RRB NTPC 4 Jan 2021 Shift 1 Solution

1. Harish and Bimal can complete a task in 20 days. They worked at it for 15 days and then Bimal left. The remaining work was done by Harish alone, in 10 days. Harish alone can complete the entire task in:
a. 40 days
b. 30 days
c. 35 days
d. 45 days

Ans. a
Explanation:
Given:
No of days taken by Harish and Bimal = 20
Formula used:
No of days taken = Work/Efficiency
Calculation:
Let the total work be = 1
One day work done by Harish and Bimal = 1/20
Work done by Harish and Bimal in 15 days = 1/20 × 15 = 3/4
⇒ Remaining work = 1 - 3/4 = 1/4
Harish did the remaining work in 10 days alone.
⇒ One day work done by Harish = 1/4 ÷ 10 = 1/40
∴ Time taken by Harish to do the entire task alone = 1 ÷ 1/40 = 40 days

2. What is the keyboard command to delete ledger created in tally?
a. Alt + D
b. Ctrl + D
c. Shift + D
d. Alt + F2

Ans. a
Explanation:

The correct answer is Alt + D.
Alt + D is the keyboard command used to delete the ledger created in tally.

3. The main focus of the First Five-Year Plan was on the _____.
a. service sector
b. agricultural and industrial sector
c. agricultural sector
d. industrial sector

Ans. c
Explanation:
The correct answer is agricultural sector.
The main focus of the First Five-Year Plan was on the agricultural sector.

4. If √3 n= 729, then the value of n is equal to:
a. 6
b. 8
c. 12
d. 9

Ans. c
Explanation:
Given:
√3 n = 729
Formulas used:
(x a) b = x ab
If x a = x b then a = b
Calculation:
√3 n = 729
⇒ √3 n = $(3^2)^3$
⇒ (3 n)1/2 = (3 2) 3
⇒ (3 n) 1/2 = 3^6
⇒ n/2 = 6
∴ n = 12

5. In which year did India first participate in the Olympic games?

a. 1900
b. 1925
c. 1923
d. 1924

Ans. a
Explanation:
The correct answer is 1900.
India first participated in the Olympic Games in1900.

6. With which state is the Nabakalebara festival associated?
a. Odisha
b. Assam
c. Sikkim
d. West Bengal

Ans. a
Explanation:
The correct answer is Odisha.
Nabakalebara is a festival celebrated in Odisha state.

7. Which branch of physics deals with properties of fluids at rest?
a. Hydrostatics
b. Astrophysics
c. Thermodynamics
d. Optics

Ans. a
Explanation:
The correct answer is Hydrostatics.
Hydrostaticsis the branch of physics that deals with the properties of fluids at rest.

8. The HCF of two numbers is 6 and their LCM is 84. If one of these numbers is 42, then the second number is:
a. 12
b. 40

c. 48
d. 30

Ans. a
Explanation:
Given:
HCF of two numbers = 6
LCM of two numbers = 84
Formula used:
Product of two numbers = HCF × LCM
Calculation:
First No × Second No = 6 × 84
⇒ 42 × Second no = 6 × 84
⇒ Second No = (6 × 84)/42 = 12
∴ The second No = 12

9. The first Amendment to the constitution of India was made on _____.
a. 1951
b. 1953
c. 1952
d. 1950

Ans. a
Explanation:
The correct answer is 1951.
The First Amendment to the constitution of India was made in1951.

10. The pH range of a human body is:
a. 2.35 - 4.45
b. 5.35 - 6.45
c. 7.35 - 7.45
d. 8.35 - 9.45

Ans. c
Explanation:
The correct answer is 7.35 - 7.45.
The pH range of a human body is 7.35 - 7.45.

11. When was the Hindustan Republican Association formed?
a. 1920
b. 1922
c. 1924
d. 1926

Ans. c
Explanation:
The correct answer is 1924.
Hindustan Republican Association was a revolutionary organization formed in1924.

12. If $x^2y^2 + \frac{1}{x^2y^2} = 83$, then the value of xy-$\frac{1}{xy}$ is:
a. 85
b. 9
c. 10
d. 81

Ans. b
Explanation:
Given:
$x^2y^2 + \frac{1}{x^2y^2} = 83$
Formula used:
(a - b) = a2 + b2 - 2ab
Calculation:
x2y2 + 1/x 2y 2 = 83
By subtracting 2 from both sides
⇒ x 2 y 2 + 1/x 2 y 2 - 2 = 83 - 2
⇒ (xy - 1/xy)2 = 81
⇒ (xy - 1/xy) = √81
∴ (xy - 1/xy) = 9

13. As per Nov 2020, How many countries have membership in the World Trade Organisation?
a. 168
b. 160

c. 164
d. 165

Ans. c
Explanation:
The correct answer is 164.
As of Nov 2020, WTO has164 members representing 98% of world trade.

14. Where was the fist nuclear power plant set up in India?
a. Kalapakkam
b. Kakrapur
c. Tarapur
d. Kaiga

Ans. c
Explanation:
The correct answer is Tarapur.
Tarapur power plant was the first commercial nuclear power station built in India.

15. Who wrote the famous Hindi novel 'Tamas'?
a. Yashpal
b. Nagendra
c. Bhisham Sahni
d. Trilochan

Ans. c
Explanation:
The correct answer is Bhisham Sahni.
Bhisham Sahni was an Indian writer in the Hindi language.
He is best known for his famous Hindi novel ' Tamas '.

16. When did the Simon Commission arrive in India?
a. 1931
b. 1928
c. 1927
d. 1930

Ans. b
Explanation:
The correct answer is 1928.
The Simon commission arrived in India in1928.

17. The ratio of the number of females to that of male employees in a small company is 2 : 3. If the number of male employees in the company is 90, then the total number of employees working in the company is:
a. 150
b. 130
c. 90
d. 120

Ans. a
Explanation:
Given:
The ratio of number of females to males = 2 : 3
No of male employees = 90
Calculation:
Let the number of females and males be 2y and 3y
⇒ Total no of employees = 2y + 3y = 5y
3y = 90
⇒ y = 30
5y = 5 × 30 = 150
∴ Total no of employees = 150

18. If the area of a circle is 154 cm 2, then the circumference of the circle is:
a. 22 cm
b. 44 cm
c. 36 cm
d. 11 cm

Ans. b
Explanation:
Given:
Area of a circle = 154 cm 2

Formula used:
Area of a circle = πr2
Circumference of a circle = 2πr
Calculation:
πr 2 = 154
⇒ 22/7 × r 2 = 154
⇒ r 2 = 154 × 7/22 = 7^2
⇒ r = 7
∴ Circumference of a circle = 2 × 22/7 × 7 = 44 cm

19. Which industry uses limestone as raw material?
a. Planstic
b. Automobile
c. Utensils
d. Cement

Ans. d
Explanation:
The correct answer is Cement.
Limestone is a form of calcium carbonate which is used extensively for the manufacture of cement.

20. A businessman purchase 20 articles whose cost is equal to the selling price of 15 articles. The profit or loss percentage of the businessman is:
a. 33.33% profit
b. 25% profit
c. 15% profit
d. 23.33% profit

Ans. a
Explanation:
Given:
Cost price of 20 articles = Selling price of 15 articles
Formula used:
Profit = Selling Price - Cost Price
Profit percent = Profit/CP × 100
Calculation:

CP × 20 = SP × 15
⇒ 20/15 = SP/CP
Here, CP < SP
Profit = 20 - 15 = 5
Profit percent = 5/15 × 100 = 33.33%
∴ Profit percent = 33.33%

21. Programming language Java was developed by _____.
a. Paul Allen
b. Jaap Haartsen
c. Charles Simonyi
d. James Gosling

Ans. d
Explanation:
The correct answer is James Gosling.
Java was developed byJames Gosling.

22. A mango kept in a basket doubles every one minute. If the basket gets completely filled by mangoes in 30 minutes then in how many minutes half of the basket was filled?
a. 27
b. 29
c. 15
d. 28

Ans. b
Explanation:
Given:
A mango kept in a basket doubles every one minute.
The basket gets filled in 30 minutes.
Calculation:
The basket is full (1) in 30 minutes.
The Time required to fill the basket with mango is 30 minutes.
So, half the basket is filled in 29 minutes.
As in every minute, the basket gets doubled. So, in 29 minutes, it is half-filled and in the next minutes, it will be completely filled.

∴ Obviously, the basket will be half-filled (1/2) filled in 29 minutes.

23. Who built the Sanchi Stupa?
a. Ashoka
b. Chanakaya
c. Bindusara
d. Chandragupta

Ans. a
Explanation:
The correct answer is Ashoka.
Sanchi Stupa is a Buddhist complex built by Ashoka.

24. The first national flag of India is said to have hoisted at _____ in 1906.
a. Patna
b. Kolkata
c. New Delhi
d. Ahmedabad

Ans. b
Explanation:
The correct answer is Kolkata.
The first national flag in India is said to have been hoisted on 7th August 1906.
It was hoisted in the Parsee Bagan Square (Green Park) in Kolkata.

25. The pistil in the flower is _____.
a. a male reproductive part
b. unisexual
c. a female reproductive part
d. bisexual

Ans. c
Explanation:
The correct answer is a female reproductive part.
Pistil is the female reproductive part of a flower with a stigma at its top.

26. According to the World Development Report, countries having per capita

income of more than US$12,000 per annum as on 2016 are called:
a. poor countries
b. low income countries
c. rich countries
d. low middle income countries

Ans. c
Explanation:
The correct answer isrich countries.
According to the World Development Report, countries having per capita income of more than US$12,000 per annum as on 2016 are called rich countries.

27. The value of [(3√2 + 2) × (3√2 - 2)] of 13 + 15 is:
a. 616
b. 197
c. 140
d. 414

Ans. b
Explanation:
Given:
[(3√2 + 2) × (3√2 - 2)] of 13 + 15
Formula used:
(a - b)(a + b) = a2- b2
Calculation:
[(3√2 + 2) × (3√2 - 2)] of 13 + 15
⇒ [(3√2)2 - (2)2] × 13 + 15
⇒ [18 - 4] × 13 + 15
⇒ 14 × 13 + 15
⇒ 197
∴ The required result = 197

28. In a school, 60% of the students passed in an examination. If the number of failed candidates is 240, then the number of candidates that have passed is:
a. 600
b. 240

c. 360
d. 410

Ans. c
Explanation:
Given:
Percentage of students passed = 60%
No of failed students = 240
Calculation:
Total percentage of students = 100%
Percentage of students failed = 100% - 60% = 40%
⇒ 40% = 240
⇒ 1% = 240/40 = 6
∴ No of students passed = 60%
⇒ 60 × 6 = 360

29. When was INSAT 1B commissioned?
a. 1985
b. 1983
c. 1987
d. 1980

Ans. b
Explanation:
The correct answer is 1983
INSAT 1B was successfully launched by Space Shuttle of the USA in1983.

30. There is a carpet of length $20\frac{5}{2}$ m. How many small pieces of carpet, each of length $4\frac{1}{2}$ m, can it be cut out of it?
a. 7
b. 8
c. 9
d. 5

Ans. d
Explanation:

Given:
Length of carpet = m = 45/2 m
Length of small pieces of carpet = m = 9/2 m
Formula used:
No of small pieces of carpet = Length of carpet/Length of 1 small piece of carpet
Calculation:
∴ No of small pieces of carpet that can be cut out = 45/2 ÷ 9/2
⇒ 45/2 × 2/9
⇒ 5

31. 1. Banana price is more than that of lychee.
2. Banana price is less than that of kiwi.
3. Kiwi Price is more than that of banana and lychee.
If both, 1 and 2 statements are true, then third is:
a. vague
b. true
c. uncertain
d. false

Ans. b
Explanation:
Given:
Statement 1: Banana price is more than that of lychee.
Banana > Lychee
Statement 2: Banana price is less than that of kiwi.
Kiwi > Banana
Statement 3. Kiwi Price is more than that of banana and lychee.
Kiwi > Banana and Kiwi > Lychee
From 1 and 2:
Kiwi > Banana > Lychee
∵ Kiwi Price is more than that of banana and lychee is true.
∴ The third statement is true.
Hence, the correct answer is "True".

32. What was the codename for Pokhran Nuclear Test 2?
a. Laughing Buddha
b. Smiling Buddha

c. Operation Research
d. Operation Shakti

Ans. d
Explanation:
The correct answer is Operation Shakti.
Pokhran 2 was code-named Operation Shakti.

33. In which form is data stored in a computer?
a. Binary
b. Picture
c. Magnetic
d. Alphabets

Ans. a
Explanation:
The correct answer is Binary.
Data stored in a compute in the form of binary.

34. If the ratio between two numbers is 3 : 5 and their LCM is 120, then the numbers are:
a. 21; 35
b. 24; 40
c. 27; 45
d. 30; 50

Ans. b
Explanation:
Given:
The ratio between two numbers = 3 : 5
LCM of the two numbers = 120
Formula used:
Product of two numbers = LCM × HCF
Calculation:
Let the HCF of two numbers = y
Let the two numbers be 3y and 5y.
3y × 5y = 120 × y

⇒ 15y
2 = 120y
⇒ 15y = 120
⇒ y = 8
3y = 3 × 8 = 24
5y = 5 × 8 = 40
∴ The two numbers are 24, 40.

35. In which year were the Women Transforming India Awards started by NITI Aayog?
a. 2016
b. 2015
c. 2014
d. 2017

Ans. a
Explanation:
The correct answer is 2016.
NITI Aayog started the Women Transforming India Awards in2016.

36. How many non-permanent members does the UN Council have?
a. 15
b. 10
c. 12
d. 14

Ans. b
Explanation:
The correct answer is 10.
Among these 15 members, 5 are permanent members and10 are nonpermanent members.

37. When a smaller number divides a larger number, we get a quotient of 6 and a remainder of 5. Find the smaller number if the difference between the two numbers is 1540.
a. 580
b. 620
c. 735

d. 307

Ans. d
Explanation:
Given:
Difference between two numbers = 1540
Concept:
Dividend = Divisor × Quotient + Remainder
Calculation:
Let the smaller number be = a
⇒ Larger number = a + 1540
As per the question:
a + 1540 = a × 6 + 5
⇒ 5a = 1535
⇒ a = 307
∴ The smaller number = 307

38. The value of is $\frac{sin\ 23^{\circ}}{cos\ 67^{\circ}} + \frac{cos\ 71^{\circ}}{sin\ 19^{\circ}}$:

a. 1
b. 3
c. 2
d. 0

Ans. c
Explanation:
Given:
$\frac{sin\ 23^{\circ}}{cos\ 67^{\circ}} + \frac{cos\ 71^{\circ}}{sin\ 19^{\circ}}$
Formula used:
sin (90°- x) = cos x
cos (90°- x) = sin x
Calculation:
$\frac{sin\ 23^{\circ}}{cos\ 67^{\circ}} + \frac{cos\ 71^{\circ}}{sin\ 19^{\circ}}$
⇒ sin(90° - 67°)/cos 67° + cos (90° - 19°)/sin 19°
⇒ cos 67°/ cos 67° + sin 19°/sin 19°
⇒ 1 + 1 = 2

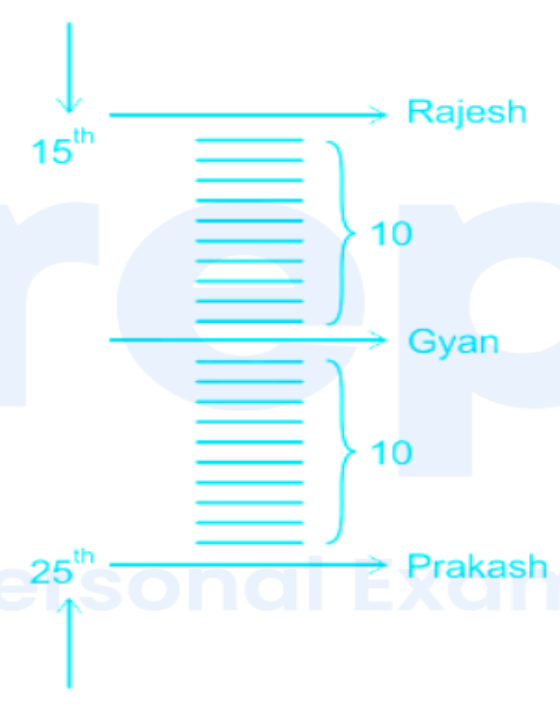
∴ The required result = 2

39. The ability of metals to be drawn into thin wires is called:
a. malleability
b. ductility
c. reactivity
d. solubility

Ans. b
Explanation:
The correct answer is ductility.
Ductilityis the ability of a material to be drawn or plastically deformed without fracture.

40. In a class of students, Rajesh ranks 15th from the top and Prakash ranks 25th from the bottom. Gyan is on the 10th place ahead of Prakash. If there are 10 students, exactly in between Rajesh and Gyan, then how many total students are there in the class?
a. 60
b. 55
c. 40
d. 50

Ans. a
Explanation:
1. Rajesh ranks 15
th from the top and Prakash ranks 25
th from the bottom.
2. Gyan is on the 10
th place ahead of Prakash.
3. If there are 10 students, exactly in between Rajesh and Gyan.



Total number of students in the class = 15 + 10 + 10 + 25 = 60
Hence, ‘ 60 ’ is the correct answer.

41. Pick the odd one out.
a. MNKL
b. IJGH
c. EFCD
d. OPQR

Ans. d
Explanation:
According to the alphabetical positions of the letters,
1. MNKL → M + 1 = N; N – 3 = K; K + 1 = L
2. IJGH → I + 1 = J; J – 3 = G; G + 1 = H
3. EFCD → E + 1 = F; F – 3 = C; C + 1 = D
4. OPQR → O + 1 = P; P + 1 = Q; Q + 1 = R
Hence, ‘ OPQR ’ is the odd one out.

42. Raja Ravi Varma was a famous _____.
a. painter
b. poet

c. mathematician
d. singer

Ans. a
Explanation:
The correct answer is painter.
Raja Ravi Varma was an Indian Painting artist.

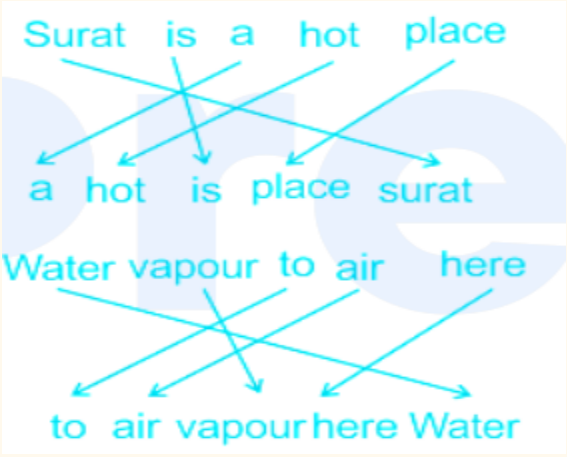
43. The difference between the simple interest and the compound interest on Rs.5000/- at 10% per annum for 3 years is:
a. Rs.155
b. Rs.480
c. Rs.233
d. Rs.235

Ans. a
Explanation:
Given:
Principal = Rs.5000
Rate of interest = 10% per annum
Time = 3 years
Formulas used:
Compound Interest = Amount - Principal
⇒ Amount = P (1 + r/100)
t
Simple Interest = Principal × Rate/100 × Time
Calculation:
Compound Interest = 5000(1 + 10/100)
3 - 5000
⇒ 5000(110/100)
3 - 5000
⇒ 5000[11/10 × 11/0 × 11/10 - 1]
⇒ 5000[(1331 - 1000)/1000]
⇒ 5 × 331 = Rs.1655
Simple Interest = 5000 × 10/100 × 3
⇒ Rs.1500
Difference between compound interest & simple interest = Rs.1655 - Rs.1500

⇒ Rs.155
∴ The required result = Rs.155

44. In a symbolic language, 'surat is a hot place' is written as 'a hot is place surat' and 'water vapour to air here', as 'to air vapour here water', then in the same language, 'shimla is a hill place' would be written as?
a. Shimla is a hill place
b. A hill is place shimla
c. A hill place is shimla
d. Shimla is a place hill

Ans. b
Explanation:
The logic is:



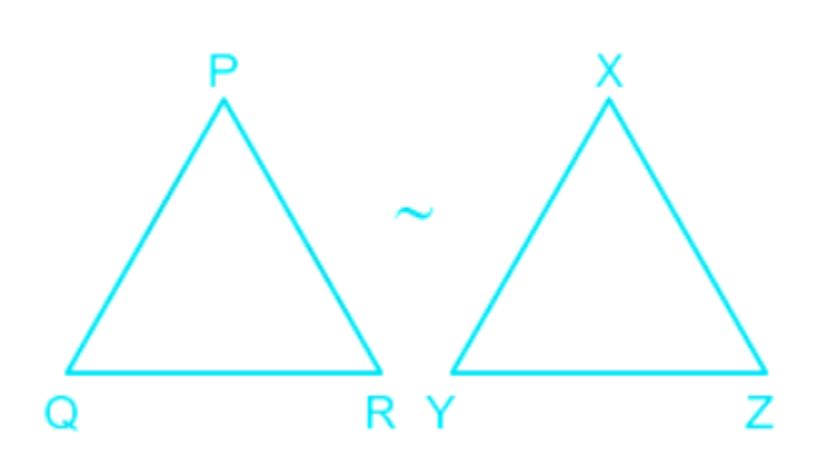
Similarly,

Hence, ‘ A hill is place shimla ’ is the correct answer.

45. The perimeters of two similar triangles. ΔPQR and ΔXYZ are 48 cm and 24 cm respectively. If XY = 12 cm, then PQ is:

a. 24 cm
b. 18 cm
c. 12 cm
d. 8 cm

Ans. a
Explanation:
Given:

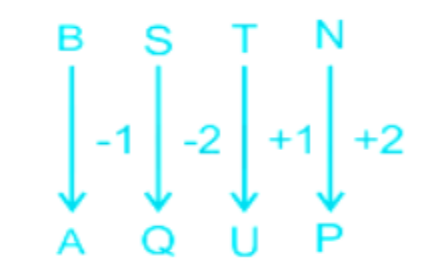


Perimeters of two similar triangles ΔPQR and ΔXYZ are 48 cm and 24 cm respectively.
XY = 12 cm
Concept:
When two triangles are similar to each other, the ratio of their corresponding sides is equal to the ratio of their respective other sides, medians, and perimeters.
⇒ Perimeter of ΔPQR/Perimeter of ΔXYZ = PQ/XY
Calculation:
48/24 = PQ/12
⇒ PQ/12 = 2
⇒ PQ = 24 m
∴ The length of side PQ = 24 cm

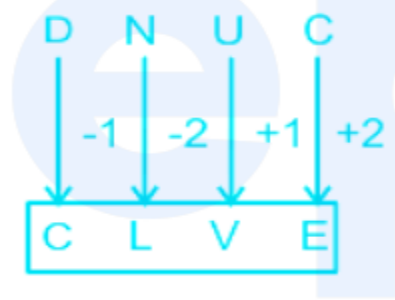
46. Select the option that is related to the third term in the same way as the second term is related to the first term.
BSTN : AQUP :: DNUC : ?
a. CLVE
b. BSTO

c. TOUS
d. TSTB

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



Similarly,



Hence, ‘ CLVE ’ is the correct answer.

47. Train A, running at the speed of 80 km/hr crossed train B, running at the speed of 70 km/hr in the opposite direction. Both trains finish crossing each other in 30 seconds. If the length of train A is 300 m, then the length of train B is:
a. 855 m
b. 950 m
c. 850 m
d. 750 m

Ans. b
Explanation:
Given:
Speed of train A = 80 km/h

Speed of train B = 70 km/h
Time taken in crossing = 30 seconds
Length of train A = 300 m
Formulas used:
Relative speed of trains (opposite direction) = S A + S B
Distance covered while crossing = Length (Train A + Train B)
Time = Distance/Relative Speed
Calculation:
Let the length of train B = b m
30 seconds = (300 + b)/(70 + 80) km/h
⇒ 30 seconds = (300 + b)/150 km/h
⇒ 30 secs × 150 km/h × 1000m/3600 secs = 300 + b
⇒ 1250 = 300 + b
⇒ b = 1250 - 300 = 950
∴ The length of train B = 950 m

48. The capacity of a cylindrical tank is 2376 m 3. If the radius of the tank is 21 m, then the depth of the tank is:
a. 1.71 m
b. 2.89 m
c. 5.75 m
d. 3.72 m

Ans. a
Explanation:

Given:
The capacity of a cylindrical tank = 2376 m 3
Radius = 21 m
Formula used:
Volume of cylinder = πr2h

Calculation:
πr 2h = 2376 m 3
⇒ 22/7 × 21 × 21 × h = 2376
h = 1.714
∴ The depth of the tank = 1.71 m

49. The first high court of India was established in _____.
a. Kolkata
b. Delhi
c. Mumbai
d. Punjab

Ans. a
Explanation:
The correct answer is Kolkata.
The first high court of India was established inKolkata.

50. When did the RTI Act come into effect?
a. December 2005
b. November 2006
c. September 2005
d. October 2005

Ans. d
Explanation:
The correct answer is October 2005.
The RTI Act came into force on12th October 2005.

51. Pradhan Mantri Swasthya Suraksha Yojana (PMSSY) was launched in the year _____.
a. 2006
b. 2004
c. 2003
d. 2005

Ans. c
Explanation:

The correct answer is 2003.
Pradhan Mantri Swasthya Suraksha Yojana (PMSSY) was launched in the year 2003.

52. When was Akbar became the emperor?
a. 1552 AD
b. 1550 AD
c. 1560 AD
d. 1556 AD

Ans. d
Explanation:
The correct answer is 1556 AD.
Akbar became the emperor of the Mughal dynasty in 1556 AD.

53. Who among the following is the youngest Nobel Laureate?
a. Lawrence Bragg
b. Nadia Murad
c. Malala Yousafzai
d. Tsung Dao Lee

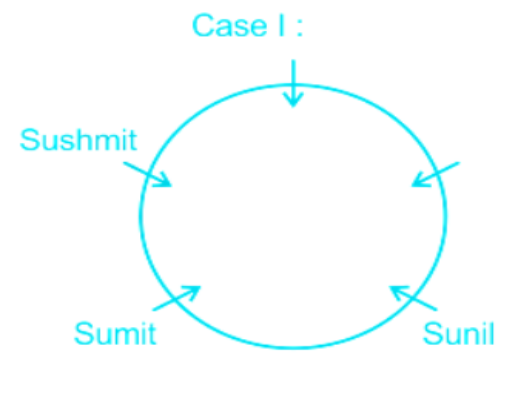
Ans. c
Explanation:
The correct answer is Malala Yousafzai.
Malala Yousafzai is a Pakistani activist for female education.
She is the youngest Nobel Prize laureate.

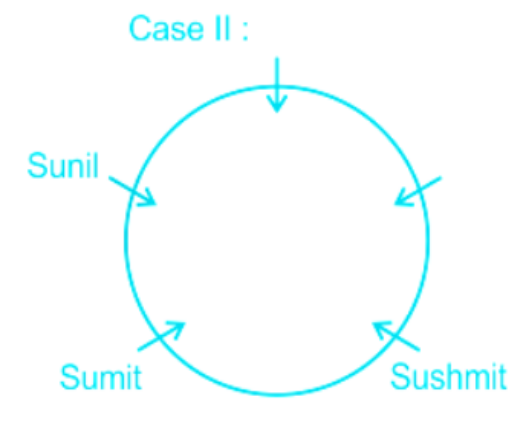
54. In which of the following does the river Godavari originate?
a. Yamnotri
b. Thriambak hills (Bramhagiri hills)
c. Hills of Coorg
d. Gangotri

Ans. b
Explanation:
The correct answer is Brahmagiri hills.
Godavari river rises from Maharashtra's Thriambak hill.

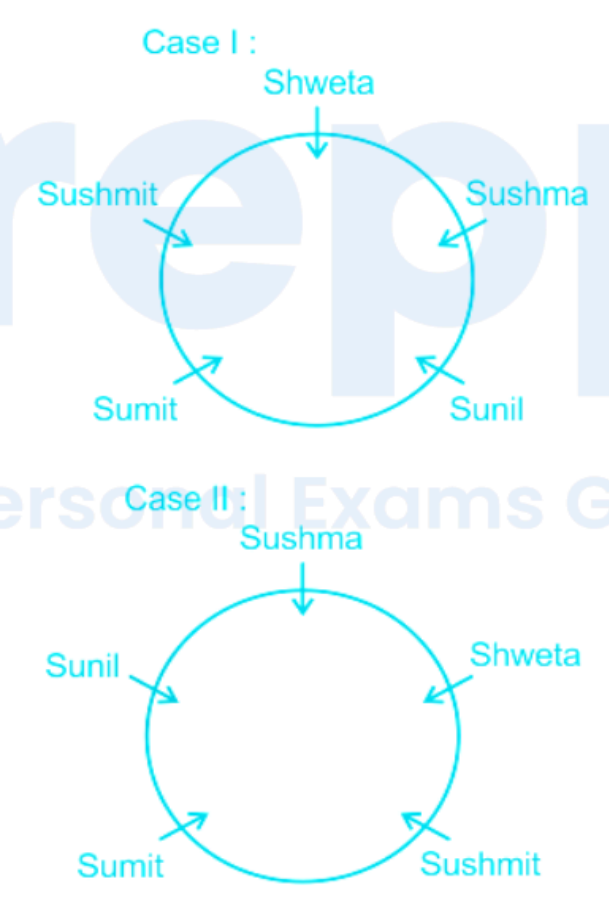
55. Five students are sitting in a circle facing the center. Sumit is between Sunil and Sushmit. Sushma is on the left side of Shweta, Sushmit and Sushma are not sitting next to each other. Who is sitting next to Sumit on his right side?
a. Sushma
b. Sushmit
c. Shweta
d. Sunil

Ans. d
Explanation:
Five students are sitting in a circle facing the center.
1. Sumit is between Sunil and Sushmit.

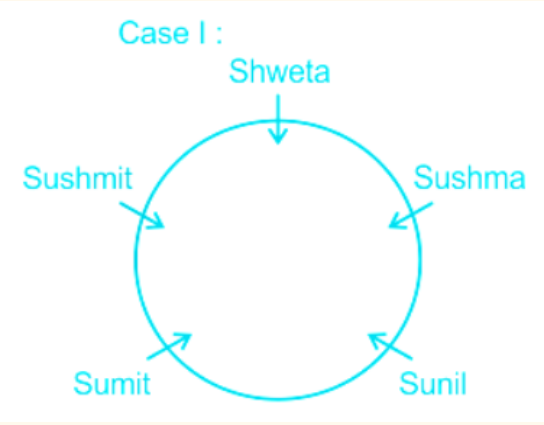




2. Sushma is on the left side of Shweta, Sushmit and Sushma are not sitting next to each other.



Here case II will be eliminated.
Final arrangement



Clearly, Sunil is sitting next to Sumit on his right side.
Hence, ‘ Sunil ’ is the correct answer.

56. The sum of two numbers is 25 and their difference is 15. The ratio of the numbers is:
a. 2 : 3
b. 4 : 1
c. 3 : 2
d. 5 : 3

Ans. b
Explanation:
Given:
Sum of two numbers = 25
Difference of two numbers = 15
Calculation:
Let the two no be = a & b
a + b = 25
a - b = 15
(1) + (2)
⇒ 2a = 40
⇒ a = 20
By putting the value of a in equation (1)
⇒ b = 5
∴ a : b = 20 : 5 = 4 : 1

57. How many world heritage sites have been protected by UNESCO as of June 2020?
a. 1121
b. 1256
c. 1056
d. 1273

Ans. a
Explanation:
The correct answer is 1121.
As of June 2020, there are 1121 world heritage sites that have been protected by UNESCO.

58. Select the combination of letters that when sequentially placed in the

blanks will create a repetitive pattern.
a_bc_a_bcda_ccd_bcd_
a. a, a, b, c, c, d
b. a, c, b, d, b, d
c. a, d, b, b, a, d
d. a, d, b, b, d, d

Ans. c
Explanation:
Given :- a_bc_a_bcda_ccd_bcd_
By checking options and substituting accordingly.
1. a, a, b, c, c, d → a a b c a- a b b c d - a c c c d - c b c d d
2. a, c, b, d, b, d → a a b c c- a b b c d - a d c c d - b b c d d
3. a, d, b, b, a, d → a a b c d- a b b c d - a b c c d - a b c d d
4. a, d, b, b, d, d → a a b c d- a b b c d - a b c c d - d b c d d
Option (3) gives a cyclic pattern of aa bcd - a bb cd - ab cc d - abc dd .
Hence, ‘ a, d, b, b, a, d ’ is the correct answer.

59. If $x + \frac{1}{x} = 9$, then the value of $x^2 + \frac{1}{x^2}$ is:

a. 83
b. 81
c. 79
d. 81.01

Ans. c
Explanation:
Given:
$x + \frac{1}{x} = 9$
Formula used:
(a + b)2 = a2 + b2 + 2ab
Calculation:
$x + \frac{1}{x} = 9$
By squaring both sides;
⇒ x
2 + 1/x
2 + 2 × x × 1/x = 81

⇒ x 2 + 1/x 2 = 81 - 2 = 79
∴ The required result = 79

60. Consider the given statement and decide which of the given assumptions is/are implicit in the statement.
Statement:
A wealthy person has a higher chance of having diabetes.
Assumptions:
I. Most of causes of death among wealthy persons are due to diabetes.
II. Poor persons do not have diabetes.
a. Only assumptions (II) is implicit.
b. Both, assumptions (I) and (II) are implicit
c. Neither assumption (I) nor (II) is implicit.
d. Only assumptions (I) is implicit.

Ans. c
Explanation:
Assumptions:
I. Most of causes of death among wealthy persons are due to diabetes. → The assumption is not implicit in the statement.
The statement only suggests that a wealthy person has a higher chance of having diabetes but it does not implies that most of causes of death among wealthy persons are due to diabetes.
II. Poor persons do not have diabetes. → The assumption is not implicit in the statement.
The statement mentions nothing about poor people.
Hence, neither assumption (I) nor (II) is implicit .

61. Select the number from among the given options that can replace the question mark (?) in the following series.
64, 60, 52, 40, ?, 4
a. 20
b. 24
c. 10
d. 16

Ans. b

Explanation:
The logic followed here is:

Hence, the correct answer is "24".

62. The value of $\frac{(0.27)^2-(0.13)^2}{0.27+0.13}$ is:

a. 0.40
b. 0.03
c. 0.14
d. 1.40

Ans. c
Explanation:
Given:
$\frac{(0.27)^2-(0.13)^2}{0.27+0.13}$
Formula used:
(a + b)(a - b) = a2 - b2
Calculation:
$\frac{(0.27)^2-(0.13)^2}{0.27+0.13}$
⇒ (0.27 + 0.13)(0.27 - 0.13)/(0.27 + 0.13)
⇒ (0.27 - 0.13)
⇒ 0.14
∴ The required result = 0.14

63. How many environmental activists got the Goldman Environmental Prize 2019?

a. 5
b. 4
c. 6
d. 3

Ans. c
Explanation:
The correct answer is 6.
Six environmental activists received the prestigious Goldman Environmental Prize 2019.

64. In which state is the Gandhi Sagar Dam constructed?
a. Maharashtra
b. Himachal Pradesh
c. Rajasthan
d. Madhya Pradesh

Ans. d
Explanation:
The correct answer is Madhya Pradesh.
The Gandhi Sagar Dam is a dam located in the Mandsaur districts of Madhya Pradesh.

65. When was revolt of 1857 finally supressed by British?
a. 1859
b. 1861
c. 1860
d. 1857

Ans. a
Explanation:
The correct answer is 1859.
The revolt of 1857 was suppressed by the British in 1859.

66. If tan θ + cot θ = 5, then the value of tan^2 θ + cot^2θ + 2 tan^2 60° is:
a. 29 √3
b. 29
c. 25
d. 10 √3

Ans. b
Explanation:

Given:
tan θ + cot θ = 5
Formula used:
(a + b)2 = a2 + b2 + 2ab
Calculation:
tan θ + cot θ = 5
Squaring both sides
⇒ tan^2θ + cot^2θ + 2 tan θ cot θ = 25
⇒ tan^2θ + cot^2θ = 25 - 2
⇒ tan^2θ +cot^2θ = 23
tan^2 θ + cot^2 θ + 2 tan^2 60°
⇒ 23 + 2 × (√3)2
⇒ 23 + 2 × 3
⇒ 29

67. A class has 48 students, on a specific day, only $\frac{3}{8}$ of the students were present;the number of absentees on the same day would be:
a. 18
b. 28
c. 38
d. 30

Ans. d
Explanation:
Given:
No of students in a class = 48
Fraction of students present = 3/8
Calculation:
Fraction of students absent = 1 - 3/8 = 5/8
∴ No of absentees on the same day = 48 × 5/8
⇒ 30

68. The value of 15 × 14 - 30 + (3^2+ 17) is:
a. 206
b. 124

c. 154
d. 266

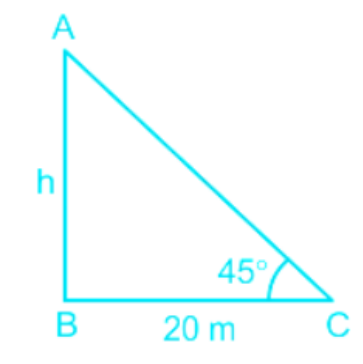
Ans. a
Explanation:
Given:
15 × 14 - 30 + (3 2 + 17)
Calculation:
⇒ 15 × 14 - 30 + (3 2 + 17)
⇒ 210 - 30 + (9 + 17)
⇒ 210 - 30 + 26
⇒ 206
∴ The required result = 206

69. URL stands for:
a. Uniform Resource Locator
b. Uniform Remote Locator
c. Universal Remote Land
d. Universal Resource Locator

Ans. a
Explanation:
The correct answer is Uniform Resource Locator.
Uniform Resource Locator is an address used to identify the name of a web resource.

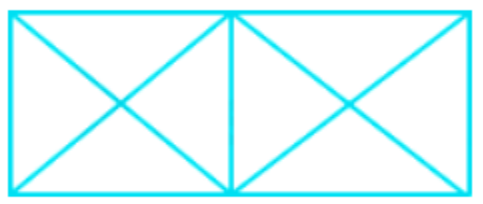
70. The angle of elevation of a pole from a point, which is 20 m away from the foot of the pole is 45°. Find the height of the pole.
a. 20 m
b. 20√2 m
c. 15 m
d. 10 m

Ans. a
Explanation:



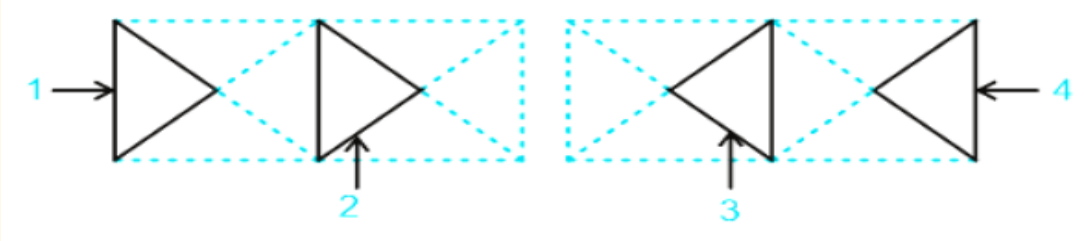
Given:
Angle of elevation = 45°
Distance of the bottom of the pole from a point = 20m
Calculation:
In triangle ABC, AB/BC = tan45°
⇒ h/20 = 1
∴ The height of the pole = h = 20 m

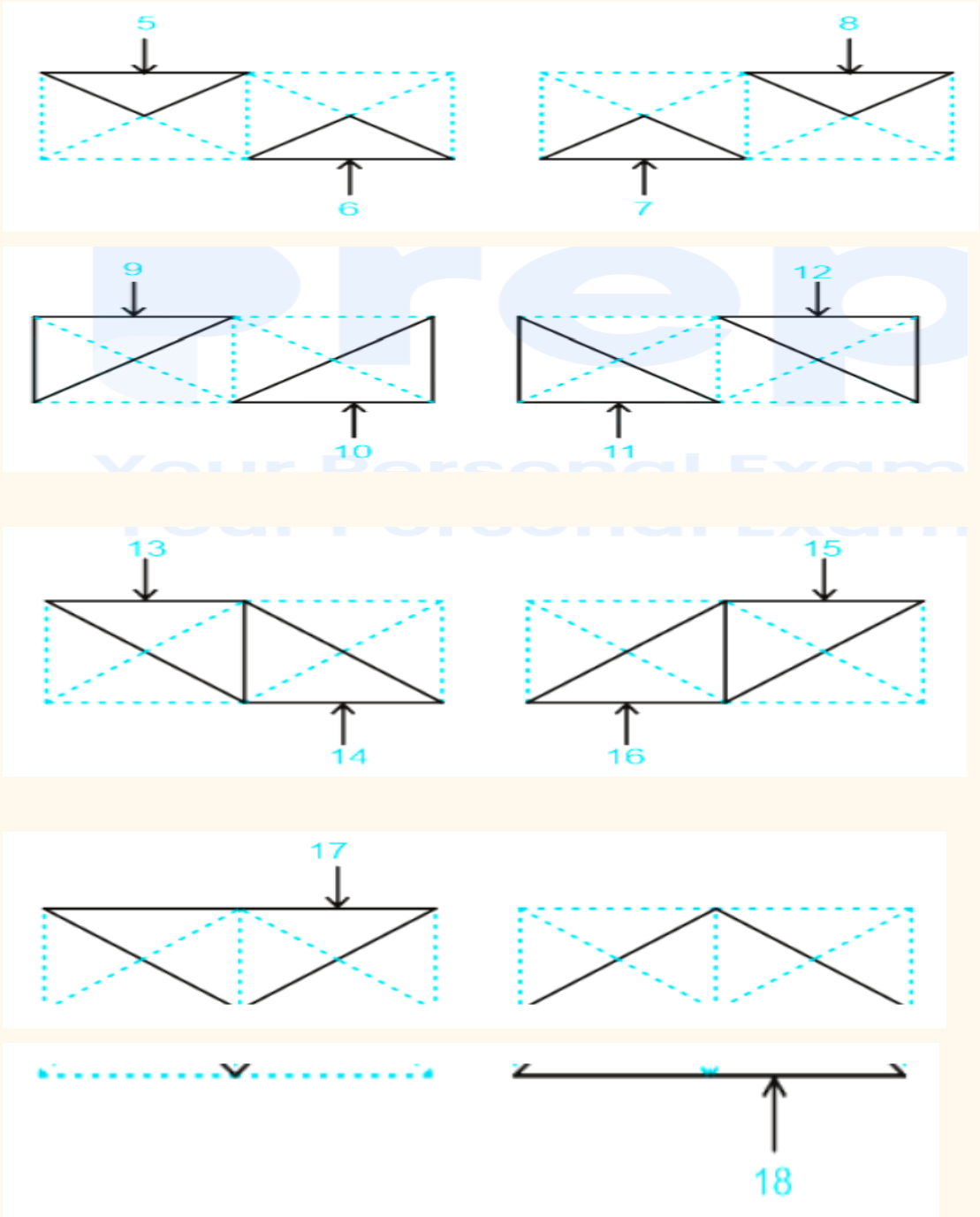
71. How many triangles are there in the following figures?



a. 20
b. 18
c. 22
d. 16

Ans. b
Explanation:
the total number of triangles in the figure is shown below:





Hence, ‘ 18 ’ is the correct answer.

72. On which river is the Sardar Sarovar Dam constructed?
a. Ganga
b. Brahmaputra

c. Yamuna
d. Narmada

Ans. d
Explanation:
The correct answer is Narmada.
The Sardar Sarovar Dam is a concrete gravity dam located at Narmada District in Gujarat.

73. The marks obtained by 7 students in a class in mathematics are 43, 44, 65, 41, 53, 65 and 62. The mode of the data is:
a. 53
b. 65
c. 41
d. 62

Ans. b
Explanation:
Given:
Marks of 7 students in Mathematics are 41, 43, 44, 53, 62, 65, 65
Concept:
The mode is the value occurring most frequently in a series of items.
Calculation:
Here, in the given data 65 has occurred twice and rest of the items occurred only once.
∴ The mode of the data is 65.

74. 15 male employees or 20 female employees of a company can complete a project in 26 days. How long will 30 male employees and 12 female employees together take to complete the project?
a. 14 days
b. 10 days
c. 12 days
d. 8 days

Ans. b
Explanation:

Given:
15 males or 20 females can complete a project in 26 days.
Formula used:
(M1 × D1)/W1 = (M2 × D2)/W2
Calculation:
15 males × 26 days = 20 females × 26 days
∵ 15 males = 20 females
∴ 30 males = 40 females
Total work in terms of females = 20 females × 26 days = 520 units
No of days taken by 30 males and 12 females:
⇒ (40 females + 12 females) = 52 females
∴ No of days taken = 520 units /52 females = 10

75. The sum of two numbers is 16 and their product is 63. The sum of their reciprocal is equal to:

a. $\frac{63}{16}$

b. $\frac{8}{63}$

c. $\frac{60}{63}$

d. $\frac{16}{63}$

Ans. d
Explanation:
Given:
Sum of two numbers = 16
Product of two numbers = 63
Calculation:
Let the numbers be = a, b
a + b = 16
ab = 63
∴ Sum of the reciprocal of a and b = 1/a + 1/b
⇒ (b + a)/ab
⇒ 16/63

76. _____ is the largest bauxite producing state of India.
a. Odisha

b. Jharkhand
c. Andhra Pradesh
d. Gujarat

Ans. a
Explanation:
The correct answer is Odisha.
Odisha is the largest bauxite-producing state in India.

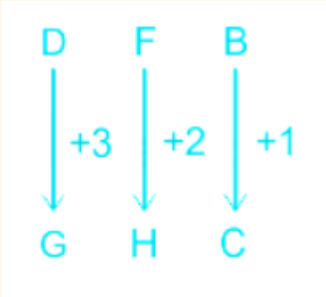
77. Aman is older than Sahu, Sahu is younger than Komal but older than Millan. Komal is older than Aman but younger than Uday. Who is the third oldest among them?
a. Komal
b. Aman
c. Sahu
d. Uday

Ans. b
Explanation:
1. Aman is older than Sahu.
Aman > Sahu
2. Sahu is younger than Komal but older than Millan.
Komal > Sahu > Millan
3. Komal is older than Aman but younger than Uday.
Uday > Komal > Aman
Combining all the three statements, we get:
Uday > Komal > Aman > Sahu > Millan
Clearly, Aman is the third oldest among them.
Hence, ‘ Aman ’ is the correct answer.

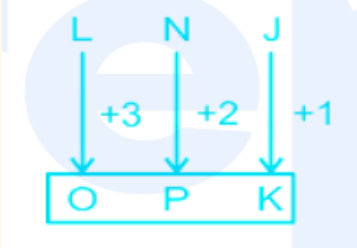
78. Select the option that is related to the third term in the same way as the second term is related to the first term.
DFB : GHC :: LNJ : ?
a. LOJ
b. OQM
c. OPK

d. EGC

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



Similarly,

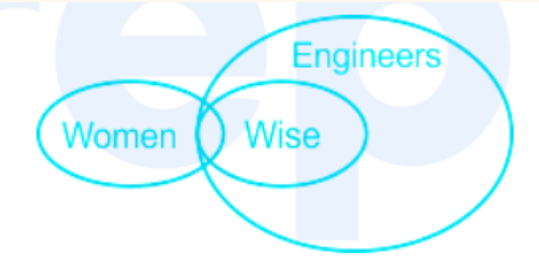


Hence, ‘ OPK ’ is the correct answer.

79. Read the given statements and conclusions carefully and decide which of the conclusions logically follow(s) from the statements.
Statements:
Some women are wise.
All wise are engineers.
Conclusions:
I. Some women are engineers.
II. All engineers are wise.
a. Neither conclusion I nor conclusion II follows.
b. Both, conclusion (I) and (II) follow.
c. Only conclusion (II) follows.
d. Only conclusion (I) follows.

Ans. d

Explanation:
The least possible Venn diagram is:



Conclusions:
I. Some women are engineers. → True (As, Some women are wise and All wise are engineers → some women are engineers)
II. All engineers are wise. → False (As, All wise are engineers → some engineers are wise)
Hence, only conclusion (I) follows .

80. If '+' denotes 'multiplication', '-', denotes 'addition', '×', denotes 'division' and '÷' denotes 'subtraction', then which of the following equation is true?
a. 9 + 5 - 16 × 4 ÷ 2 = 41
b. 15 + 15 × 3 - 4 ÷ 5 = 26
c. 10 - 12 ÷ 18 × 6 + 2 = 16
d. 11 ÷ 8 × 2 - 4 + 1 = 41

Ans. c
Explanation:
1. 9 + 5 - 16 × 4 ÷ 2 = 41
After replacing the symbols by their meaning, we get:
L.H.S = 9 × 5 + 16 ÷ 4 – 2
= 45 + 4 – 2
= 49 – 2
= 47 ≠ 41
2. 15 + 15 × 3 - 4 ÷ 5 = 26
After replacing the symbols by their meaning, we get:
L.H.S = 15 × 15 ÷ 3 + 4 – 5
= 75 + 4 – 5
= 79 – 5

= 74 ≠ 26
3. 10 - 12 ÷ 18 × 6 + 2 = 16
After replacing the symbols by their meaning, we get:
L.H.S = 10 + 12 - 18 ÷ 6 × 2
= 10 + 12 – 3 × 2
= 10 + 12 – 6
= 22 – 6
⇒ 16 = 16
4. 11 ÷ 8 × 2 - 4 + 1 = 41
After replacing the symbols by their meaning, we get:
L.H.S = 11 - 8 ÷ 2 + 4 × 1
= 11 – 4 + 4
= 11 ≠ 41
Hence, ' 10 - 12 ÷ 18 × 6 + 2 = 16 ' is the correct answer.

81. 27% of 250 - 0.02% of 1000 is equal to:
a. 65.52
b. 52.56
c. 67.30
d. 76.30

Ans. c
Explanation:
Given:
27% of 250 - 0.02% of 1000
Calculation:
27% of 250 - 0.02% of 1000
⇒ 27/100 × 250 - 2/10000 × 1000
⇒ 6750/100 - 2/10
⇒ 67.5 - 0.2
⇒ 67.3
∴ The required result = 67.3

82. A bank provides a loan at the rate of 5% per annum to a trader on an amount of Rs.12,50,000 for 5 years. The simple interest to be paid is:
a. Rs.2,25,400
b. Rs.3,12,500

c. Rs.2,40,600
d. Rs.4,20,250

Ans. b
Explanation:
Given:
Principal = Rs.12,50,000
Rate = 5% per annum
Time = 5 years
Formula used:
Simple Interest = Principal × Rate/100 × Time
Calculation:
Simple Interest = 12,50,000 × 5/100 × 5 = 312500
∴ The simple interest is Rs.312500

83. The cause of Hepatitis A is a:
a. mosquito bite
b. bacteria
c. Virus
d. protozoa

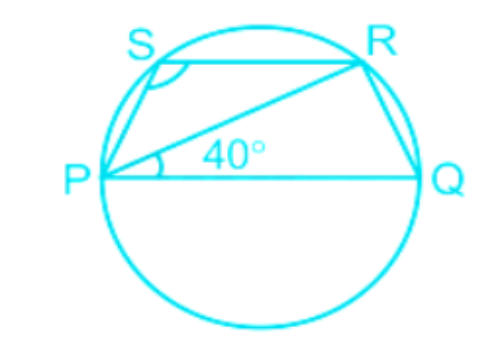
Ans. c
Explanation:
The correct answer is Virus.
Hepatitis A is a disease caused by the virus.

84. Which organ in the human body produces bile juice?
a. Small intestine
b. Pancreas
c. Liver
d. Stomach

Ans. c
Explanation:
The correct answer is Liver.
The liver secretes bile juice, which is a digesting juice.

85. PQRS is a cyclic trapezium where PQ is parallel to RS and PQ is the diameter. If ∠QPR = 40° then the ∠PSR is equal to:
a. 130°
b. 120°
c. 140°
d. 110°

Ans. a
Explanation:

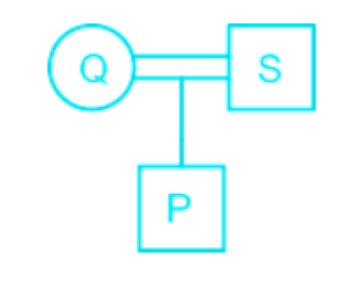


Given:
PQRS is a cyclic trapezium where PQ is parallel to RS.
PQ is the diameter & ∠QPR = 40°
Concept:
Angle made in a semicircle is a right angle.
The sum of the opposite angles of a cyclic trapezium is 180°.
Calculation:
In triangle PQR,
∠RPQ + ∠RQP + ∠QRP = 180° [Angle sum property]
⇒ 40° + ∠RQP + 90° = 180°
⇒ ∠RQP = 180° - 130° = 50°
∠RQP + ∠PSR = 180° [Supplementary Angles]
∴ ∠PSR = 180° - 50° = 130°

86. If 'A + B' means 'A is daughter of B', 'A - B' means 'A is wife of B', 'A × B' means 'A is the son of B', If P × Q - S then which of the following is true?
a. Q is the father of P
b. P is a daughter of Q
c. S is the father of P

d. S is the wife Q

Ans. c
Explanation:
P × Q - S → P is son of Q and Q is wife of S

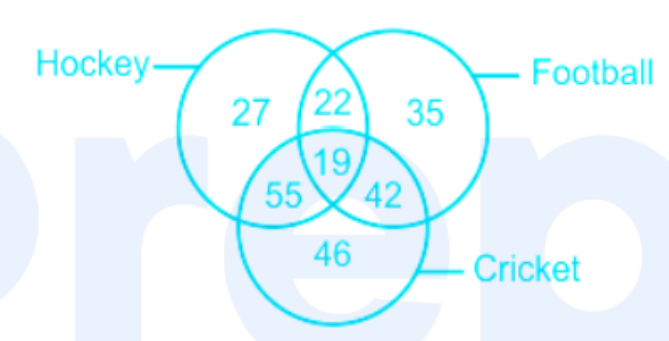


Clearly, S is the father of P.
Hence, ‘ S is the father of P ’ is the correct answer.

87. Read the given statements and conclusions carefully and decide which of the conclusions logically follow(s) from the statements.
Statements:
Regularity is a cause for a success in exams.
Some irregular students pass in the examinations.
Conclusions:
I. All irregular students pass in exams.
II. Some irregular students fail in the exam.
a. Only conclusion (II) follows.
b. Only conclusion (I) follows.
c. Both, conclusion (I) and conclusion (II) follow.
d. Neither conclusion I nor conclusion II follows.

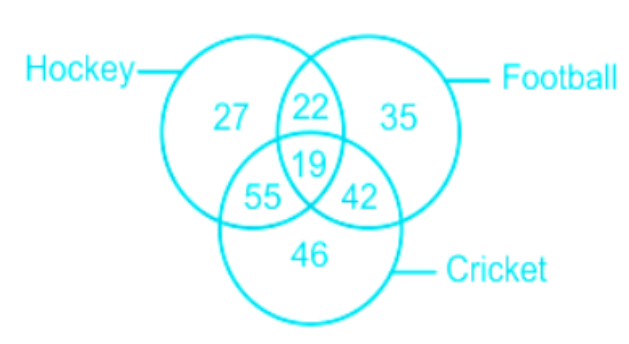
Ans. a
Explanation:
Conclusions:
I. All irregular students pass in exams. → The conclusion does not follows. (As Some irregular students pass in the examinations)
II. Some irregular students fail in the exam. → The conclusion does follows. (As Some irregular students pass in the examinations → Some irregular students fail in the exam)
Hence, only conclusion (II) follows .

88. In the given figure, how many hockey players are playing football?



a. 55
b. 35
c. 41
d. 22

Ans. c
Explanation:
Hockey players who play football is shown below:



Number of hockey players who play football = 22 + 19 = 41
Hence, ‘ 41 ’ is the correct answer.

89. Select the number that is different from the rest.
a. 72563
b. 52637
c. 56372
d. 63754

Ans. d

Explanation:
The logic is:
Sum of digits of given numbers = 23
1. 72563 → 7 + 2 + 5 + 6 + 3 = 23
2. 52637 → 5 + 2 + 6 + 3 + 7 = 23
3. 56372 → 5 + 6 + 3 + 7 + 2 = 23
4. 63754 → 6 + 3 + 7 + 5 + 4 = 25 ≠ 23
Hence, ‘ 63754 ’ is the odd one out.

90. A, B, C, D, and E are sitting in a line. C is sitting at the west end and E is the neighbour of B and C. Between A and C there are two persons. Who is sitting at the east end?
a. B
b. D
c. A
d. C

Ans. b
Explanation:
Persons - A, B, C, D, and E are sitting in a line.
1. C is sitting at the west end and E is the neighbour of B and C.
2. Between A and C there are two persons

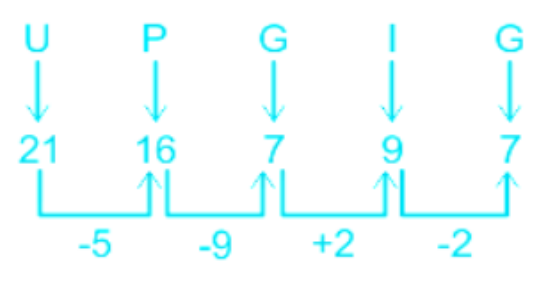
Clearly, D is sitting at the east end.
Hence, ‘ D’ is the correct answer.

91. If in a certain code, INTERNET is written as TENRETNI, then in the same code, REMEMBER would be written as:
a. REWOLFES
b. MEMBARAI
c. SATATAION
d. REBMEMER

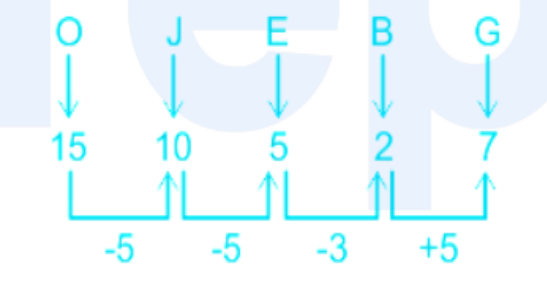
Ans. d
Explanation:
The logic is:
Letters are written from right end to left end.
INTERNET → TENRETNI
Similarly,
REMEMBER → REBMEMER
Hence, ‘ REBMEMER ’ is the correct answer.

92. In one of the following letter-clusters, the number of letters skipped in between the adjacent letters is in a decreasing sequence. Identify the letter-cluster.
a. UPGIG
b. OJEBG
c. UNSOB
d. VQMJH

Ans. d
Explanation:
The pattern followed here is:
Option 1) UPGIG - False

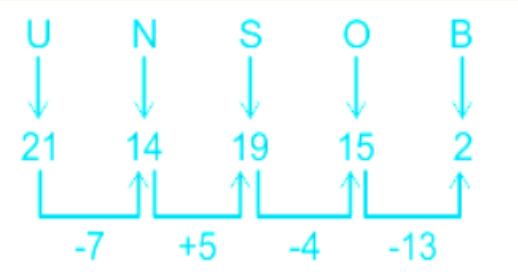


(The difference between in letters are not in decreasing sequence).
Option 2) OJEBG - False

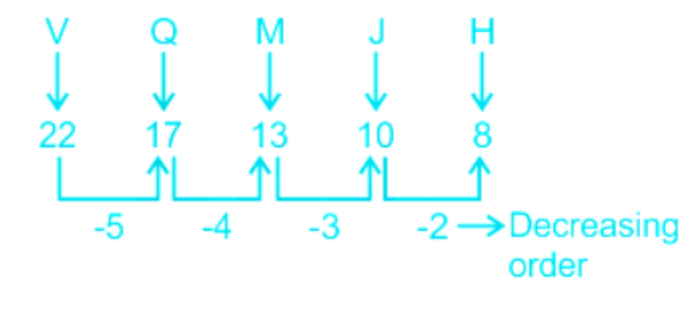


(The difference between in letters are not in decreasing sequence).

Option 3) UNSOB - False



(The difference between in letters are not in decreasing sequence).
Option 4) VQMJH - True, it follows the Decreasing sequence.



Hence, ‘ VQMJH ’ is the correct answer.

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

20	16	33
22	?	15
27	19	23

a. 32
b. 34
c. 36
d. 42

Ans. a
Explanation:

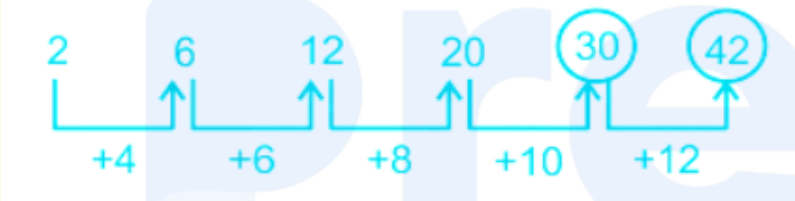
The logic is:
1st row: 20 + 16 + 33 = 69
3rd row: 27 + 19 + 23 = 69
Similarly,
Let the missing number be 'a'.
22 + a + 15 = 69
⇒ a = 69 - 37
⇒ a = 32
Hence, ‘ 32 ’ is the correct answer.

94. Select the option that is related to the third number in the same way as the second number is related to the first number.
25 : 16 :: 41 : ?
a. 32
b. 31
c. 30
d. 51

Ans. a
Explanation:
The logic is:
25 : 16 → 25 - 9 = 16
Similarly,
41 : ? → 41 - 9 = 32
Hence, ‘ 32 ’ is the correct answer.

95. Select the number from among the given options that can replace the question mark (?) in the following series.
2, 6, 12, 20, ?, ?
a. 30, 42
b. 27, 36
c. 25, 30
d. 32, 48

Ans. a
Explanation:
The logic is:



Hence, ‘ 30, 42 ’ is the correct answer.

96. Select the number from among the given options that can replace the question mark (?) in the following series.
8, 27, 64, 125, 216, ?
a. 353
b. 337
c. 343
d. 341

Ans. c
Explanation:
The logic is:
$2^3 = 8$
$3^3 = 27$
$4^3 = 64$
$5^3 = 125$
$6^3 = 216$
$7^3 = 343$
Hence, ‘ 343 ’ is the correct answer.

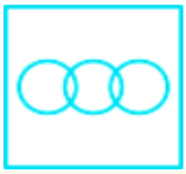
97. Pick the odd one out.
a. LEOPARD
b. COW
c. DEER
d. TIGER

Ans. b
Explanation:
The description is as follows:

Option	Description
1. LEOPARD	Leopard is a wild animal.
2. COW	Cow is a domestic animal.
3. DEER	Deer is a wild animal.
4. TIGER	Tiger is a wild animal.

Hence, ‘ COW ’ is the odd one out.

98. Which of the following diagrams best represents the relationship between Man, Father and Brother?

a. 

b. 

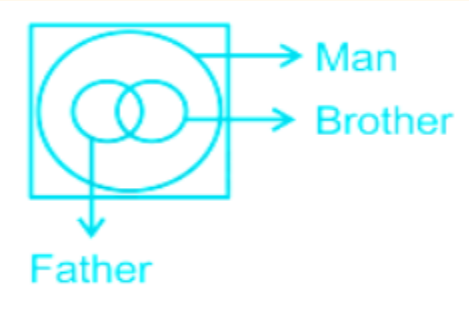
c. 

d. 

Ans. b

Explanation:

The diagram that best represents the relationship between Man, Father and Brother is shown below:



Some Father are Brother. All Father and Brother are Man.
Hence, ‘ option 2 ’ is the correct answer.

99. Select the option in which the words share the same relationship as that shared by the given pair of words.
Cat : Mew :: ? : ?
a. Duck : Quack
b. Jackal : Hoot
c. Bull : Crow
d. Owl : Hiss

Ans. a
Explanation:
The logic is:
Cat : Mew → The sound made by cat is mew.
Similarly,
Duck : Quack → The sound made by duck is quack.
Hence, ‘ Duck : Quack ’ is the correct answer.

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

90	80	120
5	4	6
7	6	10
25	?	30

a. 23
b. 55
c. 26
d. 25

Ans. c
Explanation:
The logic followed here is:
In a column: 1st number ÷2nd number + 3rd number = 4th number
Column 1:
90 ÷ 5 + 7
18 + 7
= 25
Column 2:
120 ÷ 6 + 10
20 + 10
= 30
Similarly,
Column 3:
80 ÷ 4 + 6
20 + 6
= 26
Hence, the correct answer is "26".