

Ans. a
Explanation:
The correct answer is Surat.
The first British presidency was established inSuratin India.

35. Anil lent Rs. 7,200 to Dubey for 3 years and Rs. 8,400 to Raghav for 4 years on simple interest at the same rate of interest and received Rs. 4,968 in total from them as interest. Find the rate of interest p.a.
a. 9%
b. 10%
c. 12%
d. 8%

Ans. a
Explanation:
Given:
Anil lent Rs. 7,200 to Dubey for 3 years and Rs. 8,400 to Raghav for 4 years on simple interest at the same rate of interest and received Rs. 4,968 in total from them as interest
Formula used:
Interest = Principle × Rate × Time/100
Calculations:
Interest (on Rs. 7200) = (7200 × 3 × R)/100 = 216 R
Interest (on Rs. 8400) = (8400 × 4 × R)/100 = 336R
According to the question
⇒ 216 R + 336 R = 4968
⇒ 552 R = 4968
⇒ R = 9%
∴ The correct choice is option 1.

36. 20 men and 15 boys can do a piece of work in 10 days. 25 men and 10 boys can do it in 9 days. Find the ratio of the daily work done by a man to that of a boy.
a. 5 : 12
b. 5 : 14
c. 12 : 5
d. 14 : 5

Ans. c
Explanation:
Given:
20 men and 15 boys can do a piece of work in 10 days and 25 men and 10 boys can do it in 9 days.
Concept used
Work = Working capacity × total time
Calculations:
Let the working capacity of men be ‘m’
Let the working capacity of boys be ‘b’
According to the question
⇒ (20 m + 15 b) × 10 = (25 m + 10 b) × 9

⇒ 200 m + 150 b = 225 m + 90 b
⇒ 60 b = 25 m
⇒ 12 b = 5 m
⇒ b/m = 5/12
So,
⇒ m : b = 12 : 5
∴ The correct choice is option 3.

37. If $x + x^{-1} = 7$, then, find the value of $x^3 + x^{-3}$.
a. 332
b. 312
c. 342
d. 322

Ans. d
Explanation:
Given:
$x + x^{-1} = 7$
Formula used:
$x^3 + x^{-3} = (x + x^{-1})3 - 3(x + x^{-1})$
Calculations:
$x^3 + x^{-3} = (7)^3 - 3 \times 7$
⇒ 343 - 21
⇒ 322
∴The correct choice is option 4.

38. A few lead spheres of diameter 6 cm are dropped into a cylindrical beaker containing some water such that they are fully submerged. If the diameter of the beaker is 9 cm and the water level has risen by 32 cm, find the number of lead spheres dropped into the beaker.
a. 14
b. 18
c. 15
d. 16

Ans. b

Explanation:
Given:
The radius of the sphere is 3 cm
Radius & height of cylinder are 4.5 cm & 32cm
Formula used:
The volume of sphere = $4/3\pi r^3$
The volume of cylinder = $\pi r^2 h$
Calculations:
The volume of sphere inserted = volume of water risen
Radius of sphere = 6/2= 3 cm
Radius of cylinder = 9/2 = 4.5
So,
$(4/3)\pi \times (3)^3 \times$ Number of sphere = π (4.5) × (4.5) × 32
⇒ Number of sphere = 18
∴ The correct choice is option 2

39. Find the smallest number by which 35280 must be divided so that the quotient is a perfect square.
a. 7
b. 3
c. 5
d. 4

Ans. c
Explanation:
Calculations:
Checking to get quotient for each option
35280/7 = 5040
35280/3 = 11760
35280/5 = 7056
35280/4 = 8820.
We can see only 7056 (84^2) is a perfect square
∴ The correct choice is option 3

40. The sum of two numbers is 288 and their HCF is 16. How many pairs of such numbers can be formed?

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

Ans. a
Explanation:
Given:
The sum of two numbers is 288 and their HCF is 16
Calculations:
Let the ratio of number be x : y
So the numbers will be 16x & 16y (HCF is an integral part of a number)
According to the question
16x + 16y = 288
⇒ 16(x + y) = 288
⇒ x + y = 18
Pairs of x, y can be (1, 17) (5, 13) (7, 11)
So there can be only 3 pairs.
∴ The correct choice is option 1.

41. If x and y are two positive numbers such that $\sqrt{x} = 8$ and $x^2 + y = 4112$, then the find the value of $\sqrt{y}$.
a. 6
b. 4
c. 2
d. 16

Ans. b
Explanation:
Given:
$\sqrt{x} = 8$ and $x^2 + y = 4112$
Calculations:
$x^2 + y = 4112$
⇒ $64^2 + y = 4112$ ($\sqrt{x} = 8$, $x = 64$)
⇒ $4096 + y = 4112$
⇒ $y = 16$
⇒ $\sqrt{y} = 4$

∴ The correct choice is option 2.

42. Simplify.
15 - 6.3 ÷ 7 + 3 × 1.3 - 2
a. 17
b. 18
c. 16
d. 19

Ans. c
Explanation:
Concept used:
Calculations:
Solve as per above given order
15 - 6.3 ÷ 7 + 3 × 1.3 - 2
⇒ 15 - 0.9 + 3.9 - 2
⇒ 15 + 3 - 2
⇒ 16
∴ The correct choice is option 3.

43. When was the Atomic Energy amendment bill passed by parliament to allow joint ventures between public sector undertakings in nuclear power generation?
a. 2015
b. 2012
c. 2014
d. 2010

Ans. a
Explanation:
The correct answer is 2015.
In2015, the Atomic Energy amendment bill passed by parliament to allow joint ventures between public sector undertakings in nuclear power generation.

44. Inventor of Bluetooth is _____
a. Charles Simonyi
b. Bill gates

c. Jaap Haartsen
d. Paul Allen

Ans. c
Explanation:
The correct answer is Jaap Haartsen.
Inventor of Bluetooth is Jaap Haartsen.

45. Which of the following gases is a noble gas?
a. Nitrogen
b. Argon
c. Fluorine
d. Oxygen

Ans. b
Explanation:
The correct answer is Argon.
Argonis a noble gas.

46. If 'all philosophers are rationalists' and 'Socrates is a philosopher', then which of the given conclusions follow?
a. Socrates is not a rationalist.
b. Socrates is a rationalist.
c. All rationalists are philosophers.
d. No philosophers are rationalists.

Ans. b
Explanation:
The correct answer is Socrates is a rationalist.
Socrates was a Greek philosopher from Athens who is credited as a founder of Western philosophy and the first moral philosopher of the ethical tradition of thought.
Socrates is not a rationalist. → False (As, all philosophers are rationalists and Socrates is a philosopher → Socrates is a rationalist)
Socrates is a rationalist. → True (As, all philosophers are rationalists and Socrates is a philosopher → Socrates is a rationalist)
All rationalists are philosophers. → False (As, all philosophers are rationalists →

Some rationalists are philosophers)
No philosophers are rationalists. → False (As, all philosophers are rationalists)
Hence, ‘ option 2 ’ is the correct answer.

47. If 'A’ represents ‘subtraction’, “B’ represents ‘multiplication’, ‘C’ represents ‘division’ and “D’ represents ‘addition’, then what is the value of (3 B 4 D 5 A 6) C 1?
a. 1
b. 10
c. 0
d. 11

Ans. d
Explanation:
Given equation: (3 B 4 D 5 A 6) C 1?
After replacing the symbols by their meaning, we get:
(3 × 4 + 5 - 6) ÷ 1
= (12 + 5 - 6) ÷ 1
= (17 - 6) ÷ 1
= 11 ÷ 1
= 11
Hence, ‘ 11 ’ is the correct answer.

48. The average weight of P, Q and R is 58 kg. If the average weight of P and Q is 54 kg and that of Q and R is 48 kg, then the weight of Q is:
a. 28 kg
b. 26 kg
c. 30 kg
d. 32 kg

Ans. c
Explanation:
Given:
The average weight of P, Q and R is 58 kg.
The average weight of P and Q is 54 kg and that of Q and R is 48 kg.
Concept used:
Average = Total sum of observations/ Number of observations

Calculations:
(P + Q + R) /3 = 58
⇒ P + Q + R = 174 kgs
Now
(P + Q)/2 = 54
⇒ P + Q = 108
⇒ (Q + R)/2 = 48
⇒ Q + R = 96
Weight of Q = weight of (Q + R) + weight of (P + Q) – weight of (P + Q + R)
⇒ 96 + 108 – (174)
⇒ 204 – 174
⇒ 30 kg
∴ The correct choice is option 3.

49. As of November 2020, how many nuclear power reactors are operating in India?
a. 22
b. 21
c. 20
d. 23

Ans. a
Explanation:
The correct answer is 22.
As of November 2020,India has 22 reactors with a total capacity of 6780 MW in operation and one reactor.

50. When the integer n is divided by 9, the remainder is 4. What is the remainder if 12n is divided by 9?
a. 2
b. 4
c. 5
d. 3

Ans. d
Explanation:
Given:

When the integer n is divided by 9, the remainder is 4
Calculations:
n = 9k + 4 (remainder is 4)
Now,
12n = 12(9k + 4)
⇒ 12n = 108k + 48
⇒ 12n = 108k + 45 + 3
⇒ 12n = 9(12k + 5) + 3
So, Remainder is 3
∴ The correct choice is option 4.

51. As on Nov, 2020, where is India's newest high court built?
a. Amravati
b. Nellore
c. Warangal
d. Vishakhapatnam

Ans. a
Explanation:
The correct answer is Amravati.
As on Nov, 2020, India's newest high court is built in Amravati.

52. ABC is a right-angled triangle. A circle is inscribed in it. The length of the two sides containing the right angle are 10 cm and 24 cm. Find the radius of the circle.
a. 3 cm
b. 5 cm
c. 2 cm
d. 4 cm

Ans. d
Explanation:
Given:
ABC is a right-angled triangle. A circle is inscribed in it.
The length of the two sides containing the right angle are 10 cm and 24 cm
Calculations:

Hypotenuse² = 10² + 24² (Pythagoras theorem)
Hypotenuse = √676 = 26
Radius of the circle (incircle) inside a triangle = (Sum of sides containing right angle – Hypotenuse)/2
⇒ (10 + 24 - 26)/2
⇒ 8/2
⇒ 4
∴ The correct choice is option 4.

53. The ratio of the incomes of Amar and Komal is 5 : 4 and the ratio of their expenditure is 2 : 1. If each of them saves Rs. 6,000 per month, find Amar's income.
a. Rs. 12000
b. Rs. 8000
c. Rs. 6000
d. Rs. 10000

Ans. d
Explanation:
Given:
Ratio of income of Amar & Komal is 5 : 4
Ratio of expenditure of Amar & Komal is 2 : 1
They both saves 6000 Rupees
Calculations:
Let the income of Amar & Komal be 5x & 4x
Let the expenditure of Amar and Komal be 2y & y.
We know that
Savings = Income - Expenditure
So
⇒ 5x – 2y = 6000 ----(1) (saving of Amar)
⇒ 4x – y = 6000 ----(2) (saving of Komal)
Solving both equations, we get
⇒ x= 2000 & y = 2000
Amar's income = 5x = 10000
∴ The correct choice is option 4.

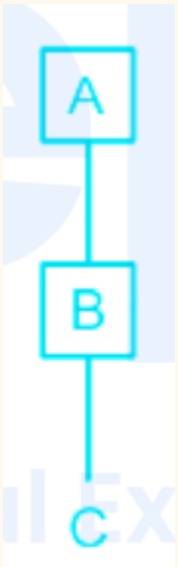
54. Who founded the Muhammadan Anglo-Oriental college in 1875 which later

became Aligarh Muslim University?
a. Zakir Hussain
b. Maulana Abul Kalam Azad
c. Syed Ahmed Khan
d. Mohammad Ali Jinna

Ans. c
Explanation:
The correct answer is Syed Ahmed Khan.
Syed Ahmed Khan founded the Muhammadan Anglo-Oriental college in 1875 which later became Aligarh Muslim University.

55. If A is the father of B and B is the father of C, then how is C related to A?
a. Granddaughter
b. Grandson
c. Grandfather
d. Grandchild

Ans. d
Explanation:



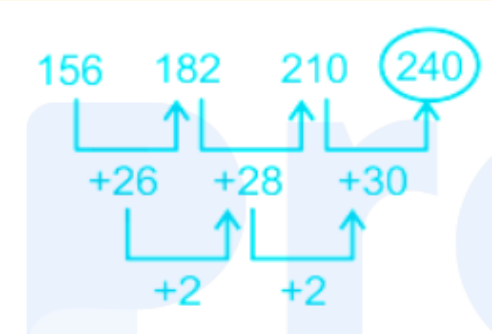
Clearly, C is the grandchild of A.
Hence, ‘ Grandchild ’ is the correct answer.

56. Select the option that is related to the third term in the same way as the second term is related to the first term.
Virus : Disease :: Exercise : ?
a. Walking
b. Cycling
c. Health
d. Jogging

Ans. c
Explanation:
The logic is:
Virus : Disease → Virus causes diseases.
Similarly,
Exercise : ? → Regular excercise leads to good health.
Hence, ‘ Health ’ is the correct answer.

57. Select the number from among the given options that can replace the question mark (?) in the following series.
156, 182, 210, ?
a. 202
b. 210
c. 240
d. 236

Ans. c
Explanation:
The logic is:



Hence, ‘ 240 ’ is the correct answer.

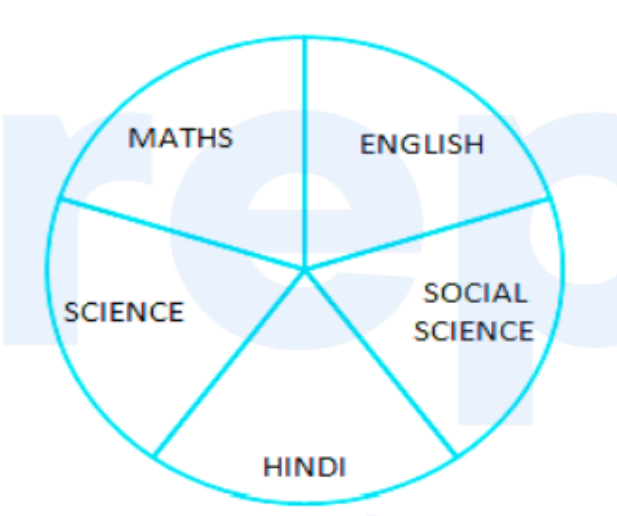
58. Who is considered the father of white revolution in India?
a. Arun Krishnan
b. MS Swaminathan
c. Verghese Kurien
d. Indira Gandhi

Ans. c
Explanation:
The correct answer is Verghese Kurien.
Verghese Kurien is considered the father of the white revolution in India.

59. When was Reserve Bank of India established?
a. April 1948
b. April 1935
c. April 1945
d. April 1936

Ans. b
Explanation:
The correct answer is April 1935.
The Reserve Bank of India was established in April 1935.

60. Observe the figure given and answer the question below.



If the total number of students is 120, and the number of students is

distributed equally across all the subjects, how many students study languages?
a. 36
b. 12
c. 24
d. 48

Ans. d
Explanation:
Given:
All 5 subjects have equal number of students
Calculations:
Number of students in each subject = Total students/ Total subjects
Number of students in each subject = 120/5 = 24
Number of students in each language = Students of English + Students of Hindi = 24 + 24
⇒ 48
∴ The correct choice is option 4.

61. The Buland Darwaza at Fatehpur Sikri was erected by Akbar to celebrate his conquest of _____.
a. Gujarat
b. Bengal
c. Mewar
d. Kashmir

Ans. a
Explanation:
The correct answer is Gujarat.
The Buland Darwaza at Fatehpur Sikri was erected by Akbar to celebrate his conquest of Gujarat.

62. When was Project Tiger launched in India?
a. 1970
b. 1973
c. 1975
d. 1980

Ans. b
Explanation:
The correct answer is 1973.
The Govt. of India had launched “Project Tiger” on 1st April1973to promote the conservation of the tiger.

63. Which year was the construction of Jama Masjid of Delhi completed?
a. 1652
b. 1656
c. 1655
d. 1653

Ans. b
Explanation:
The correct answer is 1656.
Jama Masjid was built by the Mughal emperor Shah Jahan between 1644 and 1656

64. Who has written the narrative history 'India after Gandhi’?
a. Malathi Rao
b. Ramachandra Guha
c. Rupa Bajwa
d. Arundhati Roy

Ans. b
Explanation:
The correct answer is Ramachandra Guha.
'India after Gandhi’ is written byRamchandra Guha.

65. E is older than C. D is older than C but younger than E. A is younger than B and C. C is older than B. Who is the youngest?
a. C
b. D
c. B
d. A

Ans. d
Explanation:

1. E is older than C.
E > C
2. D is older than C but younger than E.
E > D > C
3. A is younger than B and C.
B > A and C > A
4. C is older than B.
C > B
Combining all the statements together, we get:
E > D > C > B > A
Clearly, A is the youngest.
Hence, ‘ A’ is the correct answer.

66. Second Vande Bharat Express is running between _____
a. New Delhi to Lucknow
b. New Delhi to Katra
c. New Delhi to Mumbai
d. New Delhi to Kanpur

Ans. b
Explanation:
The correct answer is New Delhi to Katra.
Second Vande Bharat Express is running between New Delhi to Katra.

67. Currently, how many languages are listed in the eighth schedule of the Constitution?
a. 24
b. 21
c. 22
d. 20

Ans. c
Explanation:
The correct answer is 22.
The Eighth Schedule to the Constitution of India consists of the following 22 languages.

68. When was Gandhi Smriti and Darshan Samiti (GSDS) formed?
a. September 1985
b. September 1986
c. September 1984
d. September 1987

Ans. c
Explanation:
The correct answer is September 1984.

69. Which of the following bodies recommends minimum support price for crops?
a. NITI Ayog
b. NABARD
c. CACP
d. FCI

Ans. c
Explanation:
The correct answer is CACP.
CACP recommends Minimum Supporting Price to Cabinet Committee on Economic Affairs (CCEA) which is not binding on it.

70. The table gives the pass percentage of class X students of five government schools in Delhi on the basis of gender.

School	Pass Percentage	Ratio of boys and girls
A	35	5 : 6
B	32	3 : 5
C	24	1 : 2
D	19	3 : 2
E	15	5 : 3

What is the ratio of the pass percentage of boys of school B to the pass percentage of boys of school C?
a. 3 : 5
b. 2 : 3
c. 3 : 2
d. 5 : 3

Ans. c
Explanation:
Calculations:
Pass percentage of school B = 32%
Pass percentage of boy in school B = (3/8) of 32%
⇒ 12%
Pass percentage of school C = 24%
Pass percentage of boys in school C = (1/3) of 24%
⇒ 8%
Boys percentage of school B : Boys percentage of school C = 12 : 8
⇒ 3 : 2
∴ The correct choice is option 3.

71. Driving his car at the speed of 30 km/h Vinod reaches his office 5 min late. If his speed is 40 km/h, he reaches the office 3 min early. Find the distance he travels between his residence and his office.
a. 16 km
b. 18 km

c. 20 km
d. 15 km

Ans. a
Explanation:
Given:
Driving his car at the speed of 30 km/h Vinod reaches his office 5 min late and at speed of 40 km/h, he reaches the office 3 min early.
Concept used:
Time = Distance/Speed
Calculations:
Let the time be ‘t’ minutes to reach office
Let the distance be D.
Time for 30km/h
⇒ (t + 5)/60 = D/30 ----(1) (1 minute = 1/60 hours)
Time for 40 km/h
⇒ (t – 3)/60 = D/40 ----(2)
Subtract equation (2) from (1)
⇒ [t + 5 - (t - 3)]/60 = D/30 - D/40
⇒ (D/30) - (D/40) = 8/60
⇒ (4D - 3D)/120 = 8/60
⇒ D/120 = 8/60
⇒ D = 16 km
∴ The correct choice is option 1.

72. What is the term of Non- permanent members of UN Security council?
a. 5 years
b. 3 years
c. 2 years
d. 4 years

Ans. c
Explanation:
The correct answer is 2 years

73. Taxol is extracted from which plant?

a. Pine
b. Yew
c. Chir
d. Neem

Ans. b
Explanation:
The correct answer is Yew
Taxol is obtained from the bark of the Yew tree.

74. Where is the Sambhar Lake situated?
a. Uttar Pradesh
b. Rajasthan
c. Gujarat
d. Madhya Pradesh

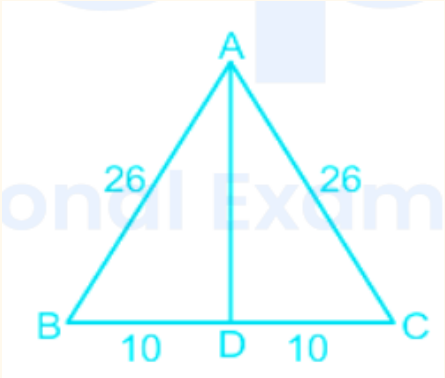
Ans. b
Explanation:
The correct answer is Rajasthan.
Sambhar Salt Lake is situated in east-central Rajasthan state

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.
Hospital : Health :: School : ?
a. Economy
b. Books
c. Education
d. Society

Ans. c
Explanation:
The logic is:
Hospital : Health → We go to Hospital to get cure for Health related issue.
Similarly,
School : ? → We go to School to get Educated.
Hence, ‘ Education ’ is the correct answer.

76. In an isosceles triangle ABC, if AB = AC = 26 cm and BC = 20 cm, find the area of triangle ABC.
a. 180 cm 2
b. 240 cm 2
c. 220 cm 2
d. 260 cm 2

Ans. b
Explanation:
Given:
In an isosceles triangle ABC,
AB = AC = 26 cm and BC = 20 cm.
Calculations:



In this triangle ABC,
∆ADC = 90° (Angle formed by a line from opposite vertex to unequal side at mid point in isosceles triangle is 90°)
So,
$AD^2 + BD^2 = AB^2$ (by pythagoras theorem)
$\Rightarrow AD^2 = 576$
$\Rightarrow AD = 24$
Area of triangle = ½(base × height)
⇒ ½(20 × 24) (Area of triangle = (1/2) base × height)
$\Rightarrow 240\ cm^2$
∴ The correct choice is option 2.

77. The Right to Free and Compulsory Education Act was passed by Parliament in the year _____
a. 2006

b. 2009
c. 2010
d. 2011

Ans. b
Explanation:
The correct answer is 2009.
The Right to Education (RTE) Act 2009 was enacted in the Parliament of India on 4 August 2009 .

78. What was the sex ratio of India as per 2011 census?
a. 930
b. 960
c. 940
d. 925

Ans. c
Explanation:
The correct answer is 940.
According to the population census of 2011, the sex ratio of India is 940 females per thousand males.

79. Select the assumption that can be drawn from the given statement.
'Doctors who charge high consultation fees are good'.
a. A doctor's proficiency is directly related to consultation fees.
b. The doctor has many patients.
c. A doctor who charges less consultation fee is unpopular.
d. The doctor is a good practitioner.

Ans. a
Explanation:
1. A doctor's proficiency is directly related to consultation fees.
The assumption can be drawn from the given statement as it is clearly stated that Doctors who charge high consultation fees are good.
2. The doctor has many patients.
The assumption cannot be drawn from the given statement as the statement mentions nothing about the number of patients.

3. A doctor who charges less consultation fee is unpopular.
The assumption cannot be drawn from the given statement as the statement mentions nothing about those doctors who charge less.
4. The doctor is a good practitioner.
The assumption cannot be drawn from the given statement as we only know about those doctors who charge high consultation fees but not about a particular doctor as given in the assumption 'The doctor'.
Hence, ‘ option 1 ’ is the correct answer.

80. As per Inland Waterways Authority of India, what is the approximate total length of navigable Inland waterways of India?
a. 12400 km
b. 15600 km
c. 13600 km
d. 14500 km

Ans. d
Explanation:
The correct answer is14500 km .
The total navigable length is 14,500 km, out of which about 5200 km of the river and 4000 km of canals can be used by mechanised crafts.

81. Where is the headquarters of UNICEF situated?
a. Washington DC
b. Paris
c. zurich
d. New York

Ans. d
Explanation:
The correct answer isNew York .
UNICEF headquarters are in New York.

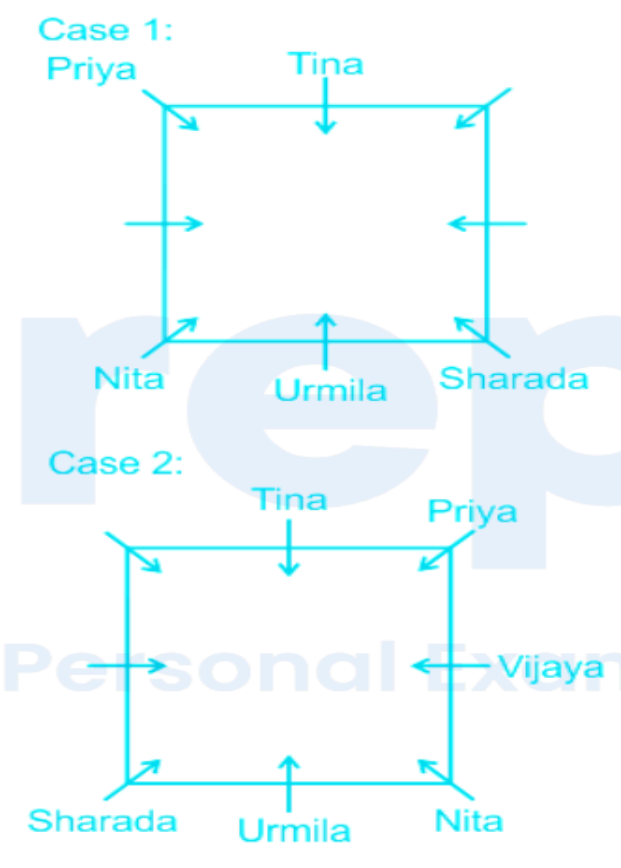
82. For every 18 eggs that Noori buys, three eggs turn out to be rotten. At the same rate, how many good eggs will Noori have if she buys 690 eggs?
a. 585
b. 565

c. 475
d. 575

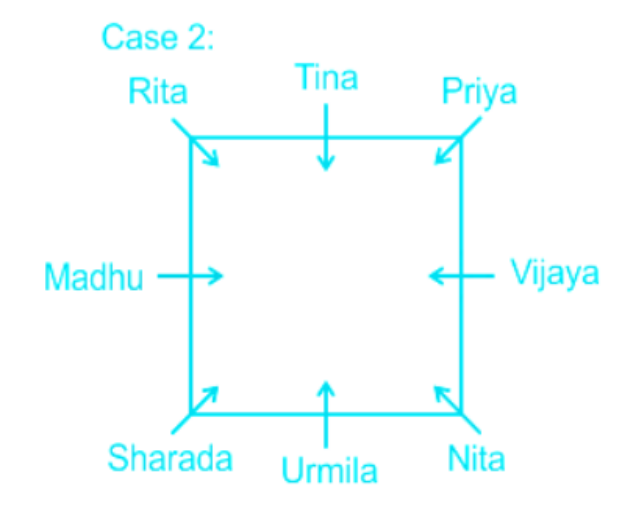
Ans. d
Explanation:
Given:
For every 18 eggs, 3 are rotten.
Calculations:
3 eggs are rotten & 15 eggs are good (given)
Rotten eggs : Good eggs = 3 : 15 = 1 : 5
Good eggs = 5/6 of all eggs
Good eggs = (5/6) of 690
⇒ 575 eggs
∴ The correct choice will be option 4.

83. Eight people are sitting at a square table. Tina is sitting opposite Urmila, who is sitting between Sharda and Nita. Sharda is diagonally opposite Priya, who is sitting to the right of Vijaya. Vijaya is facing Madhu, who is to the right of Rita. Who is sitting diagonally opposite Nita?
a. Priya
b. Rita
c. Sharda
d. Madhu

Ans. b
Explanation:
1. Eight people are sitting at a square table.
2. Tina is sitting opposite Urmila, who is sitting between Sharda and Nita.
3. Sharda is diagonally opposite Priya, who is sitting to the right of Vijaya.



Condition 3 is violated in Case I, so it is eliminated.
4. Vijaya is facing Madhu, who is to the right of Rita.



Clearly, Rita is sitting diagonally opposite Nita.
Hence, ‘ Rita ’ is the correct answer.

84. If sec θ = 5x and tan θ =$\frac{5}{x}$, then the value of $10(x^2 - \frac{1}{x^2})$ is:

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

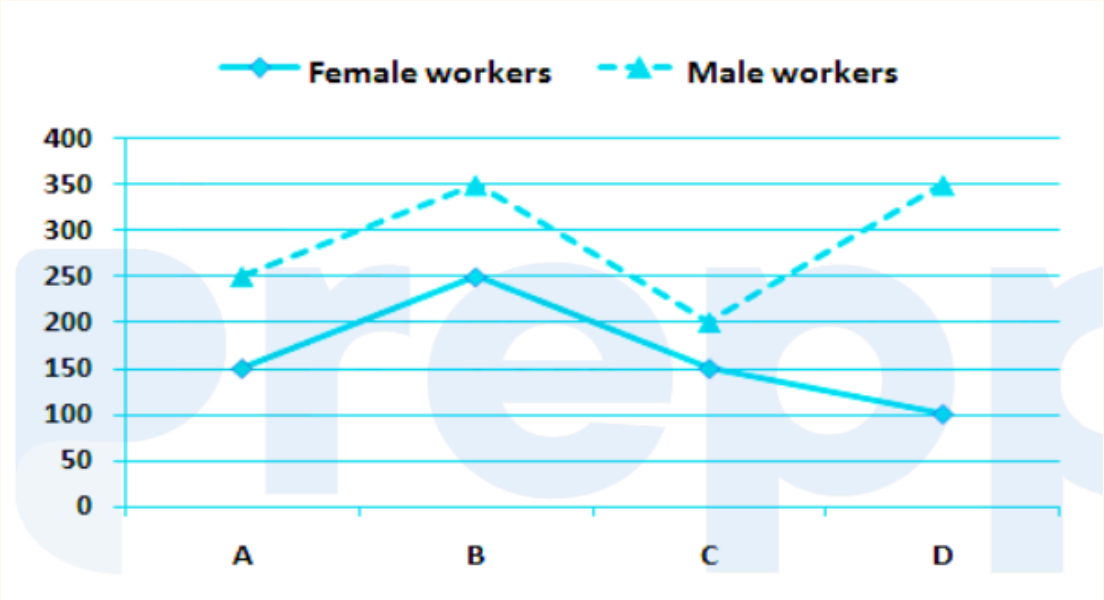
b.$\frac{1}{5}$

c. 2

d.$\frac{3}{5}$

Ans. a
Explanation:
Given:
Secθ = 5x & tanθ = 5/x
Concept used:
Sec²θ - tan²θ = 1
Calculations:
Secθ = 5x
Sec²θ = 25x²
Tanθ = 5/x
Tan²θ = 25/x²
Now,
10[x² - (1/x²)] = 10[(sec²θ/25) - (tan²θ/25)]
⇒ (10/25) [sec²θ - tan²θ]
⇒ 10/25
⇒ 2/5
∴ The correct choice will be option 1

85. Observe the graph and answer the question below.
The graph represents the number of male and female workers in four different companies.



Which company has the maximum difference in the number of male and female employees?

a. A
b. B
c. C
d. D

Ans. d
Explanation:
Calculations:
Male members of A, B, C and D are respectively
Members of A ⇒ Female = 150 & Males = 250
Members of B ⇒ Female = 250 & Male = 350
Members of C ⇒ Female = 150 & Male = 200
Members of D ⇒ Female = 100 & Male = 350
Difference of female & male members
⇒ Difference in A = 250 - 150 = 100
⇒ Difference in B = 350 - 250 = 100
⇒ Difference in C = 200 - 150 = 50
⇒ Difference in D = 350 - 100 = 250
∴ The correct choice will be option 4.

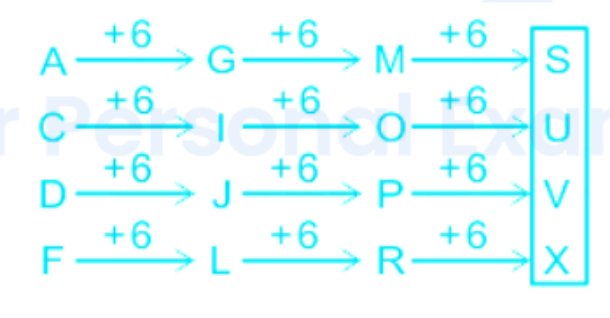
86. A question and three statements labelled (I), (II) and (III) are given. You have to decide which statement(s) is/are sufficient to answer the question.
Question: Who is the shortest among A, B, C, D and E?
Statements:
I. A is taller than E but shorter than D.
II. B is shorter than C but taller than E.
III. D is taller than C and A is taller than B.
a. Statements I and III together are sufficient.
b. Statements I and II together are sufficient.
c. Statements I, II and III are sufficient.
d. Statements I, II and III are insufficient.

Ans. b
Explanation:
Persons: A, B, C, D, and E.
I. A is taller than E but shorter than D.
D > A > E
II. B is shorter than C but taller than E.
C > B > E
III. D is taller than C and A is taller than B.
D > C and A > B
Option 1: combining statements I and III:
D > A > E and D > C and A > B
D > _ > _ > _ > _
We will not get any result by combining the two statements.
Option 2: combining statements I and II:
D > A > E and C > B > E
_ > _ > _ > _ > E
E is the shortest among all the five. So this is sufficient to answer.
Option 3: combining statements I, II, and III:
D > C/A > A/C > B > E
Now, we can say that E is the shortest among A, B, C, D and E. Statements I, II, and III are sufficient.
Note :There is a discrepancy in the original question and marked options.
When statements 1 and 2 combinedly give the answer then obviously with the help of statement 3 we can also give the answer, but we need to choose the minimum

statement required to give the answer.
Hence, Statements I and II together are sufficient is the correct answer.

87. Select the letter-cluster from among the given options that can replace the question mark (?) in the following series.
ACDF, GIJL, MOPR, ?
a. STVX
b. SVUX
c. SVTX
d. SUVX

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



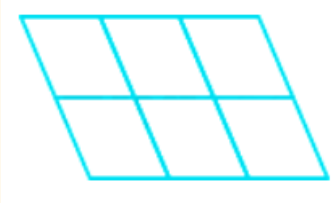
Hence, ‘ SUVX ’ is the correct answer.

88. Select the number from among the given options that can replace the question mark (?) in the following series.
5, 12, 26, 54, ?, 222, 446
a. 108
b. 116
c. 112
d. 110

Ans. d
Explanation:
The logic follows here is:
Step-by-step explanation: 5, 12, 26, 54, ?, 222, 446

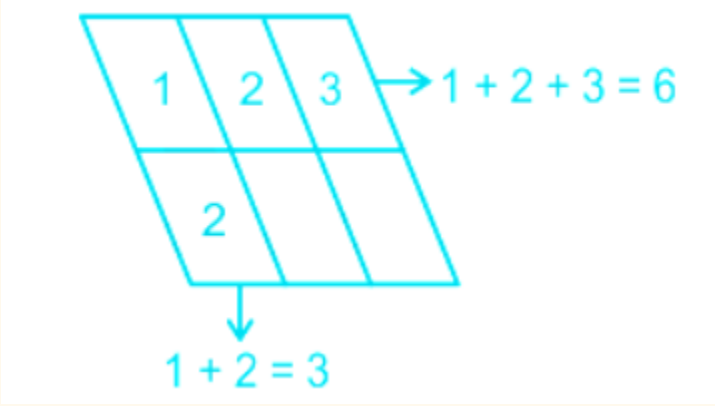
5
5 × 2 + 2 = 12
12 × 2 + 2 = 26
26 × 2 + 2 = 54
Therefore, 54 × 2 + 2 = 110
110 × 2 + 2 = 222
222 × 2 + 2 = 446
Hence, the correct answer is "110".

89. Count the number of parallelograms in the following figure.



a. 14
b. 16
c. 18
d. 20

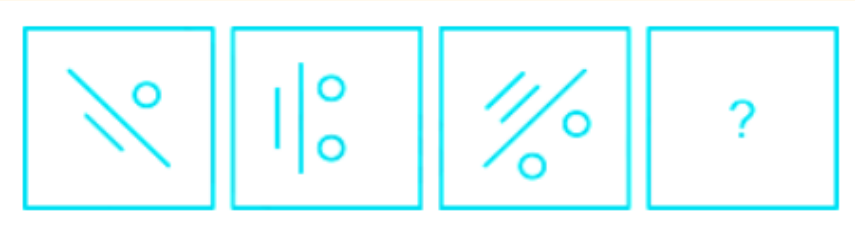
Ans. c
Explanation:
The number of parallelograms in the figure is shown below:



Therefore, the number of parallelograms will be 6 × 3 = 18
Hence, the correct answer should be "18".

90. Select the pattern from among the given options that will come next in

the following series.



a. 

b. 

c. 

d. 

Ans. d

Explanation:

The pattern followed here is:

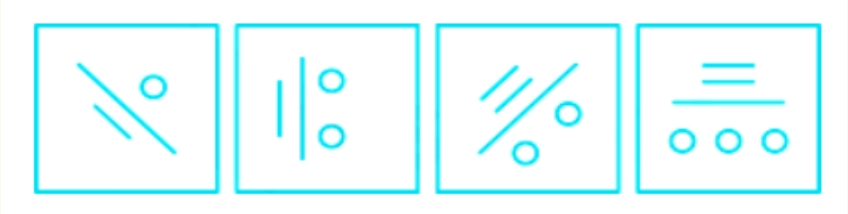
In first figure, there is one straight line and one circle and a partition between them.

In second figure, one more circle is added in the figure and the partition between two circles and one straight line now shifts its position by rotating 45º clockwise.

In third figure, one straight line is added as compared to second figure, and the number of circles is same and the and the partition between them shifts its position by rotating 45º clockwise.

So, in the fourth figure, one more circle will be there and two lines and the partition will be a horizontal line, as shown in option 4.

The pattern that will one next in the given series, is shown below:



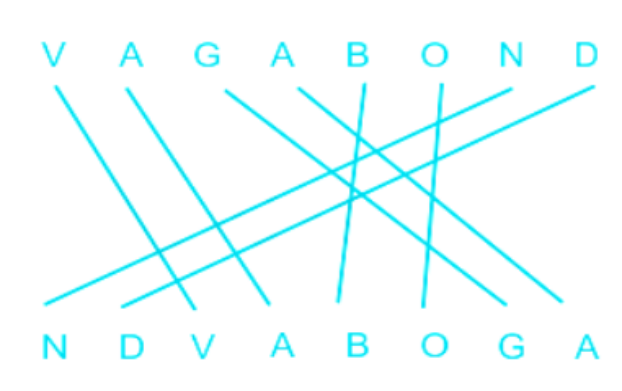
Hence, ' option 4 ' is the correct answer.

91. Select the option that is closest to the given shapes?
Square, Rhombus, Rectangle, Parallelogram
a. Equilateral
b. Equiangular
c. Scalene
d. Quadrilateral

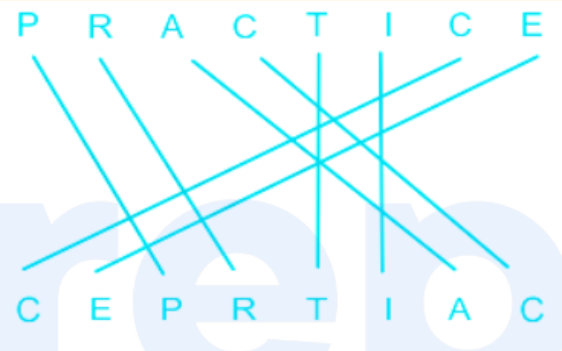
Ans. d
Explanation:
The logic follows here is:
Square → Square is a quadrilateral.
Rhombus → Rhombus is a quadrilateral.
Rectangle → Rectangle is a quadrilateral.
Parallelogram → Parallelogram is a quadrilateral.
Quadrilateral is closest to the given shapes.
Hence, ‘ Quadrilateral ’ is the correct answer.

92. In a certain code language. VAGABOND is written as NDVABOGA. How will PRACTICE be written as in that language?
a. PRCETIAC
b. CERPTIAC
c. CEPRTIAC
d. CEACTIPR

Ans. c
Explanation:
The logic is:

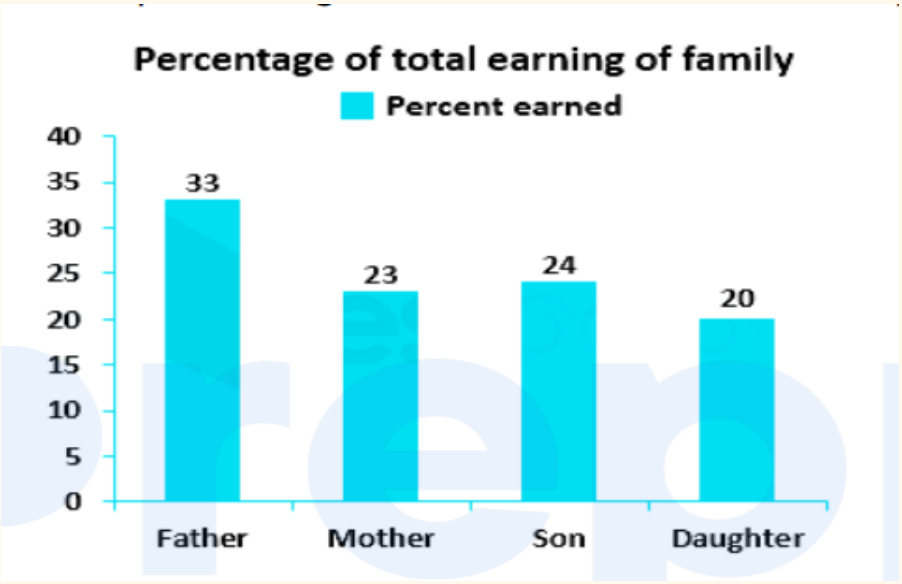


Similarly,



Hence, ‘ CEPRTIAC ’ is the correct answer.

93. Observe the bar graph and answer the question below.
The total annual earnings of a family of four members is Rs. 12 lakhs. The bar graph shows the percentage of contribution of each family member.



What is the difference in the salary of the highest and the lowest earning

members?
a. Rs. 15,600
b. Rs. 1,560
c. Rs. 11,60,000
d. Rs. 1,56,000

Ans. d
Explanation:
Calculations:
Highest salary = 33% of 1200000
Lowest salary = 20% of 1200000
Difference in height & lowest salary = 33% of 1200000 – 20% of 1200000
⇒ 13% of 1200000
⇒ 156000 Rupees
∴ The correct choice is option 4.

94. Study the given table carefully and select the number from among the given options that can replace the question mark (?).

9	8
17	8
25	16
?	8
49	8
57	16

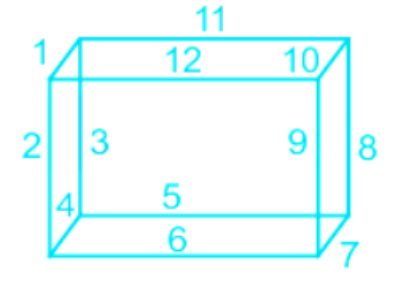
a. 41
b. 33
c. 49
d. 32

Ans. a
Explanation:
The logic is:
9 + 8 = 17

17 + 8 = 25
25 + 16 = 41
41 + 8 = 49
49 + 8 = 57
57 + 16 = 73
Hence, ‘ 41 ’ is the correct answer.

95. How many straight lines does a cuboid have?
a. 16
b. 12
c. 10
d. 24

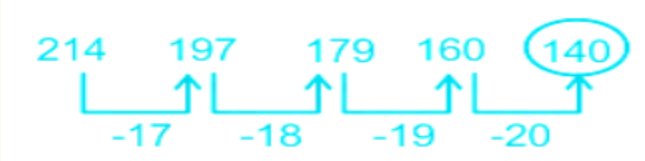
Ans. b
Explanation:
The number of straight lines in a cuboid is shown below:



Hence, ‘ 12 ’ is the correct answer.

96. Select the number from among the given options that can replace the question mark (?) in the following series.
214, 197, 179, 160, ?
a. 147
b. 159
c. 140
d. 149

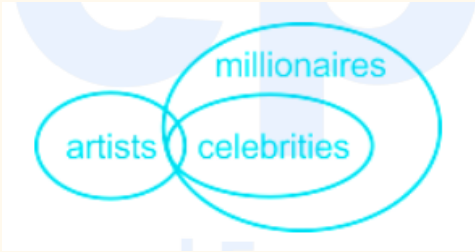
Ans. c
Explanation:
The logic is:



Hence, ‘ 140 ’ is the correct answer.

97. If some artists are celebrities' and ‘all celebrities are millionaires’, then which of the given conclusions follow?
a. No millionaires are celebrities.
b. All artists are millionaires.
c. No celebrities are millionaires.
d. Some artists are millionaires.

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



1. No millionaires are celebrities. → False (As, all celebrities are millionaires given so some millionaires can be celebrities, it is definite)
2. All artists are millionaires. → False (As, some artists are celebrities and all celebrities are millionaires → some artists are millionaires)
3. No celebrities are millionaires. → False (As, all celebrities are millionaires so some celebrities are also millionaires)
4. Some artists are millionaires. → True (As, some artists are celebrities and all celebrities are millionaires so which part of the artists is celebrities will be also millionaires, hence, true)

Hence, ‘ option 4 ’ is the correct answer.

98. Select the option that best describes the given units?
Dollar, Rupee, Yen, Taka
a. Economy

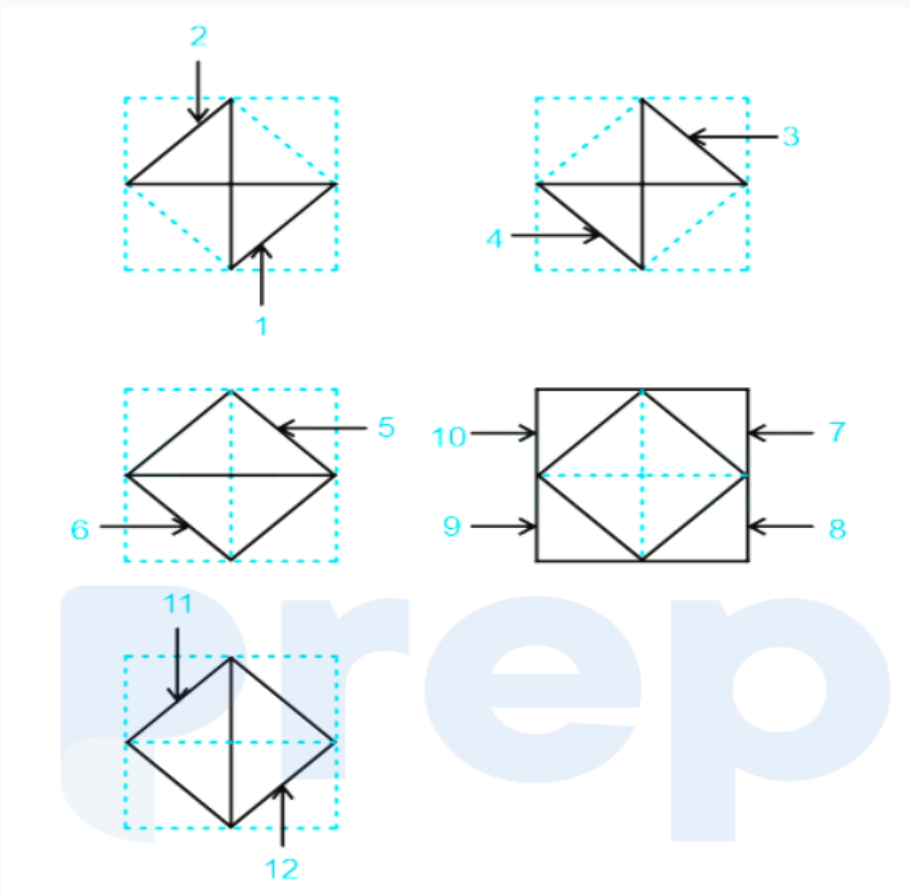
b. Finance
c. Wealth
d. Currency

Ans. d
Explanation:
Dollar → Dollar is the currency of USA.
Rupee → Rupee is the currency of India.
Yen → Yen is the currency of Japan.
Taka → Taka is the currency of Bangladesh.
Clearly, currency is the option that best describes the given units.
Hence, ‘ Currency ’ is the correct answer.

99. Count the number of triangles in the following figure.

a. 10
b. 16
c. 12
d. 9

Ans. c
Explanation:
The number of triangles in the following figure is shown below:



Hence, ‘ 12 ’ is the correct answer.

100. Out of the four materials listed, three are alike in some manner and one is different. Select the odd one.
a. Gold
b. Iron
c. Silver
d. Steel

Ans. d
Explanation:
The description is as follows:

Option	Description
1. Gold	Gold is a metal.
2. Iron	Iron is a metal.
3. Silver	Silver is a metal.

4. Steel Steel is an alloy of iron with carbon and usually other elements.

Hence, ‘ Steel ’ is the odd one out.