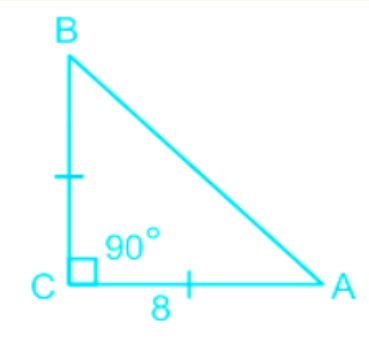
RRB NTPC 30 Dec 2020 Shift 2 Solution

1. Triangle ABC is an isosceles triangle in which ∠C = 90°. If AC = 8 cm, find AB.
a. 6 cm
b. 8√2 cm
c. 10 cm
d. 8 cm

Ans. b
Explanation:



Given:
Triangle ABC is an isosceles triangle in which ∠C = 90° & AC = 8 cm.
Concept:
AC + BC > AB [Sum of two sides of a triangle is greater than the third side]
AB > AC or BC [Hypotenuse is greater than the Base or Altitude of any right-angle triangle]
Pythagoras Theorem:
⇒ AB2 = AC 2 + BC 2
Calculation:
ABC is an isosceles triangle; AC = 8 cm
⇒ BC = 8 cm
AB 2 = 8^2 + 8^2
⇒ AB = √128
∴ AB = 8√2 cm

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

5	4	141
6	2	220
7	3	?

a. 284
b. 296
c. 352
d. 328

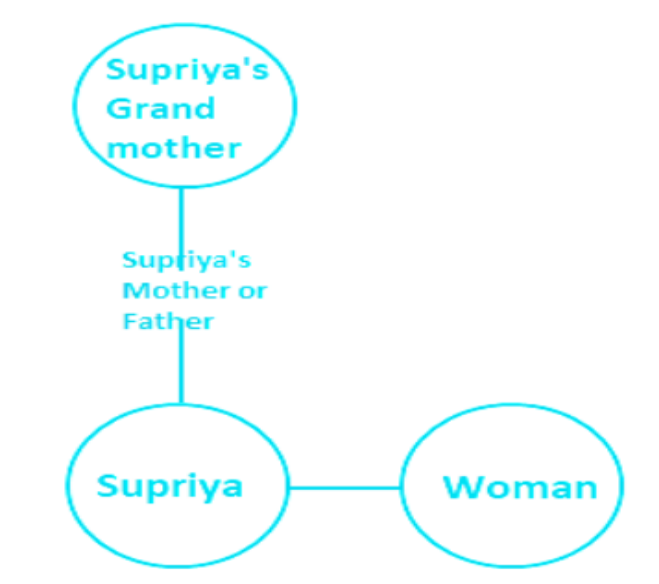
Ans. c
Explanation:
The logic followed here is:
In this question,
Row 1: 5, 4, 141
Addition of cube of first number of first column and square of second number of first column and we get the third number of the first column. Which are given below
$5^3 + 4^2 = 125 + 16 = 141$
Row 2: 6, 2, 220
And addition of cube of first number of second column and square of second number of the second column and we get the third number of the second column. Which are given below
$6^3 + 2^2 = 216 + 4 = 220$
Similarly,
Row 3: 7, 3, ?
Addition of cube of first number of third column and square of second number of third column and we get the third number of the third column. Which are given below
$7^3 + 3^2 = 343 + 9 = 352$
The matrix are given below-

5	4	141
6	2	220
7	3	352

Hence, "352" is the correct answer.

3. Pointing to a woman, Supriya said, “This woman is the daughter of the only child of my grandmother.” How is the woman related to Supriya?
a. Sister-in-law
b. Mother
c. Sister
d. Grandmother

Ans. c
Explanation:
Pointing to a woman, Supriya said, “This woman is the daughter of the only child of my grandmother.”



Woman is the sister of Supriya.

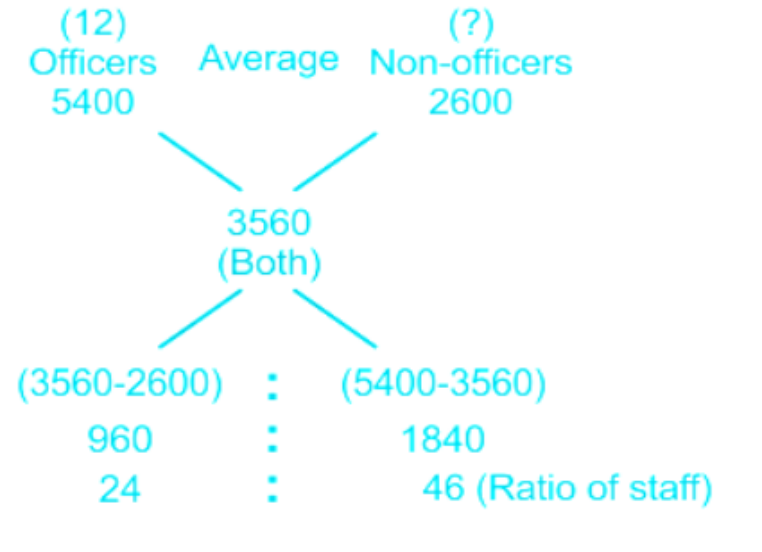
Hence, "Sister" is the correct answer.

4. When was Swachh Bharat Mission launched?
a. 15 August 2014
b. 2 October 2014
c. 2 October 2015
d. 15 August 2015

Ans. b
Explanation:
The correct answer is 2 October 2014.
Swachh Bharat Mission was launched on 2 October 2014.

5. The average salary of the entire staff in an office is Rs. 3,560 per month. The average salary of the officers is Rs. 5,400 per month and that of the nonofficers is Rs. 2,600 per month. If the number of officers is 12, find the number of non-officers in the office.
a. 23
b. 22
c. 24
d. 25

Ans. a
Explanation:
Given:
No of officers = 12
The average salary of the entire staff = Rs.3560 per month
The average salary of the officers = Rs.5400 per month
The average salary of the non-officers = Rs.2600 per month
Formula used:
Let the no of non-officers be = a
By Alligation Method



As per the question;
Ratio of the no of officers and non-officers = 24 : 46
⇒ 12/a = 24/46
⇒ 1/a = 2/46
⇒ a = 23
∴ The no of non-officers is 23.

6. The sum of two numbers is 5 times their difference. If the smaller number is 24, find the larger number.
a. 30
b. 32
c. 36
d. 48

Ans. c
Explanation:
Given:
Smaller no = 24
Calculation:
Let the larger no be = a
Difference of the numbers = a - 24
As per the question;
(a + 24) = 5(a - 24)
⇒ a + 24 = 5a - 120

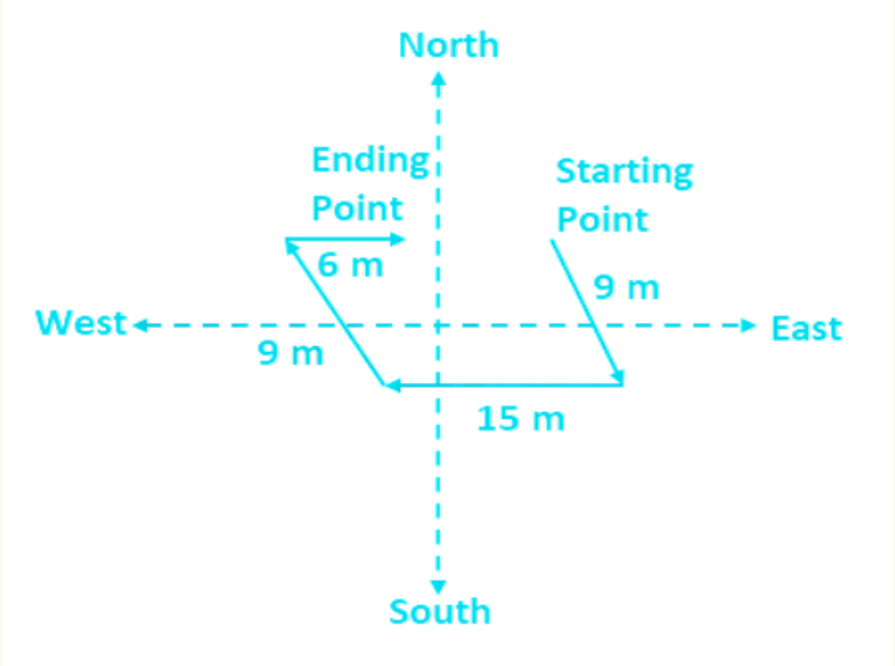
⇒ 144 = 4a
⇒ a = 36
∴ The larger no is 36.

7. Around which year did the construction of Taj Mahal Complex begin
a. 1632 AD
b. 1641 AD
c. 1621 AD
d. 1651 AD

Ans. a
Explanation:
The correct answer is 1632 AD.
The construction of the Taj Mahal Complex began in the year 1632.

8. Radha walks a distance of 9 m towards the South-East. Then she walks 15 m towards the West. From here, she walks 9 m towards the North-West. Finally she walks 6 m towards the East and stands at the point. How far is she standing from the starting point?
a. 9 m
b. 13 m
c. 10 m
d. 11 m

Ans. a
Explanation:
Radha walks a distance of 9 m towards the South-East. Then she walks 15 m towards the West. From here, she walks 9 m towards the North-West. Finally she walks 6 m towards the East and stands at the point.



She is 15 - 6 = 9 m standing from the starting point.
Hence, "9 m" is the correct answer.

9. Which is India's newest nuclear power plant?
a. Kalpakkam
b. Kaiga
c. Tarapur
d. Kudankulam

Ans. d
Explanation:
The correct answer is Kudankulam.
Kudankulam is India's newest nuclear power plant.

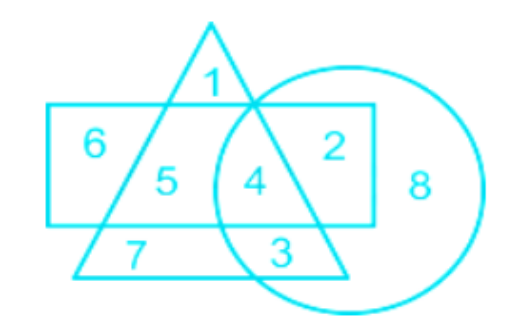
10. Which part of the Constitution of India contains Fundamental Rights of the citizens of India?
a. Part 2
b. Part 4
c. Part 3
d. Part 1

Ans. c
Explanation:
The correct answer is Part 3 .
Part 3 of the Constitution of India contains the Fundamental Rights of the citizens of India.

11. Which of the following is the classical dance form of erstwhile Andhra Pradesh?
a. Kathakali
b. Kathak
c. Bharatnatyam
d. Kuchipudi

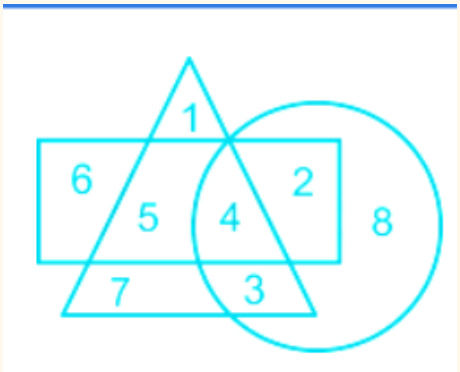
Ans. d
Explanation:
The correct answer is Kuchipudi.
Kuchipudi is the classical dance form of erstwhile Andhra Pradesh.

12. In the given diagram, which number is in all the geometrical figures



a. 8
b. 4
c. 5
d. 3

Ans. b
Explanation:
The figure are given below -



4 is in all the geometrical figures.
Hence, "4" is the correct answer.

13. Kolleru Lake is located in which state of India?
a. Kerala
b. Rajasthan
c. Maharashtra
d. Andhra Pradesh

Ans. d
Explanation:
The correct answer is Andhra Pradesh.
Kolleru lake is located in Andhra Pradesh.

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

7	8	5	8
6	5	4	7
5	2	2	3
12	30	12	?

a. 35

b. 28
c. 24
d. 49

Ans. a
Explanation:
The logic followed here is:
Column 1: 7, 6, 5, 12
In this matrix, difference between multiplication of first and second number of column1 and multiplication of second and third number of column 1 we get fourth number of column1. Which are given below7 × 6 - 6 × 5 = 42 - 30 = 12
Column 2: 8, 5, 2, 30
The difference between multiplication of first and second number of column 2 and multiplication of second and third number of column 2 we get fourth number of column 2. Which are given below8 × 5 - 5 × 2 = 40 - 10 = 30
Column 3: 5, 4, 2, 12
The difference between multiplication of first and second number of column 3 and multiplication of second and third number of column 3 we get fourth number of column 3. Which are given below5 × 4 - 4 × 2 = 20 - 8 = 12
Similarly,
Column 4: 8, 7, 3, ?
And the difference between multiplication of first and second number of column 4 and multiplication of second and third number of column 4 we get fourth number of column 4. Which are given below8 × 7 - 7 × 3 = 56 - 21 = 35
The matrix are given below -

7	8	5	8
6	5	4	7
5	2	2	3
12	30	12	35

Hence, "35" is the correct answer.

15. Find the greatest number less than 500 that is divisible by 6, 14 and 28.
a. 440
b. 460
c. 480
d. 420

Ans. d
Explanation:
Concept:
The greatest no less than 500 that is divisible by 6, 14 and 28 will be the multiple of the LCM of all these 3 numbers.
Calculation:
LCM (6, 14, 28) = 84
The required number; 84k < 500 [where k is any natural number]
For k = 1, 84 × 1 = 84
For k = 2, 84 × 2 = 168
For k = 3, 84 × 3 = 252
For k = 4, 84 × 4 = 336
For k = 5, 84 × 5 = 420
∴ At k = 5, 420 is the greatest number which is divisible by 6, 14 and 28.

16. Which year was the Beti Bachao, Beti Padhao Yojana was launched?
a. 2017
b. 2016
c. 2015
d. 2014

Ans. c
Explanation:
The correct answer is 2015.
The Beti Bachao, Beti Padhao yojana was launched in the year 2015.

17. If $x^4 + \frac{1}{x^4} = 194$ **find** $x^3 + \frac{1}{x^3}$
a. 52
b. 56
c. 54
d. 62

Ans. a
Explanation:
Given:
$x^4 + \frac{1}{x^4} = 194$
(x + y)2 = x2 + y2 + 2xy
(x + y)3 = x3 + y3 + 3xy(x + y)
Calculation:
$x^4 + \frac{1}{x^4} = 194$
By adding 2 in both sides:-
⇒ x4 + 1/x4 + 2 = 194 + 2
⇒ (x2 + 1/x2)2 = 196
⇒ (x 2 + 1/x 2) = √196
⇒ (x 2 + 1/x 2) = 14 (1)
By adding 2 in both sides of equation (1)
⇒ (x 2 + 1/x 2) + 2 = 14 + 2
⇒ (x + 1/x)2 = 16
⇒ (x + 1/x) = 4 (2)
Now, cubing both sides in equation (2)
⇒ (x + 1/x)3 = 4^3
⇒ x3 + 1/x3 + 3 × x × 1/x (x + 1/x) = 64
⇒ x 3 + 1/x 3 + 3 × 4 = 64
⇒ x 3 + 1/x 3 = 64 - 12 = 52
∴ The required result is 52.

18. By selling an article for Rs. 45,000, a man loses 10%. For what amount should he sell it so as to gain 15%.
a. Rs. 55,700
b. Rs. 67,500
c. Rs. 75,500
d. Rs. 57,500

Ans. d
Explanation:
Selling price = 90% of the Cost Price
New Selling Price = 115% of the Cost Price
Now, 90% = 45000

⇒ 1% = 500
⇒ 100% = 50000 (C.P)
⇒ 115% = 115 × 1% = 115 × 500
⇒ 57500
∴ The required Selling Price should be Rs. 57500

19. If '+' = '÷', '×' = '+', '-' = '×' and '÷' = '-', then which of the following equations is correct?
a. 36 - 6 + 3 × 5 ÷ 3 = 74
b. 36 × 6 + 7 ÷ 2 = 20
c. 36 ÷ 6 + 3 × 5 - 3 = 45
d. 36 + 6 - 3 × 7 ÷ 3 = 24

Ans. a
Explanation:
From option 1 -
36 - 6 + 3 × 5 ÷ 3 = 74
If '+' = '÷', '×' = '+', '-' = '×' and '÷' = '-', then
36 × 6 ÷ 3 + 5 - 3 = 74
Applying BODMAS rule
36 × 2 + 5 - 3 = 74
72 + 5 - 3 = 74
77 - 3 = 74
74 = 74 follow the condition.
From option 2 -
36 × 6 + 7 ÷ 2 = 20
If '+' = '÷', '×' = '+', '-' = '×' and '÷' = '-', then
36 + 6 ÷ 7 - 2 = 20
Applying BODMAS rule
36 + 0.85 - 2 = 20
36.85 - 2 = 20
34.85 - 2 = 20 does not follow the condition.
From option 3 -
36 ÷ 6 + 3 × 5 - 3 = 45
If '+' = '÷', '×' = '+', '-' = '×' and '÷' = '-', then
36 - 6 ÷ 3 + 5 × 3 = 45
Applying BODMAS rule

36 - 2 + 5 × 3 = 45
36 - 2 + 15 = 45
51 - 2 = 45
49 = 45 does not follow the condition.
From option 4 -
36 + 6 - 3 × 7 ÷ 3 = 24
If '+' = '÷', '×' = '+', '-' = '×' and '÷' = '-', then
36 ÷ 6 × 3 + 7 - 3 = 24
Applying BODMAS rule
6 × 3 + 7 - 3 = 24
18 + 7 - 3 = 24
25 - 3 = 24
22 = 24 does not follow the condition.
Hence, "option 1" is the correct answer.

20. Select the number from among the given options that can replace the question mark (?) in the following series.
8, ?, 30, 105, 472.5
a. 11
b. 13
c. 14
d. 12

Ans. d
Explanation:
Given series are -
8, ?, 30, 105, 472.5
The logic followed here is:
We multiply 1.5 to first number we get second number8 × 1.5 = ? = 12.0
We multiply 2.5 to second number we get third number12 × 2.5 = 30.0
We multiply 3.5 to third number we get fourth number30 × 3.5 = 105.0
We multiply 4.5 to fourth number we get fifth number105 × 4.5 = 472.5
Hence, "12" is the correct answer.

21. Out of three numbers, first number is twice of the second and thrice of the third number. If the average of the three numbers is 880, what is the smallest number?

a. 840
b. 460
c. 420
d. 480

Ans. d
Explanation:
Given:
The average of the three numbers is 880
Formula used:
Average of 3 numbers = Sum of the numbers/3
Calculation:
Let the first number = 6a
⇒ Second number = 6a × 1/2 = 3a
⇒ Third number = 6a × 1/3 = 2a
Now, (6a + 3a + 2a)/3 = 880
⇒ 11a = 3 × 880
⇒ a = 240
∴ The smallest number (2a) = 2 × 240 = 480

22. Anil Kumar took a loan of 24,000 with simple interest for as many years as the rate of interest. If he paid Rs.19,440 as interest at the end of the loan period, what was the rate of interest?
a. 8%
b. 8.5%
c. 10%
d. 9%

Ans. d
Explanation:
Given:
Loan amount = Rs.24000
Interest paid on loan = Rs.19440
Interest rate = No of years
Formula used:
Simple Interest = Principal × Rate% × Time
Calculation:

Let the rate percent and no of years be = a
Simple Interest = 24000 × a/100 × a
⇒ 19440 = 240 × a2
⇒ a 2 = 19440/240
⇒ a = √81 = 9
∴ The rate of interest is 9% per annum.

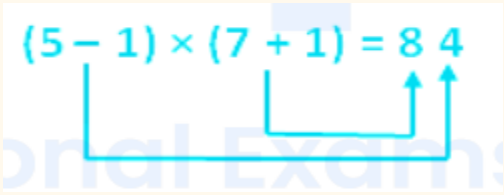
23. A man walks around a circular pond exactly once. If his step is 44 cm long and he takes 700 steps to go around the pond, find the area of the pond.
a. 6574 m 2
b. 7456 m 2
c. 7546 m 2
d. 6546 m 2

Ans. c
Explanation:
Given:
The length of the man's step = 44 cm
No of steps taken to go around the pond = 700
Formulas used:
Area of a circular pond = πr2
Circumference of the circular pond = 2πr
Calculation:
Circumference of the circular pond = 44 cm × 700 steps
⇒ 2πr = 44 × 700
⇒ r = 44 × 700 × 7/(2 × 22)
⇒ 4900 cm
⇒ 49 m
∴ Area of the circular pond = 22/7 × 49 × 49
⇒ 7546 m 2

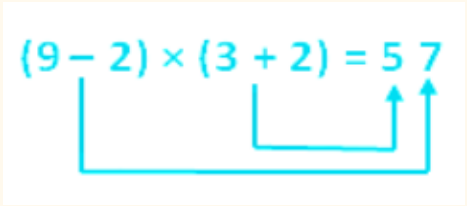
24. If 15 × 17 = 84, 92 × 23 = 57, 37 × 44 = 84, then 54 × 32 = ?
a. 54
b. 87
c. 91
d. 51

Ans. d
Explanation:
In this question, subtraction between ones and tens place value of first number and placed at ones place of resultant value and addition of ones and tens place value of second number and placed at tens place of resultant value. which are given below -

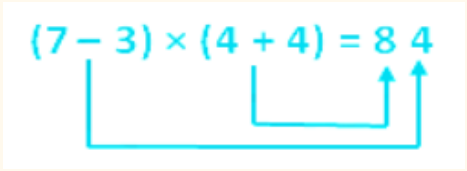
If 15 × 17 = 84 then logic are given below



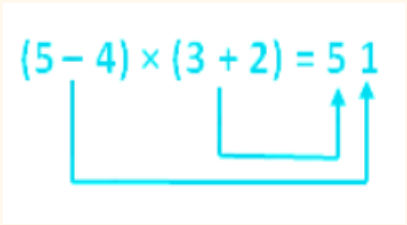
And 92 × 23 = 57 then logic are given below



And 37 × 44 = 84 then logic are given below



Similarly, 54 × 32 = 51 then logic are given below

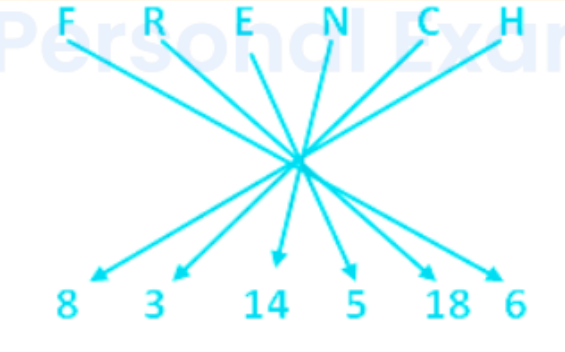


Hence, "51" is the correct answer.

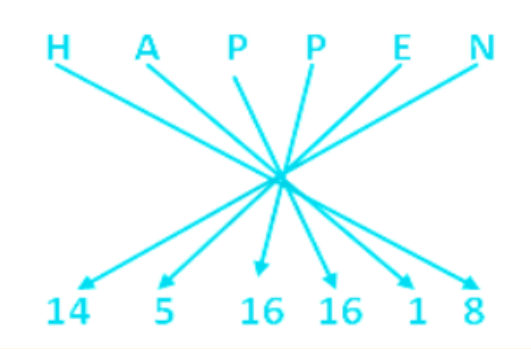
25. In a certain code language, ‘FRENCH’ is written as ‘83145186’, ‘HAPPEN’ is written as '145161618'. What is the code for ‘GERMAN’ in that code language?
a. 141131857
b. 1411211959

c. 151121859
d. 151318517

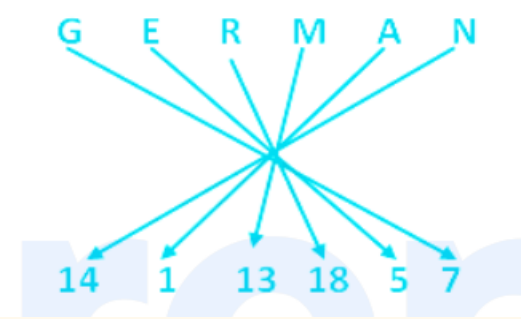
Ans. a
Explanation:
In a certain code language, ‘FRENCH’ is written as ‘83145186’



‘HAPPEN’ is written as '145161618'.



then the code for ‘GERMAN’ in that code language



Hence, "141131857" is the correct answer.

26. Four numbers have been given, out of which three are alike in some manner and one is different. Select the number that is different from the rest.

a. 50
b. 82
c. 59
d. 170

Ans. c
Explanation:
The logic followed here is:
59 is the prime number and 50, 82 and 170 is not prime number.
Note: The number who divided by 1 and itself called prime number.
Hence, "59" is the correct answer.

27. Who launched the Golden Quadrilateral Project?
a. Narendra Modi
b. Manmohan Singh
c. Atal Bihari Vajpayee
d. Jawaharlal Nehru

Ans. c
Explanation:
The correct answer is Atal Bihari Vajpayee.
Atal Bihari Vajpayee launched the Golden Quadrilateral Project.

28. SAARC comprises how many Member States?
a. 7
b. 12
c. 10
d. 8

Ans. d
Explanation:
The correct answer is 8.
SAARC consists of 8 member countries.

29. Who is the founder of Facebook?
a. Michael S Dell
b. Bill Gates

c. Mark Zuckerberg
d. Tim Berners Lee

Ans. c
Explanation:
The correct answer is Mark Zuckerberg.
Mark Zuckerberg is the founder of Facebook.

30. Botanical name of banyan tree is:
a. Azadirachta indica
b. Ficus religiosa
c. Ficus benghalensis
d. Ocimum tenuiflorum

Ans. c
Explanation:
The correct answer is Ficus benghalensis.
The botanical name of the banyan tree is Ficus benghalensis.

31. Who discovered the cell?
a. Theodor Schwann
b. Matthias Schleiden
c. Robert Hooke
d. Rudolf Virchow

Ans. c
Explanation:
The correct answer is Robert Hooke.
Robert Hooke discovered the cell.

32. In 1931, who among the following was the President of the Indian National Congress?
a. Nelly Sengupta
b. Subhash Chandra Bose
c. Dr. Rajendra Prasad
d. Vallabhbhai J Patel

Ans. d
Explanation:
The correct answer is Vallabhbhai J Patel.
Vallabhbhai J Patel was the President of the Indian National Congress in 1931.

33. Where are the Summer Olympic Games going to be held in 2021?
a. PyeongChang
b. Tokyo
c. Paris
d. Beijing

Ans. b
Explanation:
The correct answer is Tokyo.
2021 Summer Olympic Games to be held in Tokyo.

34. Who devised the policy of Doctrine of Lapse?
a. Lord Dalhousie
b. General Dyer
c. Lord Hastings
d. Lord Clive

Ans. a
Explanation:
The correct answer is Lord Dalhousie.
Lord Dalhousie devised the policy of Doctrine of Lapse.

35. Among the following words, which one will come in the middle if they are arranged as per their order in an English dictionary?
1. Dance 2. Degree 3. Dare 4. Dear 5. Development
a. Dear
b. Degree
c. Dance
d. Dare

Ans. a
Explanation:

Arranging all the words as per their order in the dictionary:
1. Dance
3. Dare
4. Dear
2. Degree
5. Development
Thus, the correct order is 1, 3, 4, 2, and 5.
Hence, dear will come in the middle if they are arranged as per their order in an English dictionary.

36. What is the SI unit of force?
a. Kip
b. Pascal
c. Newton
d. Dyne

Ans. c
Explanation:
The correct answer is Newton.
Newton is the SI unit of force.

37. Four fifths of a number is 12 more than three fourths of the number. Find the number.
a. 120
b. 200
c. 160
d. 240

Ans. d
Explanation:
Calculation:
Let the number be 20a
As per the question;
$20a \times 4/5 - 20a \times 3/4 = 12$
$\Rightarrow 16a - 15a = 12$
$\Rightarrow a = 12$
$\therefore$ The required number (20a) = $20 \times 12 = 240$

38. In Computer field, OLE is the abbreviation of
a. Object Linking Extension
b. Object Linking and Enabling
c. Object Location Enabling
d. Object Linking and Embedding

Ans. d
Explanation:
The correct answer is Object Linking and Embedding.
In the Computer field, OLE is the abbreviation of Object Linking and Embedding.

39. Simplify

$$\frac{12.25 + \frac{7}{8} \text{ of } 56 - 9}{(25 \div 5 \times 10.25) + \frac{10}{9} \text{ of } \left(\frac{7}{2} - \frac{4}{5}\right) - 2}$$

a. 5
b. 15
c. 2
d. 1

Ans. d
Explanation:
Calculation:

$$\frac{12.25 + \frac{7}{8} \text{ of } 56 - 9}{(25 \div 5 \times 10.25) + \frac{10}{9} \text{ of } \left(\frac{7}{2} - \frac{4}{5}\right) - 2}$$

⇒ (12.25 + 7/8 × 56 - 9) ÷ [(25/5 × 10.25) + 10/9 × (35 - 8)/10 - 2]
⇒(12.25 + 49 - 9) ÷ [(5 × 10.25) + 10/9 × 27/10 - 2]
⇒52.25 ÷ [51.25 + 3 - 2]
⇒52.25 ÷ 52.25
⇒ 1
∴ The required value is 1

40. A solution reacts with chalk powder to give a gas that turns lime-water milky. The solution contains:

a. $AlCl_3$
b. $MgCl_2$
c. NaCl
d. HCl

Ans. d
Explanation:
The correct answer is HCl.
A solution reacts with chalk powder to give a gas that turns lime-water milky.
The solution contains HCl.

41. If the length and breadth of a rectangular plot of land are increased by 10% and 8% respectively, then by how much percentage will its area increase or decrease?
a. 16.8% increase
b. 18.8% decrease
c. 18.8% increase
d. 16.8% decrease

Ans. c
Explanation:
Given:
Percentage increase in length = 10%
Percentage increase in breadth = 8%
Formula used:
Area of rectangle = length × breadth
Percentage increase/decrease = Increase/decrease ÷ Old area × 100
Calculation:
Let the length and breadth of rectangle be 100cm and 50 cm respectively.
⇒ Area = 100 × 50 = 5000 sq. cm
Now, increased length = 100 × 110/100 = 110 cm
⇒ Increased breadth = 50 × 108/100 = 54
New area = 110 × 54 = 5940
∴ Percentage increase in area = (5940 - 5000)/5000 × 100
⇒ 940/5000 × 100 = 18.8%

42. When was the provision of Bharat Ratna introduced?
a. 1954
b. 1950
c. 1955
d. 1952

Ans. a
Explanation:
The correct answer is1954.
The provision of Bharat Ratna was introduced in 1954.

43. A shopkeeper marks his goods at a price so that after allowing a discount of 20%, he still makes a profit of 8%. Find the marked price of an article which costs him Rs. 500.
a. Rs. 765
b. Rs. 575
c. Rs. 875
d. Rs. 675

Ans. d
Explanation:
Given:
Cost Price = Rs.500
Discount = 20%
Profit = 8%
Formulas used:
Profit = Selling Price - Cost Price
Profit percent = Profit/Cost Price × 100
Discount = Marked Price - Selling Price
Discount percent = Discount/MP × 100
Calculation:
Selling price at 8% profit;
⇒ 500 × 8% + 500
⇒ Selling price = 40 + 500 = Rs.540
Discount percent = (Marked price - Selling price)/Marked price × 100
⇒ 20 = (MP - 540)/MP × 100
⇒ MP = 5MP - 2700

⇒ 4MP = 2700
∴ MP = Rs.675

44. Which countries have been declared malaria-free by WHO in May 2019?
a. Belgium and Qatar
b. India and Singapore
c. Mauritius and Malaysia
d. Algeria and Argentina

Ans. d
Explanation:
The correct answer is Algeria and Argentina.
Algeria and Argentina have been declared malaria-free by WHO in May 2019.

45. In 2020, How many countries of the world have Veto power in United Nations Security Council?
a. 5
b. 4
c. 7
d. 6

Ans. a
Explanation:
The correct answer is5.
The number of countries in the world to have veto power in the UN Security Council in 2020 is 5.

46. When was the Indian National Committee for Space Research formed?
a. 1965
b. 1963
c. 1961
d. 1962

Ans. d
Explanation:
The correct answer is 1962.
Indian National Committee for Space Research was formed in 1962.

47. What is total forest cover of India as per ISFR report 2019?
a. 24.39% of the total geographical area of the country
b. 21.67% of the total geographical area of the country
c. 24.16% of the total geographical area of the country
d. 21.05% of the total geographical area of the country

Ans. b
Explanation:
The correct answer is 21.67% of the total geographical area of the country.
The total forest cover of India as per the ISFR report 2019 was 21.67% of the total geographical area of the country.

48. Which of the following state has implemented a women-oriented community-based poverty alleviation program 'Kudumbasree'?
a. Tamil Nadu
b. Andra Pradesh
c. West Bengal
d. Kerala

Ans. d
Explanation:
The correct answer isKerala.
Kudumbashree, the Kerala State Poverty Alleviation Mission was inaugurated on 17 May 1998 by the Prime Minister Shri Atal Bihari Vajpayee.

49. Buying or selling goods electronically is known as:
a. multimedia
b. e-commerce
c. finance
d. money control

Ans. b
Explanation:
The correct answer is e-commerce.
Buying or selling goods electronically is known as e-commerce.

50. The sum of two positive numbers is 384 and their HCF is 24. How many pairs of such numbers can be formed?
a. 8
b. 3
c. 5
d. 4

Ans. d
Explanation:
Given:
Sum of two positive numbers = 384
HCF of two positive numbers = 24
Calculation:
Let the two numbers be a and b respectively.
Now, 24a + 24b = 384
⇒ 24(a + b) = 384
⇒ a + b = 384/24 = 16
⇒ a + b = 16
NOTE- The numbers that we take should be co-prime.
For a = 1, b = 15 [1 × 24 + 15 × 24 = 384]
For a = 3, b = 13 [3 × 24 + 13 × 24 = 384]
For a = 5, b = 11 [5 × 24 + 11 × 24 = 384]
For a = 7, b = 9 [7 × 24 + 9 × 24 = 384]
∴ The number of such pairs is 4.

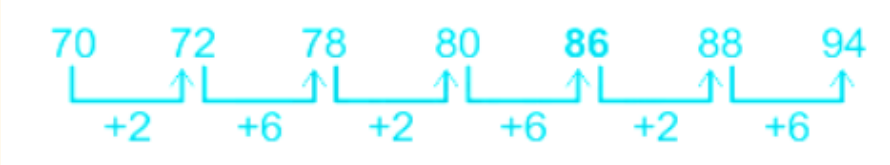
51. The length, breadth and height of a cuboid are 27 cm, 18 cm and 21 cm respectively. How many cubes of side 3 cm can be cut from the cuboid?
a. 278
b. 378
c. 738
d. 368

Ans. b
Explanation:
Given:
Dimensions of a cuboid are, l × b × h = 27 cm × 18 cm × 21 cm
Formulas used:

Volume of cuboid = l × b × h
Volume of cube with side a = a
3
Calculation:
No of cube to be cut = Volume of cuboid/Volume of cube
⇒ (27 cm × 18 cm × 21 cm)/(3 × 3 × 3)
⇒ 18 × 21
⇒ 378
∴ The no of cubes that can be cut out of cuboid = 378

52. Select the number from among the given options that can replace the question mark (?) in the following series.
70, 72, 78, 80, ?, 88, 94
a. 96
b. 80
c. 86
d. 74

Ans. c
Explanation:
Given: 70, 72, 78, 80, ?, 88, 94.
The logic follows here is: Addition of 2 and 6 alternatively as shown below,



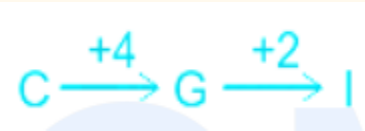
Hence, 86 is the correct answer.

53. In a firm, the ratio of male and female officers is in the ratio 4 : 7. If 50 male officers and 100 female officers are shifted to another firm, then the ratio of male and female officers becomes 7 : 12. Find the number of male officers before shifting in the firm.
a. 400
b. 450
c. 300
d. 500

Ans. a
Explanation:
Given:
The ratio of male and female officers = 4 : 7
Calculation:
Let the number of male and female officers be 4y and 7y.
As per the question;
(4y - 50)/(7y - 100) = 7/12
⇒ (7y - 100) × 7 = (4y - 50) × 12
⇒ 49y - 700 = 48y - 600
⇒ y = - 600 + 700
⇒ y = 100
∴ No of male officer before shifting = 4y = 4 × 100
⇒ 400

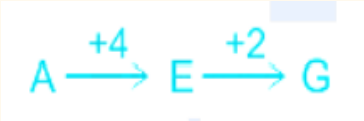
54. In the four letter-clusters given below, three are alike in some manner and one is different. Select the odd one.
a. CGI
b. EIK
c. AEG
d. FHJ

Ans. d
Explanation:
By checking options:
(1) CGI

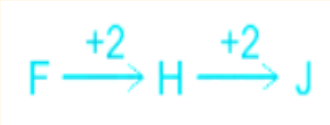


(2) EIK

(3) AEG



(4) FHJ



Hence, FHJ is the odd one.

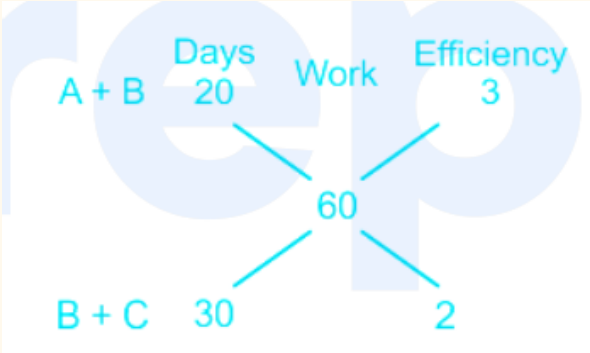
55. Service sector is a part of _____ of an economy.
a. secondary sector
b. tertiary sector
c. public sector
d. primary sector

Ans. b
Explanation:
The correct answer is the tertiary sector.
The service sector is a part of the tertiary sector of an economy.

56. A and B can complete a piece of work in 20 days. B and C can complete it in 30 days. A is twice as good as C in completing the work. Find in how many days will B alone complete it.
a. 60 days
b. 55 days
c. 65 days
d. 50 days

Ans. a
Explanation:
Given:
Time taken by A and B = 20 days
Time taken by B and C = 30 days
Formula used:
Total work = No of days × Efficiency
The ratio of efficiency of A and C = 2 : 1

⇒ A/C = 2 : 1
⇒ 2C = A
Calculation:
By LCM Method, let the total work be the common multiple of 20 and 30, that is 60.



One day work done by (A + B) = 3 (1)
One day work done by (B + C) = 2 (2)
By putting the value of 2C = A in (1)
⇒ A + B = 3
⇒ 2C + B = 3 (3)
By solving [2 × (2) - (3)]
⇒ 2B + 2C - (2C + B) = 4 - 3
⇒ B = 1
By putting the value of B = 1 in equation (1)
⇒ A + B = 3
⇒ A + 1 = 3
⇒ A = 2
One day work by (A + B) = 1 + 2 = 3
Total work = 20 × 3 = 60
∴ No of days taken by B = 60/1 = 60

57. What is the freezing point of water on Kelvin scale?
a. 473.15 K
b. 173.15 K
c. 273.15 K
d. 373.15 K

Ans. c
Explanation:

The correct answer is 273.15 K.
The freezing point of water on the Kelvin scale is 273.15 K.

58. Which is RK Narayan's first novel?
a. Swami and Friends
b. The Guide
c. The English Teacher
d. Malgudi Days

Ans. a
Explanation:
The correct answer is Swami and Friends.
The first novel of RK Narayan is Swami and Friends.

59. How many cities were selected in 2016 first batch to be develop as smart cities of India?
a. 10
b. 15
c. 25
d. 20

Ans. d
Explanation:
The correct answer is20.
The number of cities selected in the first batch to be developed as Smart Cities of India in 2016 is 20.

60. Find the least number, which must be subtracted from 60065 to make it a perfect square.
a. 40
b. 30
c. 35
d. 20

Ans. a
Explanation:
Given:

60065
Calculation:
√60065 = √5 × 41 × 293 = 245.08
A perfect square number is less than 245.08. Now, we find the square of 245.
⇒ 245 × 245 = 60025
Let us now subtract 60025 from 60045.
⇒ 60065 - 60025 = 40
∴ 40 must be subtracted from 60065 to make it a perfect square.

61. How many members are there in Rajya Sabha?
a. 230
b. 240
c. 250
d. 225

Ans. c
Explanation:
The correct answer is 250.
The number of members present in the Rajya Sabha is 250.

62. If a + b = 10 and a2+ b2= 68 find a3+ b3.
a. 560
b. 540
c. 620
d. 520

Ans. d
Explanation:
Given:
a + b = 10 & a 2 + b 2 = 68
Formulas used:
(a + b)2 = a2 + b2 + 2ab
a 3 + b 3 = (a + b)(a 2 - ab + b 2)
Calculation:
(a + b) 2 = 68 + 2ab
⇒ 10^2 - 68 = 2ab
⇒ ab = 32/2 = 16

a 3 + b 3 = 10 × (68 - 16)
⇒ a 3 + b 3 = 520
∴ The required result = 520

63. 2(sin6θ + cos6θ) - 3(sin 4θ + cos 4θ) is equal to:
a. 0
b. -1
c. 2
d. 1

Ans. b
Explanation:
Given:
2(sin 6θ + cos 6θ) - 3(sin 4θ + cos 4θ)
Formulas used:
(a + b)3 = a3 + b3 + 3ab(a + b)
⇒ (a + b) 3 - 3ab(a + b) = a 3 + b 3
(a + b)2 = a2 + b2 + 2ab
⇒ a 2 + b 2 = (a + b) 2 - 2ab a
sin2a + cos2a = 1
Calculation:
2(sin 6θ + cos 6θ) - 3(sin 4θ + cos 4θ)
⇒ 2{(sin2θ + cos2θ)3 - 3 sin 2θ cos 2θ(sin 2θ + cos 2θ)} - 3{(sin2θ + cos2θ) - 2sin2θ cos 2θ}
⇒ 2{1 - 3sin 2θ cos 2θ} - 3{1 - 2sin 2θ cos 2θ}
⇒ 2 - 6sin 2θ cos 2θ - 3 + 6sin 2θ cos 2θ
⇒ 2 - 3 = - 1
∴ 2(sin 6θ + cos 6θ) - 3(sin 4θ + cos 4θ) = - 1

64. How many categories are there of Nobel Prize?
a. 5
b. 7
c. 4
d. 6
Ans. d
Explanation:
The correct answer is6.
The number of categories in the Nobel Prize is 6.

65. When was India's first satellite, the Aryabhata spacecraft launched?
a. June 10, 1979
b. April 19, 1976
c. June 10, 1980
d. April 19, 1975

Ans. d
Explanation:
The correct answer is April 19, 1975.
India's first satellite, the Aryabhata spacecraft was launched on April 19, 1975.

66. How many wars were fought by the British with Mysore?
a. 6
b. 4
c. 5
d. 3

Ans. b
Explanation:
The correct answer is 4.
The number of wars fought by the British with Mysore was 4.

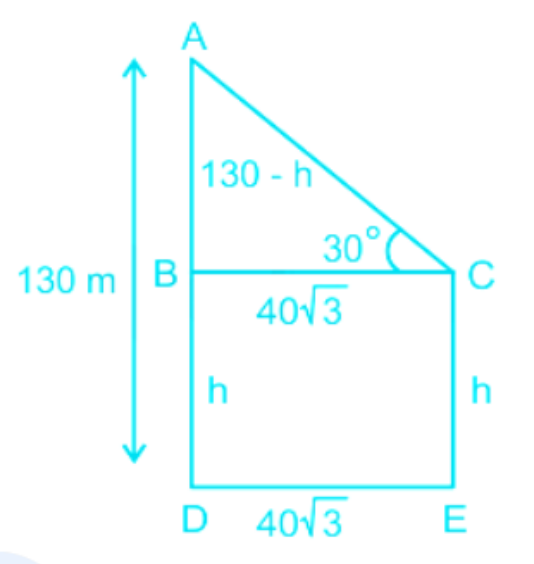
67. When was the first session of Indian National Congress held?
a. June 1885
b. December 1889
c. November 1889
d. December 1885

Ans. d
Explanation:
The correct answer is December 1885.
The first session of the Indian National Congress was held in December 1885.

68. The horizontal distance between two towers is $40\sqrt{3}$ m. The angle of depression of the top of the first tower when seen from the top of the second tower is 30°. If the height of the second tower is 130 m, find the height of the first tower.

a. 80 m
b. 90 m
c. 85 m
d. 95 m

Ans. b
Explanation:
Given:
The horizontal distance between two towers = $40\sqrt{3}$ m



Calculation:
Let the height of the first tower = h
In triangle ABC, AB/BC = tan 30°
⇒ $(130 - h)/40\sqrt{3} = 1/\sqrt{3}$
⇒ 130 - h = 40
⇒ h = 90
∴ The height of the first tower = 90 m

69. What is the theme of World Environment Day 2019?
a. deforestation
b. Water pollution
c. Soil pollution
d. Air pollution

Ans. d

Explanation:
The correct answer is Air pollution.
The theme of World Environment Day 2019 is Air Pollution.

70. Select the option that is related to the third letter-cluster in the same way as the second letter-cluster is related to the first letter-cluster.
MNTK : HIOF :: RUNA : ?
a. MPIV
b. NPIU
c. MPJV
d. VZSF

Ans. a
Explanation:
Given: MNTK : HIOF :: RUNA : ?
The logic follows here is:

Similarly,

Hence, MPIV is the correct answer.

71. If x : y = 4 : 9, find 9x + 4y : 18x + 3y
a. 2 : 3
b. 3 : 2
c. 11 : 8
d. 8 : 11

Ans. d

Explanation:
Given:
x : y = 4 : 9
Calculation:
By putting the values of x : y in the equations, we get;
9x + 4y = 9 × 4 + 4 × 9 = 72
18x + 3y = 18 × 4 + 3 × 9 = 99
∴ The required ratio 9x + 4y : 18x + 3y = 72 : 99
⇒ 8 : 11

72. A and B can complete a job in 40 days and 60 days respectively. They work together for some days and B leaves the job. If A completes the rest of the work in 10 days, find for how many days B worked.
a. 15 days
b. 18 days
c. 16 days
d. 14 days

Ans. b
Explanation:
Given:
Time taken by A = 40 days
Time taken by B = 60 days
Calculation:
Let the total work be = 1
One day work done by A = 1/40
One day work done by B = 1/60
One day work done by both A and B = 1/40 + 1/60
Remaining work done by A in 10 days = 10 × 1/40 = 1/4
⇒ Part of the work done by A and B together = 1 - 1/4 = 3/4
Efficiency × No of days = Total work
(1/40 + 1/60) × No of days = 3/4
⇒ No of days = 3/4 ÷ (1/40 + 1/60)
⇒ No of days = 3/4 ÷ 5/120
⇒ 3/4 × 120/5
⇒ 18
∴ The no of days B worked for is 18.

73. Who was one of the co-founder of Ghadar Party?
a. Lala Lajpatrai
b. Gopal Krishan Gokhale
c. Har Dayal
d. Dada Bhai Naroji

Ans. c
Explanation:
The correct answer is Har Dayal.
One of the co-founders of the Ghadar Party is Har Dayal.

74. A man travels a distance of 420 km by train which moves at the speed of 75 km/h and returns back by car at the speed of 50 km/h. Find his average speed for the whole journey.
a. 65 km/h
b. 66 km/h
c. 60 km/h
d. 68 km/h

Ans. c
Explanation:
Given:
Distance = 420 km
Speed of the train = 75 km/h
Speed of the car = 50 km/h
Formula used:
Average speed = Total Distance/Total Time
Time = Distance/Speed
Calculation:
Total Time = 420 km/75 km/h + 420 km/50 km/h
⇒ 5.6 + 8.4 = 14 hours
Total Distance covered = 420 km by train + 420 km by car = 840 km
∴ Average speed = 840 km/14 hours = 60 km/h

75. simplify: $\frac{25+3\ of\ 8-4}{27-3\ of\ (8-4)}$
a. 5

b. $\frac{37}{15}$

c. 3

d. 4

Ans. c

Explanation:

Given:

$\frac{25+3\ of\ 8-4}{27-3\ of\ (8-4)}$

Calculation:

$\frac{25+3\ of\ 8-4}{27-3\ of\ (8-4)}$

⇒ (25 + 3 × 8 - 4)/(27 - 3 of 4)

⇒ (25 + 24 - 4)/(27 - 3 × 4)

⇒ 45/(27 - 12)

⇒ 45/15

⇒ 3

∴ The required result = 3

76. If $\sqrt{1225 \times \sqrt{32 \div x}} = 70$ **find the value of x.**

a. 4

b. 8

c. 16

d. 2

Ans. d

Explanation:

Given:

$\sqrt{1225 \times \sqrt{32 \div x}} = 70$

Formulas used:

√a = (a)1/2 = b

⇒ (a) 1/2 = b

⇒ a = b2

Calculation:

⇒ $\sqrt{5^2} \times 7^2 \times \sqrt{2^5} \div x = 70$

⇒ $35 \times \sqrt{2^2}(\sqrt{2}/x) = 70$

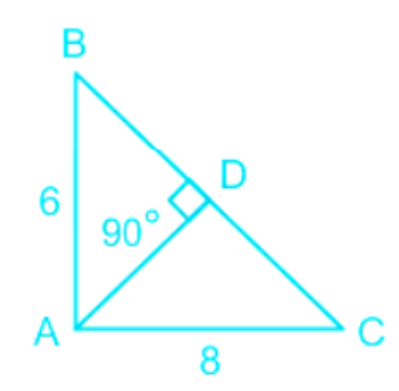
⇒ 35 × 2 √√2/x = 70
⇒ 70 × √√2/x = 70
√1225 × √32 ÷ x = 70
√1225 × √32 ÷ x = 70
⇒ √√2/x = 1
⇒ √2/x = 1^2
⇒ √2/x = 1
⇒ 2/x = 1^2
⇒ 2/x = 1
⇒ x = 2
∴ The value of x is 2.

77. Symbol for Methane is
a. CH 3
b. CH 1
c. CH 4
d. CH 2

Ans. c
Explanation:
The correct answer is CH 4.
The symbol for Methane is CH 4.

78. In ΔABC, ∠A = 90°, AB = 6 cm and AC = 8 cm. If AD is perpendicular to BC, the AD is equal to:
a. 3.8 cm
b. 4.4 cm
c. 4.8 cm
d. 4.6 cm

Ans. c
Explanation:



Given:
In ΔABC, ∠A = 90°, AB = 6 cm and AC = 8 cm
AD is perpendicular to BC.
Formulas used:
Area of triangle = 1/2 × Base × Altitude
Pythagoras Theorem
BC 2 = AB2 + AC 2
Calculation:
BC 2 = 6^2+ 8^2 = 36 + 64
⇒ BC = √100 = 10 cm
Area of triangle ABC;
1/2 × AC × AB = 1/2 × BC × AD
⇒ 8 × 6 = 10 × AD
⇒ AD = 48/10
⇒ AD = 4.8 cm

79. When the integer m is divided by 8, the remainder is 5. What is the remainder if 7m is divided by 8?
a. 5
b. 4
c. 3
d. 6

Ans. c
Explanation:
Concept:
Dividend = Divisor × Quotient + Remainder
Calculation:

m = 8 × q + 5 [where q is quotient]
7m = 7(8 × q + 5)
⇒ 7 × 8q + 7 × 5
⇒ 7 × 8q + 32 + 3
⇒ 7 × 8q + 8 × 4 + 3
⇒ 8(7q + 4) + 3
∴ The remainder when 7m is divided by 8 is 3.

80. When was the Dowry Prohibition Act commenced?
a. 1960
b. 1965
c. 1961
d. 1963

Ans. c
Explanation:
The correct answer is 1961.
The Dowry Prohibition Act was commenced in the year 1961.

81. Simplify: 245 - [135 - {84 ÷ 4 of 3 - (11 - 12 ÷ 3)}]
a. 110
b. 100
c. 90
d. 120

Ans. a
Explanation:
Given:
245 - [135 - {84 ÷ 4 of 3 - (11 - 12 ÷ 3)}]
Calculation:
245 - [135 - {84 ÷ 4 of 3 - (11 - 12 ÷ 3)}]
⇒ 245 - [135 - {84 ÷ 4 of 3 - (11 - 4)}]
⇒ 245 - [135 - {84 ÷ 4 × 3 - 7}]
⇒ 245 - [135 - {84 ÷ 12 - 7}]
⇒ 245 - [135 - {7 - 7}]
⇒ 245 - [135 - 0]
⇒ 245 - 135

⇒ 110
∴ The required result = 110

82. A sum of money is invested for 2 years at 10% compound interest p.a. It would fetch Rs. 1,762 more if interest is calculated half yearly. Find the sum invested.
a. Rs. 2,30,000
b. Rs. 3,40,000
c. Rs. 3,30,000
d. Rs. 3, 20,000

Ans. d
Explanation:
Given:
Difference between the compound interest received for 2 years compounded annually and half yearly = Rs.1762
Time = 2 years
Rate = 10% per annum
Formulas used:
Compound Interest = Amount - Principal
⇒ Amount = Principal + Compound Interest
⇒ Amount = Principal × (1 + r/100)
n [n = No of periods]
Calculation:
Amount, when interest is compounded annually:
n = 2, R = 10%
⇒ P (1 + 10/100)2
⇒ P (11/10)2 (1)
Amount, when interest is compounded half yearly:
n = 2 × 2 = 4
Rate = 10%/2 = 5%
⇒ P (1 + 5/100)4
⇒ P (105/100)4
⇒ P (21/20)4 (2)
As per the question:
P (21/20) 4 - P (11/10) 2 = 1762
⇒ P (21 × 21 × 21 × 21) ÷ (20 × 20 × 20 × 20) - P (11 × 11) ÷ (10 × 10) = 1762

⇒ P [194481/160000 - 121/100] = 1762
⇒ P [(194481 - 1600 × 121)/160000] = 1762
⇒ P [(194481 - 193600)/160000] = 1762
⇒ P [881/160000] = 1762
⇒ P × 881 = 1762 × 160000
⇒ P = (1762 × 160000)/881
⇒ P = 320000
∴ The required sum is Rs.320000.

83. What is the approximate total length of coastline of India including the coastline of Lakshadweep islands and Andaman & Nicobar Islands?
a. 4523 km
b. 5717 km
c. 7517 km
d. 5423 km

Ans. c
Explanation:
The correct answer is 7517 km.
The estimated total length of the coastline of India including the coastline of Lakshadweep Islands and Andaman and Nicobar Islands is 7517 km.

84. Which is the highest literate state of India as per Census 2011?
a. Kerala
b. Mizoram
c. Lakshadweep
d. Goa

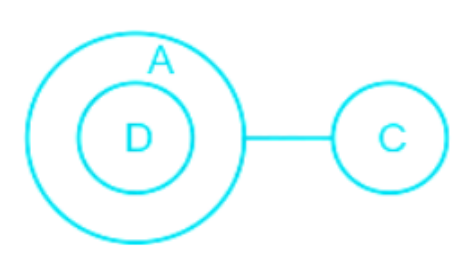
Ans. a
Explanation:
The correct answer is Kerala.
The highest literate state of India as per Census 2011 is Kerala .
According to the 2011 census, the literacy rate of Kerala is 94% .
Kerala, Lakshadweep, Mizoram, Goa, Tripura are the top five literate states in India as per the 2011 census.

85. Read the given statement(s) and conclusions carefully. Assuming that the

information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statement(s).

Statements:
I. All D are A.
II. No A is C.
Conclusions:
I. No D is C.
II. Some C are D.
a. Both conclusion I and II follows
b. Only conclusion I follows
c. Only conclusion II follows
d. Neither conclusion follows

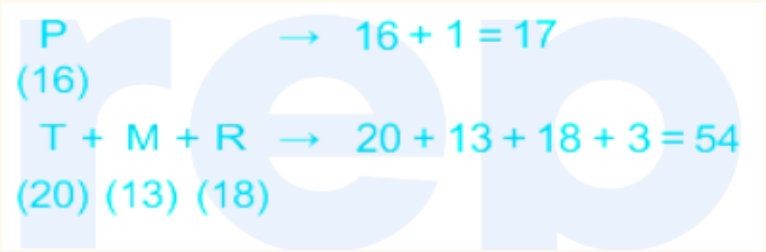
Ans. b
Explanation:
The least possible Venn diagram is:



Conclusions:
I. No D is C → True (as all D are A and no A is C, implies no D is C also)
II. Some C are D → False (as no D is C is true)
Hence, Only conclusion I follows.

86. In a certain code, P is coded as 17 and TMR is coded as 54. How will NARESH be written as in that code?
a. 71
b. 65
c. 73
d. 78

Ans. a
Explanation:
Given: P is coded as 17 and TMR is coded as 54.
The logic follows here is:
Sum of positional value + number of letters, as shown below,
P = Number of letter = 1
TMR = Number of letters = 3



Similarly,
NARESH = Number of letters = 6

Hence, 71 is the correct answer.

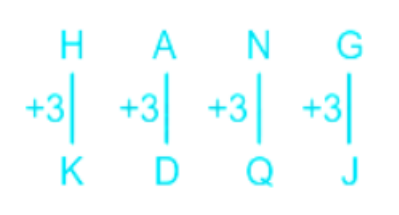
87. If the letters of the word ADISNHPANRKARFACHTARKYAR were written in reverse order, then which would be the third letter to the right of the ninth letter from the left?
a. A
b. R
c. K
d. N

Ans. b
Explanation:
Given: ADISNHPANRKARFACHTARKYAR
The logic follows here is:
(1) When given word is written in reverse order → RAYKRATHCAFRAKRNAPHNSIDA
(2) The ninth letter from the left → RAYKRATH CAFRAKRNAPHNSIDA → C
(3) The third letter to the right of the ninth letter from the left → RAYKRATHCAF RAKRNAPHNSIDA → R

88. Select the option that is related to the third letter-cluster in the same way as the second letter-cluster is related to the first letter-cluster.
COCK : FRFN :: HANG : ?
a. IBOJ
b. JCOI
c. KDQJ
d. COBH

Ans. c
Explanation:
Given: COCK : FRFN :: HANG : ?
The logic follows here is: Addition of 3 to the positional values, as shown below,

Similarly,



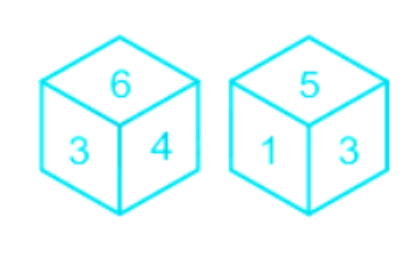
Hence, KDQJ is the correct answer.

89. In a class of 36 students, the number of boys are twice the number of girls. In the class, there are 13 boys before Reema (girl) whose position is 19 th in the class. How many girls are there in the class after Reema?
a. 6
b. 5
c. 12
d. 10

Ans. a
Explanation:

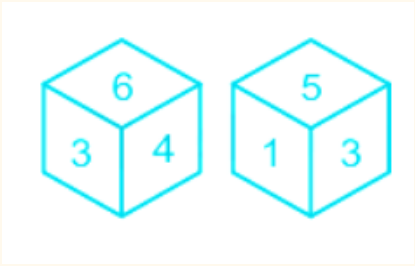
Total students in a class = 36.
Let the number of girls be G, then number of boys will be 2G (according to the question), therefore,
G + 2G = 36
3G = 36
G = 12
Thus, the number of girls = 12
And, the number of boys = 24
Now, according to question,
Position of Reema in class = 19 th
Number of students before Reema = 19 - 1 = 18
Number of boys before Reema = 13 (given)
Therefore, number of girls before Reema = 18 - 13 = 5
Number of girls after Reema (girl) = Total girls - 5 - 1
= 12 - 5 - 1
= 6
Hence, there are 6 girls after Reema.

90. Two different positions of the same dice are shown. Select the number that will be on the face opposite to that of number 5.

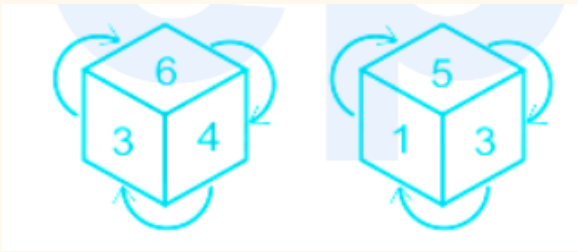


a. 6
b. 2
c. 3
d. 4

Ans. d
Explanation:
Given:



From Dice (1) and Dice (2), while moving in clockwise direction from common number 3:



From the both dices:

Dice 1	3	6	4
Dice 3	3	1	5

Thus, 4 is opposite to 5.
Hence, 4is the correct answer.

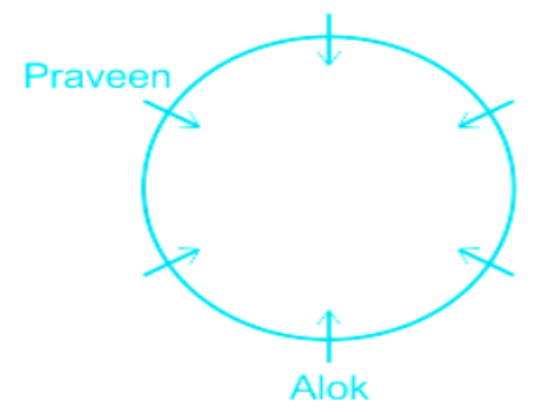
91. If 12 October 1997 was a Saturday, then what day was it on the same date in the year 2008?
a. Monday
b. Thursday
c. Sunday
d. Saturday

Ans. d
Explanation:
Given: 12 October 1997 was a Saturday.
Number of leap years = 3 (2000, 2004, 2008)

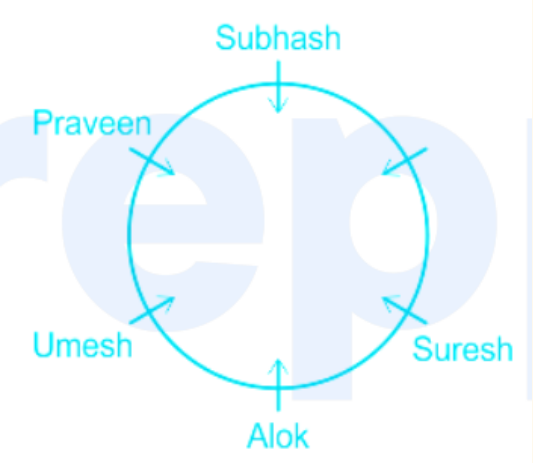
Therefore, number of odd days = 3 × 2 = 6
Non leap years = 8 (1998, 1999, 2001, 2002, 2003, 2005, 2006, and 2007)
Therefore, number of odd days = 8 × 1 = 8
Total odd days = 6 + 8
= 14
Now, 14 ÷ 7 = 2
⇒ No remainder.
⇒ 12 October 2008 will be the same day as on 12 October 1997.
Hence, S aturday is the correct answer.

92. Six friends are playing cards in a circular enclosure facing the centre. Subhash is sitting to the right of Pramod. There is one person sitting in between Umesh and Suresh. Praveen is sitting in between Subhash and Umesh and Praveen is second to the left of Alok. If Alok and Subhash mutually change their places, then who will be sitting second to the right of Praveen?
a. Pramod
b. Subhash
c. Suresh
d. Umesh

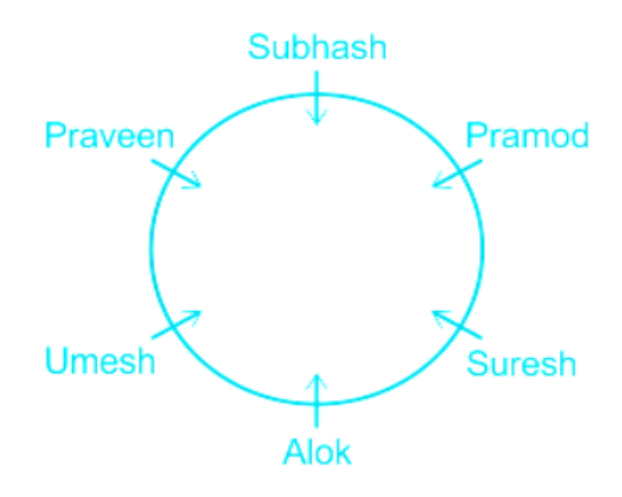
Ans. b
Explanation:
Six friends are playing cards in a circular enclosure facing the centre.
(1) Praveen is second to the left of Alok.



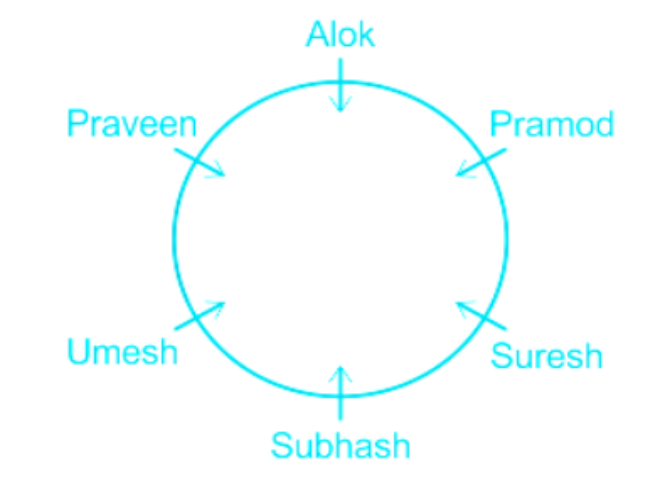
(2) There is one person sitting in between Umesh and Suresh.
(3) Praveen is sitting in between Subhash and Umesh.



(4) Subhash is sitting to the right of Pramod. Thus, the final seating arrangement is as Follows:



Now, if Alok and Subhash mutually change their places,



Hence, Subash will be sitting second to the right of Praveen.

93. Four numbers have been given, out of which three are alike in some manner and one is different. Select the number that is different from the rest.
a. 34
b. 16
c. 25
d. 29

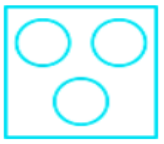
Ans. d
Explanation:
The logic follows here is:
All numbers except 29 are composite number, whereas 29 is a prime number.
By checking options:
(1) 34 → It is a composite number.
(2) 16 → It is a composite number.
(3) 25 → It is a composite number.
(4) 29 → It is a prime number.
Hence, 29 is the odd one out.

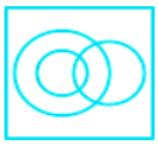
94. Select the option in which the numbers share the same relationship as that shared by the given pair of numbers.
11 : 132
a. 6 : 48
b. 8 : 72
c. 7 : 61
d. 9 : 93

Ans. b
Explanation:
Given: 11 : 132
The logic follows here is:
11 : 132 → 11 × (11 + 1)
= 11 × 12
= 132

By checking options:
(1) 6 : 48 → 6 × (6 + 1)
= 6 × 7
= 42 ≠ 48
(2) 8 : 72 → 8 × (8 + 1)
= 8 × 9
= 72
(3) 7 : 61 → 7 × (7 + 1)
= 7 × 8
= 56 ≠ 61
(4) 9 : 93 → 9 × (9 + 1)
= 9 × 10
= 90 ≠ 93
Hence, 8 : 72 is the correct answer.

95. Select the Venn diagram that best represents the relationship between the following classes.
Sports, Cricket, Cockroach.

a. 

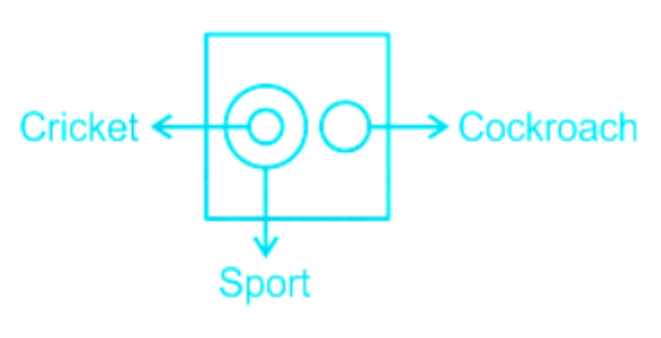
b. 

c. 

d. 

Ans. c
Explanation:
Cricket is one of the most popular sports in the world and Cockroaches are insects .
The Venn diagram that best represents the relationship between the following

classes.
Sports, Cricket, Cockroach. which figure are given below -

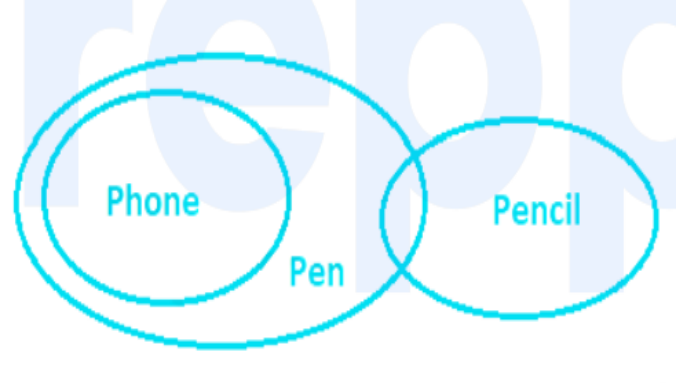


Cricket has been an established team sport for hundreds of years and is one of the most popular sports in the world. Competitive cricket is essentially a bat and ball sport. It is played by two teams on an oval and involves batting, fielding and bowling. Cockroaches are generalized insects with few special adaptations, and may be among the most primitive living Neopteran insects.
Hence, "option 3" is the correct answer.

96. Read the given statement(s) and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts. decide which of the given conclusions logically follow(s) from the statement(s).
Statements:
1. All phones are pens.
2, Some pens are pencils.
Conclusions:
I. Some phones are pencils.
II. Some pencils are phones.
III. Some pencils are pens.
IV. Some pens are phones.
a. Neither conclusion I nor II follows
b. Only conclusions I and II follow.
c. Only conclusions III and IV follow
d. Only conclusions II and III follow

Ans. c
Explanation:
Statements:

1. All phones are pens.
2, Some pens are pencils.



Conclusions:
I. Some phones are pencils. → Not follow (All phones are pens, some pens are pencils. There is no relation between phone and pencil)
II. Some pencils are phones. → Not follow (All phones are pens, some pens are pencils. There is no relation between pencil and phone)
III. Some pencils are pens. → Follow (Some pens are pencils. Some part of pencils are pens from the figure)
IV. Some pens are phones. → Follow (All phones are pens. So some pens are phones also possible)
Hence, "option 3" is the correct answer.

97. Select the option that is related to the third term in the same way as the second term is related to the first term.
Entomology : Insects :: Etymology : ?
a. Books
b. Satellites
c. Words
d. Plants

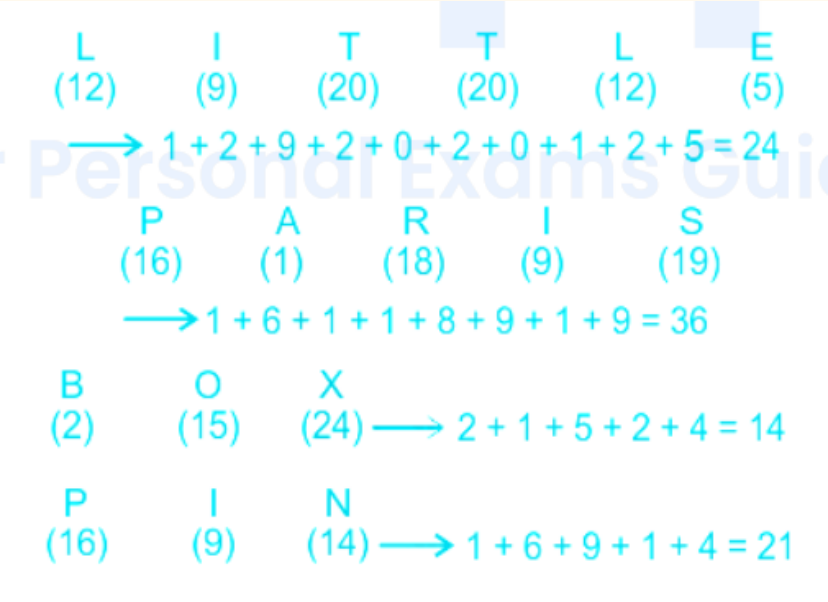
Ans. c
Explanation:
The logic followed here is:
Entomology is the study of Insects.
Similarly,
Etymology is the study of Words.
Hence, "Words" is the correct answer.

98. Select the combination of letters that when sequentially placed in the blanks will create a repetitive pattern
a_c_ab/b_a_bc/_bc_ab
a. cbcaaa
b. acbabc
c. bccaac
d. bcccab

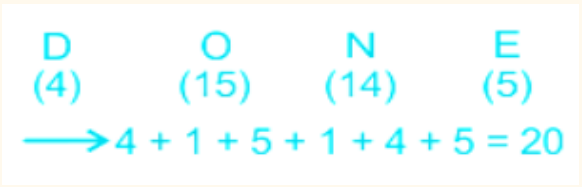
Ans. c
Explanation:
In the given question pattern are -
a_c_ab/b_a_bc/_bc_ab
1. cbcaaa → a c c b a b / b c a a b c / a b c a a b → there is not correct pattern.
2. acbabc → a a c c a b / b b a a b c / b b c c a b → there is not correct pattern.
3. bccaac → a b c c a b / b c a a b c / a b c c a b → there is correct pattern.
In which all three group two times a, b and c are present.
4. bcccab → a b c c a b / b c a c b c / a b c b a b → there is not correct pattern.
Option (3) gives a pattern of a b c c a b / b c a a b c / a b c c a b.
Hence, "option 3" is the correct answer.

99. In a certain code, LITTLE is coded as 24, PARIS is coded as 36, BOX is coded as 14 and PIN is coded as 21. How will DONE be written as in that code?
a. 29
b. 27
c. 20
d. 38

Ans. c
Explanation:
Given: LITTLE is coded as 24, PARIS is coded as 36, BOX is coded as 14 and PIN is coded as 21.
The logic follow here is:
Sum of digits of place value of the given letter in a word = code in number



Similarly,



Hence, 20 is the correct answer.

100. From among the given options, identify the number that DOES NOT belong to the following series.
2, 5, 14, 41, 122, 365, 1095
a. 41
b. 1095
c. 122
d. 365

Ans. b
Explanation:
The wrong number series are given below -
2, 5, 14, 41, 122, 365, 1095
The logic followed here is:
We multiply by 3 in first number and subtract 1 we get second number, we multiply by 3 in second number and subtract 1 we get third number and so on.

$2 \times 3 - 1 = 6 - 1 = 5$
$5 \times 3 - 1 = 15 - 1 = 14$
$14 \times 3 - 1 = 42 - 1 = 41$
$41 \times 3 - 1 = 123 - 1 = 122$
$122 \times 3 - 1 = 366 - 1 = 365$
$365 \times 3 - 1 = 1095 - 1 = 1094$ but given is 1095 which is wrong.
Hence, "1095" is the correct answer.