RRB NTPC 7 Jan 2021 Shift 1 Solution

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1. Who is known as the Father of India's Space Programme?
a. Vikram Seth
b. Anuj Lall
c. Vikram Sarabhai
d. Aditya Sarabhai

Ans. c
Explanation:
The correct answer is Vikram Ambalal Sarabhai.
Vikram Ambalal Sarabhai was considered the Father of the Indian space program .

2. During which five year plan did India opt for a mixed economy?
a. Fourth Five Year Plan
b. Second Five Year Plan
c. Third Five Year Plan
d. First Five Year Plan

Ans. b
Explanation:
The correct answer is the Second Five Year Plan.
The Indian Government adopted a mixed economy during the second five-year plan. Hence, Option 2 is correct.

3. Consider the given statement and decide which of the given assumptions is/are implicit in the statement.
Statement:
The electricity board has started going from home to home to collect bills.
Assumptions:
A. Electricity board considers going home to home an effective way to collect bills.
B. The electricity board has increased its focus on collecting bills.

a. Both A and B are implicit
b. Neither A nor B is implicit
c. Only assumption A is implicit
d. Only assumption B is implicit

Ans. a
Explanation:
The logic followed is:
As the statements talk about the electricity board has started going from home to home to collect bills.
Assumption I is implicit because electricity board has started going from home to home to collect bills since people have to face many problems.
B. The electricity board has increased its focus on collecting bills.
From the statement, we can assume that if non - renewable sources of energy go exhausted, the next generation will not be able to use them and will have to think of alternatives as non - renewable energy will extinct if we are not saving it.
Therefore, Assumption II is implicit.
Hence, Both A and B are implicit

4. Choose the conclusion(s) which logically follow from the given statements.
Statements:
MS Dhoni is a popular cricketer.
All cricketers are fit and healthy.
MS Dhoni earns a handsome amount every year through advertisements of various products.
Conclusions:
A. All popular cricketers earn a handsome amount through advertisement.
B. MS Dhoni is fit and healthy.
C. MS Dhoni, being famous, advertises only famous products.

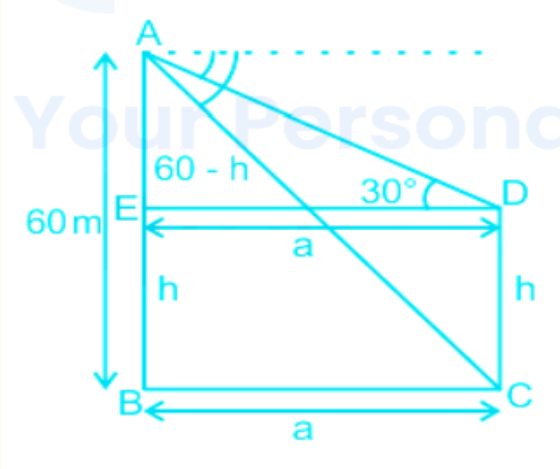
a. Only conclusion C follows
b. Conclusions A and B follow
c. Conclusions A and C follow
d. Only conclusion B follows

Ans. d
Explanation:

A. All popular cricketers earn a handsome amount through advertisement.
Conclusion A does not follows. From the statement, we know that MS Dhoni is a popular cricketer who earns a handsome amount, but it does not gives information of all popular cricketers earn a handsome amount through advertisement.
B. MS Dhoni is fit and healthy.
Conclusion B follows. As, MS Dhoni is a popular cricketer and All cricketers are fit and healthy, which clearly implies MS Dhoni is a cricketer and being a cricketer, he is fit and healthy.
C. MS Dhoni, being famous, advertises only famous products.
Conclusion C does not follows. The statements does not gives information if MS Dhoni advertises only famous products or not.
Hence, only conclusion B follows .

5. From the top of a building, 60 m high, the angles of depression of the top and the bottom of a tower are 30° and 60° respectively. The height of the tower is:
a. 18 m
b. 42 m
c. 40 m
d. 30 m

Ans. c
Explanation:
Given:
Height of the building = 60 m
Calculation:



Let the height of the tower be = h
BC = ED = a, AE = 60 - h
In triangle AED, AE/ED = tan 30°
⇒ (60 - h)/a = 1/√3
⇒ a = 60√3 - √3h (1)
In triangle ABC, AB/BC = tan 60°
⇒ 60/a = √3
⇒ 60/(60√3 - √3h) = √3 ∵ [a = 60√3 - √3h]
⇒ (60√3 - √3h) × √3 = 60
⇒ 60 × 3 - 3h = 60
⇒ 180 - 60 = 3h
⇒ 3h = 120
⇒ h = 40 m
∴ The height of the tower = 40 m

6. If x : y = 3 : 4, (4x + 3y) : (4y - 4x) = ?
a. 1 : 6
b. 2 : 3
c. 3 : 2
d. 6 : 1

Ans. d
Explanation:
Given:
x : y = 3 : 4
Calculation:
Let x/y = 3k/4k (where k is a constant)
⇒ x = 3k, y = 4k
(4x + 3y) : (4y - 4x) = (4 × 3k + 3 × 4k) : 4(4k - 3k)
⇒ 24k : 4k
⇒ 6 : 1
∴ (4x + 3y) : (4y - 4x) = 6 : 1

7. Who founded India's three stage Nuclear Power Programme ?
a. K Kasturirangan
b. Vikram Sarabhai
c. Dr. Homi Bhabha

d. APJ Abdul Kalam

Ans. c
Explanation:
The correct answer is Dr. Homi Bhabha.
India's Three-Stage Nuclear Power Programme:
India's three-stage nuclear power program was formulated by Homi Bhabha in the 1950s to secure the country's long-term energy independence, through the use of uranium and thorium reserves found in the monazite sands of coastal regions of South India. Hence, Option 3 is correct.

8. When is National Panchayati Raj Day observed in India?
a. 24th April
b. 3rd May
c. 10th April
d. 4th June

Ans. a
Explanation:
The correct answer is 24 th April.
The first National Panchayati Raj Day was celebrated in 2010.
Since then, the National Panchayati Raj Day is celebrated on 24th April every year in India. Hence, Option 1 is correct.

9. Simplify the following.
$2.2 \times 0.2 \div (0.4 \times \frac{1}{2}) - \frac{1}{2} \times 4(1.04 - 0.2 \times 0.2)$
a. 0.5
b. 0.2
c. 0.3
d. 0.6

Ans. b
Explanation:
Follow BODMAS rule
Calculation:

$2.2 \times 0.2 \div (0.4 \times \frac{1}{2}) - \frac{1}{2} \times 4(1.04 - 0.2 \times 0.2)$

$\Rightarrow 2.2 \times 0.2 \div (4/10 \times 1/2) - 1/2 \times 4(1.04 - 0.04)$

$\Rightarrow 2.2 \times 0.2 \div (4/10 \times 1/2) - 1/2 \times 4 \times 1$

$\Rightarrow 2.2 \times 0.2 \div (4/10 \times 1/2) - 2$

$\Rightarrow 2.2 \times 0.2 \div (1/5) - 2$

$\Rightarrow 2.2 \times 0.2 \times 5 - 2$

$\Rightarrow 2.2 \times 1 - 2$

$\Rightarrow 0.2$

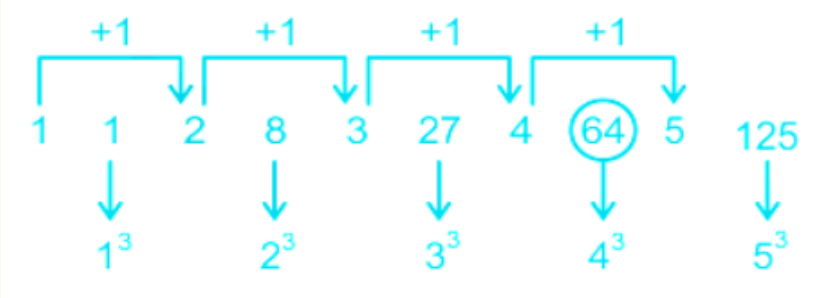
$\therefore 2.2 \times 0.2 \div (0.4 \times \frac{1}{2}) - \frac{1}{2} \times 4(1.04 - 0.2 \times 0.2) = 0.2$

10. When is World Book and Copyright Day celebrated?
a. 23rd April
b. 13th May
c. 19th January
d. 27th April

Ans. a
Explanation:
The correct answer is 23rd April.
World Book and Copyright Day
It is organized every year on April 23rd by the United Nations Educational, Scientific and Cultural Organization (UNESCO) to promote, highlight and expand the power of reading, books, and copyright. Hence, Option 1 is correct.

11. Which number from among the given options will come in place of (*) in the given number series ?
1, 1, 2, 8, 3, 27, 4, (*), 5, 125....
a. 64
b. 32
c. 36
d. 96

Ans. a
Explanation:
The logic is:



Hence, ‘ 64 ’ is the correct answer.

12. When 5 men can build a wall in 12 days, to build a wall 50% more than the original wall in 10 days, the number of men required is:
a. 7
b. 4
c. 9
d. 8

Ans. c
Explanation:
Given:
Time taken by 5 men to build a wall = 12 days
Formula used:
(M 1 × D 1)/W 1 = (M 2 × D 2
)/ W 2
Calculation:
Let the work size of the wall = 100
⇒ The size of the wall 50% more than the original wall = 100 × 150/100 = 150
Let the men required to build the 50% more than the original wall = a
(5 × 12)/100 = (a × 10)/150
⇒ 60/100 = 10a/150
⇒ 3/5 = a/15
⇒ 3/1 = a/3
⇒ a = 9
∴ The required no of men = 9

13. Where was the 11th World Hindi Conference held in 2018?
a. Mauritius

b. Mumbai
c. Chandigarh
d. Kolkatta

Ans. a
Explanation:
The correct answer is Mauritius.
The 11th World Hindi Conference, an event aimed at expanding the reach of the Hindi language at a global level, begin in Mauritius on 18 August 2018.
Hence, Option 1 is correct.

14. What was the main reason for calling off the Non-Cooperation Movement by Gandhiji in 1922?
a. A police station at Chauri Chaura in Uttar Pradesh was set on fire by a mob
b. Gandhiji was seriously ill
c. The movement was completed by achieving the target
d. Gandhiji was arrested and compelled to stop the movement

Ans. a
Explanation:
The correct answer is A police station at Chauri Chaura in Uttar Pradesh was set on fire by a mob.

15. Which city is NOT a part of The Golden Quadrilateral highway network?
a. Hyderabad
b. Kolkata
c. Delhi
d. Mumbai

Ans. a
Explanation:
The correct answer is Hyderabad.
The Golden Quadrilateral superhighways connect the cities of Delhi, Kolkata, Chennai, Mumbai, and Delhi. Therefore, Hyderabad city is NOT a part of The Golden Quadrilateral highway network. Hence, Option 1 is correct.

16. Who was the first Muslim President of the Indian National Congress?
a. Abul Kalam Azad
b. Badruddin Tyabji
c. Nawab Syed Muhammad Bahadur
d. Dada Bhai Naoroji

Ans. b
Explanation:
The correct answer is Badruddin Tyabji
Badruddin Tyabji was the first Muslim President of the Indian National Congress. Hence, Option 2 is correct.

17. As of August, 2019, how many Himalayan peaks are open for trekking for domestic and foreign mountaineers?
a. 120
b. 137
c. 130
d. 140

Ans. b
Explanation:
The correct answer is 137.
As of August 2019, 137 Himalayan peaks are open for trekking for domestic and foreign mountaineers.

18. Given below is a paragraph. While S1 and S6 are the first and last sentences of this paragraph, the parts that are labelled 1, 2, 3 and 4 are jumbled up. Rearrange them to form a meaningful and coherent paragraph.
S1: Several metro lines have been planned in the NCR.
1. Red line is the first among them.
2. They are expected to alleviate the problem of transportation.
3. It starts from Shahdara and terminates at Tiz-Hazari in the initial phase.
4. It caters to over 1 lakh commuters at present.
S6: Hopefully, the public transportation problem will not be as acute after all the metro lines are completed.
a. 1, 3, 4, 2

b. 2, 1, 3, 4
c. 1, 2, 3, 4
d. 2, 3, 4, 1

Ans. b
Explanation:
The pattern followed here is:
The given sentences are arranged according to the meaningful order.
S1: Several metro lines have been planned in the NCR.
2. They are expected to alleviate the problem of transportation.
1. Red line is the first among them.
3. It starts from Shahdara and terminates at Tiz-Hazari in the initial phase.
4. It caters to over 1 lakh commuters at present.
S6: Hopefully, the public transportation problem will not be as acute after all the metro lines are completed.
Hence, the correct answer is "2, 1, 3, 4".

19. The value of a car depreciates at the rate of 20% every year. After two years the value of the car will be Rs. 4,80,000/-. The original price of the car is:
a. Rs. 6,20,000/-
b. Rs. 6,00,000/-
c. Rs. 5,50,300/-
d. Rs. 7,50,000/-

Ans. d
Explanation:
Given:
Rate of depreciation = 20%
Market Value of the car after 2 years = Rs.480000
Formula used:
Depreciation = Original value × Rate/100
Market Value = Original Value × (1 - R/100)n
Calculation:
480000 = Original Value × (1 - 20/100)2
⇒ 480000 = Original Value × 80/100 × 80/100
⇒ Original Value = 480000 × 100/80 × 100/80

∴ Original Value = Rs.750000

20. A positively charged ion is called a/an:
a. molecule
b. atom
c. anion
d. cation

Ans. d
Explanation:
The correct answer is Cation.
Cations is positively charged ions. Hence, Option 4 is correct.

21. When a number n is divided by 5, the remainder is 2. When n^2 is divided by 5, the remainder will be:
a. 0
b. 1
c. 4
d. 3

Ans. c
Explanation:
Concept:
Dividend = Divisor × Quotient + Remainder
Calculation:
Let the quotient be = b
n = 5 × b + 2
n2 = (5b + 2)2
⇒n 2 = 25b 2 + 4 + 2 × 5b × 2
⇒n 2 = 25b 2 + 4 + 20b
⇒n 2 = 5(5b 2 + 4b) + 4
∴ When n 2 is divided by 5, the remainder will be 4.

22. Which country ranked first in the world as per the human development index of 2020?
a. Japan
b. Australia

c. Norway
d. USA

Ans. c
Explanation:
The correct answer is Norway.
Norway topped the index, followed by Ireland and Switzerland. Hong Kong and Iceland complete the top five. Hence, Option 3 is correct.

23. India boycotted the first Belt and Road Forum in 2017 after protesting against Beijing over the controversial _____.
a. China-Nepal Economic Corridor
b. China-Pakistan Economic Corridor
c. China-Afghanistan Economic Corridor
d. China-Bhutan Economic Corridor

Ans. b
Explanation:
The correct answer is China-Pakistan Economic Corridor.
India boycotted the first Belt and Road Forum (BRF) in 2017 after protesting to Beijing over the controversial China-Pakistan Economic Corridor (CPEC) which is being laid through the Pakistan-occupied Kashmir (PoK) overriding New Delhi's sovereignty concerns. Hence, Option 2 is correct.

24. India is _____ _____ states and union territories as of 31st October 2020.
a. 26 and 6
b. 29 and 9
c. 24 and 7
d. 28 and 8

Ans. d
Explanation:
The correct answer is 28 and 8.
As of 31st October 2020, India comprises twenty-eight states and eight union territories. Hence option 4 is correct.

25. Which of the following is an allotropic form of carbon?

a. Diamond
b. Gypsum
c. Chalk
d. Marble

Ans. a
Explanation:
The correct answer is Diamond.
Well-known forms of carbon are Graphite and Diamond. Hence, Option 1 is correct.

26. Who are the famous Indian women lawyers who led the legal battle to strike Section 377 of the Indian Penal Code (IPC) ?
a. Menaka Guruswamy and Pinky Anand
b. Karuna Nandi and Vrinda Grover
c. Menaka Guruswamy and Arundhati Katju
d. Menaka Gandhi and Arundhati Roy

Ans. c
Explanation:
The correct answer is Menaka Guruswamy and Arundhati Katju.
Menaka Guruswamy and Arundhati Katju are famous Indian women lawyers who led the legal battle to strike Section 377 of the Indian Penal Code (IPC). Hence, Option 3 is correct

27. How many such consonants are there in the following arrangement, each of which is immediately followed by a vowel but not preceded by a number?
TRB50%U7C4#KFS2UE*1813V@9IX@LAB
a. Two
b. More than three
c. Three
d. One

Ans. d
Explanation:

The logic followed is:
Condition to be checked:
1) Consonants are there in the following arrangement, each of which is immediately followed by a vowel but not preceded by a number.
Number (symbol, vowel, consonant) → Consonants → Vowel
Given arrangement: TRB50%U7C4#KFS2UE*1813V@9IX@LAB
@LA is immediately followed by a vowel but not preceded by a number.
So, there is only one such consonant in the following arrangement, which is immediately followed by a vowel but not preceded by a number.
Hence, ‘ one ’ is the correct answer.

28. If $\sqrt{3}\tan 2\theta - 3 = 0$, then θ is:
a. 45°
b. 30°
c. 60°
d. 150°

Ans. b
Explanation:
Given:
$\sqrt{3}\tan 2\theta - 3 = 0$
Calculation:
$\sqrt{3}\tan 2\theta - 3 = 0$
$\Rightarrow \sqrt{3}\tan 2\theta = 3$
$\Rightarrow \tan 2\theta = 3/\sqrt{3}$
$\Rightarrow \tan 2\theta = \sqrt{3}$
$\Rightarrow \tan 2\theta = \tan 60°$
$\Rightarrow 2\theta = 60°$
$\therefore \theta = 30°$

29. In an examination, a student scored 65% marks but was 20 marks below the qualifying marks. Another student scored 80% marks and scored 10 marks more than the qualifying marks. Total marks of the examination are:
a. 300
b. 500
c. 200

d. 400

Ans. c
Explanation:
Given:
Marks scored by one student = 65%
Marks scored by another student = 80%
Solution:
Let the total marks be = y
Qualifying marks of one student = 65% of y + 20
Qualifying marks of another student = 80% of y - 10
As per the question;
65% of y + 20 = 80% of y - 10
⇒ 65/100 × y + 30 = 80/100 × y
⇒ 30 = 80y/100 - 65y/100
⇒ 15y/100 = 30
⇒ y = 200
∴ The total marks of the examination are 200.

30. How many demands did Mahatma Gandhi make in his letter to Lord Irwin some of which were agreed to and came to be known as Gandhi-Irwin Pact?
a. 10
b. 13
c. 12
d. 11

Ans. d
Explanation:
The correct answer is 11.
Mahatma Gandhi presented his 11 demands to the Viceroy Lord Irwin and gave him the ultimate of January 31, 1932, to accept these demands.
Hence, Option 4 is correct.

31. In a school, the number of boys and girls were in the ratio 5 : 7. Eight more boys were admitted during the session. The new ratio of girls and boys is 1 : 1. In the beginning, the difference between the number of boys and that of

girls was:
a. 12
b. 02
c. 10
d. 08

Ans. d
Explanation:
Given:
Ratio of number of boys and girls = 5 : 7
New ratio of the number of boys and girls = 1 : 1
Calculation:
Let the number of boys and girls be 5a and 7a respectively.
After admission of 8 more boys;
(5a + 8)/7a = 1/1
⇒ 5a + 8 = 7a
⇒ 7a - 5a = 8
⇒ 2a = 8
⇒ a = 4
∴ The difference between the number of boys and girls in the beginning = 7a - 5a = 2a
⇒ 2 × 4 = 8

32. Which of the following is NOT a Government of India initiative to attract Foreign Direct Investments (FDI) in India?
a. Proposals of FDI are mandated to be cleared within ten days of receiving the application
b. States must focus on strengthening the single window clearance system.
c. The Government of India announced 'Entrepreneurship Curriculum' to be taken up by the states.
d. The Government of India has eased the approval mechanism for FDI proposals.

Ans. c
Explanation:
The correct answer isthe Government of India announced the 'Entrepreneurship

Curriculum' to be taken up by the states.
The government of India initiative to attract Foreign Direct Investments (FDI) in India are:
Proposals of FDI are mandated to be cleared within ten days of receiving the application .Hence, Statement 1 is correct.

33. Identify the number that does NOT belong to the given series of numbers.
46, 31, 22, 17, 30, -32, -89, -179
a. 30
b. 22
c. -32
d. -89

Ans. a
Explanation:
The logic followed here is:
Given series: 46, 31, 22, 17, 30 , -32, -89, -179
The series is in decreasing order but 30 is exceptionally greater than 17.
Thus 30 is the wrong term.
Hence, the correct answer is "30".

34. If the difference between squares of two consecutive positive odd integers is 56, then the two consecutive odd integers are:
a. 13, 15
b. 11, 13
c. 15, 17
d. 17, 19

Ans. a
Explanation:
Given:
The difference between the squares of two consecutive positive odd integers = 56
Calculation:
Let the first odd number = b
⇒ Second odd number = b + 2
As per the question;
(b + 2)

2 - b
2 = 56
⇒b 2 + 4 + 4b - b 2 = 56
⇒ 4b = 56 - 4
⇒ 4b = 52
⇒ b = 13, b + 2 = 15
∴ The consecutive odd numbers are 13, 15 respectively.

35. Which agency was created by the United Nations to provide emergency food and health care to children and mothers in the countries affected by World War II?
a. UNESCO
b. IMF
c. UNICEF
d. WHO

Ans. c
Explanation:
The correct answer is UNICEF.
UNICEF was created by the United Nations to provide emergency food and health care to children and mothers in the countries affected by World War II.

36. Which of the following rural housing schemes by the Government of India is re-structured into Pradhan Mantri Gramin Awas Yojana?
a. Jawahar Gram Samridhi Yojana
b. Indira Awas Yojana
c. Deendayal Antyodaya Yojana
d. Rajiv Awas Yojana

Ans. b
Explanation:
The correct answer is Indira Awas Yojana
To achieve the objective of Housing for All by 2022, the erstwhile rural housing scheme Indira Awaas Yojana (IAY) was restructured to Pradhan Mantri Awaas Yojana-Gramin (PMAY-G) w.e.f 1
st April 2016. Hence, Option

2 is correct.

37. Which sea route is the busiest in the world?
a. The North Pacific sea route
b. The South Pacific sea route
c. The North Atlantic sea route.
d. The Cape of Good Hope sea route

Ans. c
Explanation:
The correct answer is The North Atlantic sea route.
TheNorth Atlantic sea routeis the busiest sea route in the world.

38. Simplify the following
$\frac{1}{2} \div (\frac{1}{2} \times \frac{1}{2}) \times \frac{1}{2} + \frac{1}{2} \div (\frac{1}{4} \times \frac{3}{4})$
a. $\frac{11}{2}$
b. $\frac{4}{3}$
c. $\frac{11}{8}$
d. $\frac{11}{3}$
Ans. d
Explanation:
Follow BODMAS rule
Calculation:
$\frac{1}{2} \div (\frac{1}{2} \times \frac{1}{2}) \times \frac{1}{2} + \frac{1}{2} \div (\frac{1}{4} \times \frac{3}{4})$
⇒ 1/2 ÷ (1/4) × 1/2 + 1/2 ÷ 3/16
⇒ 1/2 ÷ (1/4) × 1/2 + 1/2 × 16/3
⇒ 1/2 × 4 × 1/2 + 1/2 × 16/3
⇒ 1/4 × 4 + 8/3
⇒ 1 + 8/3
⇒ 11/3
∴ $\frac{1}{2} \div (\frac{1}{2} \times \frac{1}{2}) \times \frac{1}{2} + \frac{1}{2} \div (\frac{1}{4} \times \frac{3}{4})$ = 11/3

39. When did India test its first atomic bomb?
a. 1981
b. 1969
c. 1976
d. 1974

Ans. d
Explanation:
The correct answer is 1974.
India test its first successful atomic bomb in1974.

40. Which country will host the Asian Cup Football tournament in 2023 ?
a. South Korea
b. India
c. Japan
d. China

Ans. d
Explanation:
The correct answer isChina,
The Asian Cup is a football tournament in which senior men's national teams from members of the Asian Football Confederation compete (AFC).

41. Who led the non-cooperation movement in 1920-22?
a. Mahatma Gandhi
b. Jawahar Lal Nehru
c. Subhash Chandra Bose
d. Motilal Nehru

Ans. a
Explanation:
The correct answer is Mahatma Gandhi.
Mahatma Gandhi led the non-cooperation movement in 1920-22

42. Devesh leaves his home every day at 7 a.m. and reaches office at 8:30 a.m. One day he left his home at 7 a.m. but travelled a fifth of the distance at 5/6 of the usual speed and the rest of the distance at 6/5 of the usual

speed. Approximately at what time did Devesh reach office on that day?
a. 8:36 a.m.
b. 8:21a.m.
c. 8:40 a.m.
d. 8:25 a.m.

Ans. b
Explanation:
Given:
Devesh leaves his home 7 AM and reaches office at 8:30 AM
One day 1/5 of the distance covered at 5/6th of his usual speed
And rest of the distance covered at 6/5 of his usual speed.
Formula used:
Time = Distance/Speed
Calculation:
Let the distance covered by Devesh be = d
Let the time be = t
Let the speed be = s
From 7 AM to 8:30 Am = Time = 1.5 hours
As per the question;
(d/5)/(5s/6) + (4d/5)/(6s/5)
⇒ d/5 × 6/5s + 4d/5 × 5/6s
⇒ 6d/25s + 2d/3s
⇒ (6/25 + 2/3) × d/s
⇒ (18 + 50)/75 × t
⇒ 68/75 × 1.5 hours
⇒ 68/75 × 3/2
⇒ 34/25
⇒ 1 hour and 9/25 × 60 minutes
⇒ 1 hour and 21.6 minutes
∴ Approximately, Devesh reach at office at 8:21 Am on that day.

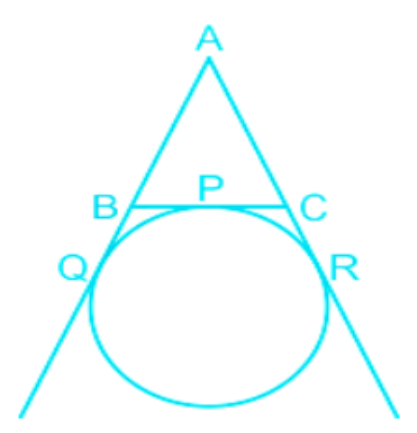
43. A circle touches the side BC of triangle ABC at P. Side AB and AC are produced to touch the circle at points Q and R respectively. The length of AQ is:
a. $\frac{1}{2}$**(BC + CA + AB)**

b. $\frac{1}{3}$**(BC + CA + AB)**

c. $\frac{1}{2}$**(2BC + 2CA + 2AB)**

d. $\frac{1}{4}$**(BC + CA + AB)**

Ans. a
Explanation:
Concept:
Length of sides of a triangle drawn from an external point to a circle are equal
Two tangents are equal in length drawn from the same origin point.
Calculation:



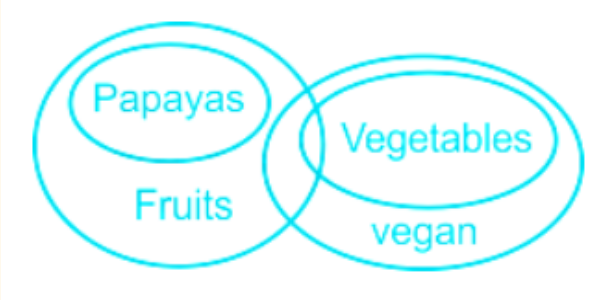
AQ = AR, BQ = BP, CP = CR ∵ [Tangents from the same origin point]
Perimeter of triangle ABC = AB + BC + AC
⇒ AB + (BP + PC) + (AR - CR)
⇒ (AB + BQ) + PC + (AQ - PC)
⇒ AQ + AQ
⇒ 2 AQ
∴ AQ = 1/2 × (AB + BC + AC)

44. If P = 2 + √3, Q = 2 - √3, then P/Q = ?
a. 7 - 2√6
b. $\frac{7+4\sqrt{3}}{1}$
c. 4√3 - 5
d. 4√6 + 5

Ans. b
Explanation:
Given:
P = 2 + √3, Q = 2 - √3
Formula used:
(a - b)(a + b) = a2 - b2
Calculation:
By rationalization
P/Q = (2 + √3)/(2 - √3) × (2 + √3)/(2 + √3)
⇒ P/Q = (2 + √3)2 / (2)2- (√3)2
⇒ P/Q = (4 + 3 + 4√3)/(4 - 3)
∴ P/Q = (7 + 4√3)/1

45. Read the given statements 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 statements.
Statements:
A. All papayas are fruits.
B. Some fruits are vegetables.
C. All vegetables are vegan.
Conclusions:
i Some vegetables are papayas.
ii. Some vegans are fruits.
iii. Some vegans are papayas.
iv. Some fruits are papayas.
a. Only (ii) and (iv) follow
b. Only (iv) follows
c. Only (ii) and (iii) follow
d. Only (i) follows

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



Conclusions:
i Some vegetables are papayas. → False (As, there is no definite relation between vegetables and papayas. Hence, false)
ii. Some vegans are fruits. → True (As, Some fruits are vegetables and All vegetables are vegan → Some vegans are fruits)
iii. Some vegans are papayas. → False (As, there is no definite relation between vegans and papayas. Hence, false)
iv. Some fruits are papayas. → True (As, All papayas are fruits → Some fruits are papayas)
Hence, only (ii) and (iv) follow .

46. Which of the following is NOT a computer component?
a. Memory
b. CPU
c. ALU
d. Paper

Ans. d
Explanation:
The correct answer isPaper.
Among the options, only Paper is NOT a computer component.

47. A sum of Rs. 12,000.00 deposited at compound interest becomes double at the end of 5 years. At the end of 15 years the sum will be:
a. Rs. 1,08,000.00
b. Rs. 84,000.00
c. Rs. 1,20,000.00
d. Rs. 96,000.00

Ans. d
Explanation:
Given:
Principal = Rs.12000
Time = 5 years
Formulas used:
Amount = Principal × (1 + r/100)n
Calculation:
Amount = Principal × (1 + r/100)5
⇒ 24000 = 12000 × (1 + r/100) 5
⇒ 24000/12000 = (1 + r/100) 5
⇒ 2 = (1 + r/100) 5 (1)
⇒ At the end of 15 years,
⇒ Amount = 12000 × (1 + r/100)15
⇒ Amount = 12000 × [(1 + r/100)5]3 (From 1)
⇒12000 ×2^3
⇒12000 × 8
⇒ 96000
∴ The amount at the end of 15 years will be Rs.96000

48. One root of the equation 2x^2 − 8x − m = 0, is$\frac{5}{2}$ The other root of the equation and the value of m are respectively:

a. $\frac{3}{2}$ **and -** $\frac{15}{2}$

b. - $\frac{3}{2}$ **and -** $\frac{15}{2}$

c.$\frac{5}{2}$ **and -** $\frac{15}{2}$

d.– $\frac{5}{2}$ **and -** $\frac{15}{2}$

Ans. a
Explanation:
Concept:
The standard form of a quadratic equation is ax
2 + bx + c = 0
Given:

One root of the equation $2x^2 - 8x - m = 0$, is $\frac{5}{2}$

Calculation:

By substituting 5/2 for x in the equation $2x^2$ - 8x - m = 0
⇒ 2 × (5/2)2 - 8 × (5/2) - m = 0
⇒ 2 × 25/4 - 40/2 - m = 0
⇒ 25/2 - 40/2 - m = 0
⇒ - 15/2 - m = 0
∴ m = -15/2
Now, by putting the value of m in the equation;
⇒ 2x 2 - 8x - (-15/2) = 0
⇒ 2x 2 - 8x + 15/2 = 0
⇒ 4x 2 - 16x + 15 = 0
⇒ 4x 2 - 10x - 6x + 15 = 0
⇒ 2x(2x - 5) - 3(2x - 5) = 0
⇒ (2x - 5)(2x - 3) = 0
⇒ x = 5/2, 3/2
∴ The other root, x = 3/2 and m = - 15/2

49. What type of pollution causes various diseases related to the respiratory system?
a. Noise pollution
b. Land pollution
c. Air pollution
d. Water pollution

Ans. c
Explanation:
The correct answer is Air pollution.
Air pollutionhas an impact on most of the organs and systems of the human body.

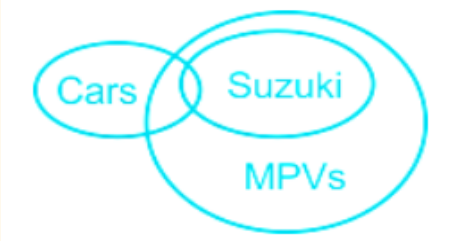
50. Given below is a paragraph. While S1 and S6 are the first and last sentences of this paragraph, the parts that are labelled 1, 2, 3 and 4 are jumbled up. Rearrange them to form a meaningful and coherent paragraph.
S1: Shruti has been trying to lose weight.

1. Regular exercising keeps our body fit and healthy.
2. The trainer has suggested her to start with regular exercising in the morning.
3. She has not yet started her exercising sessions.
4. She says that because of late night office hours, it is difficult for her to get up early in the morning.
S6: I think it is just a lame excuse for her laziness.
a. 4, 2, 3, 1
b. 3, 2, 1, 4
c. 2, 1, 3, 4
d. 1, 2, 4, 3

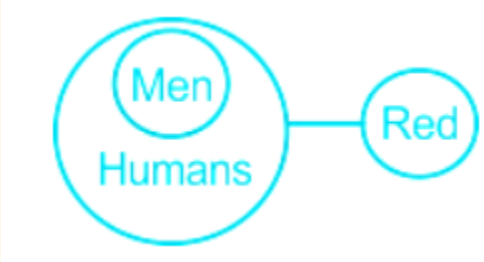
Ans. c
Explanation:
The pattern followed here is:
The given sentences are arranged according to the meaningful order.
S1: Shruti has been trying to lose weight.
2. The trainer has suggested her to start with regular exercising in the morning.
1. Regular exercising keeps our body fit and healthy.
3. She has not yet started her exercising sessions.
4. She says that because of late night office hours, it is difficult for her to get up early in the morning.
S6: I think it is just a lame excuse for her laziness.
Hence, the correct answer is "2, 1, 3, 4"

51. From the 3 sets of statements, A, B and C given below, choose the set/s in which the third statement is a logical conclusion of the first two statements.
A. Some cars are Suzuki. All Suzukis are MPVs. Some cars are MPVs.
B. All men are humans. No human is red. No man is red.
C. Every man loves his wife. All wives are beautiful. No beautiful has a husband.
a. Only B
b. A and B only
c. Only A
d. B and C only

Ans. b
Explanation:
A. Some cars are Suzuki. All Suzukis are MPVs. Some cars are MPVs.
The least possible Venn diagram is:



Some cars are MPVs. → True
B. All men are humans. No human is red. No man is red.
The least possible Venn diagram is:



No man is red. → True
C. Every man loves his wife. All wives are beautiful. No beautiful has a husband.
No beautiful has a husband → False (As, there is no definite relation between beautiful and husband . Hence, false)
Hence, ‘ A and B only ’ is the correct answer.

52. Select the option that is related to the third term in the same way as the second term is related to the first term?
Gravity : Discovery :: Telephone : ?
a. Explore
b. Construct
c. Experiment
d. Invention

Ans. d

Explanation:
The logic is:
Gravity : Discovery → Gravity was discovered by Isaac Newton.
Similarly,
Telephone : ? → Telephone was invented by Alexander Graham Bell.
Hence, ‘ Invention ’ is the correct answer.

53. The ratio of two numbers is 2 : 3. When 4 is added to the numbers, the ratio becomes 7 : 10. The difference between the numbers is:
a. 12
b. 08
c. 24
d. 10

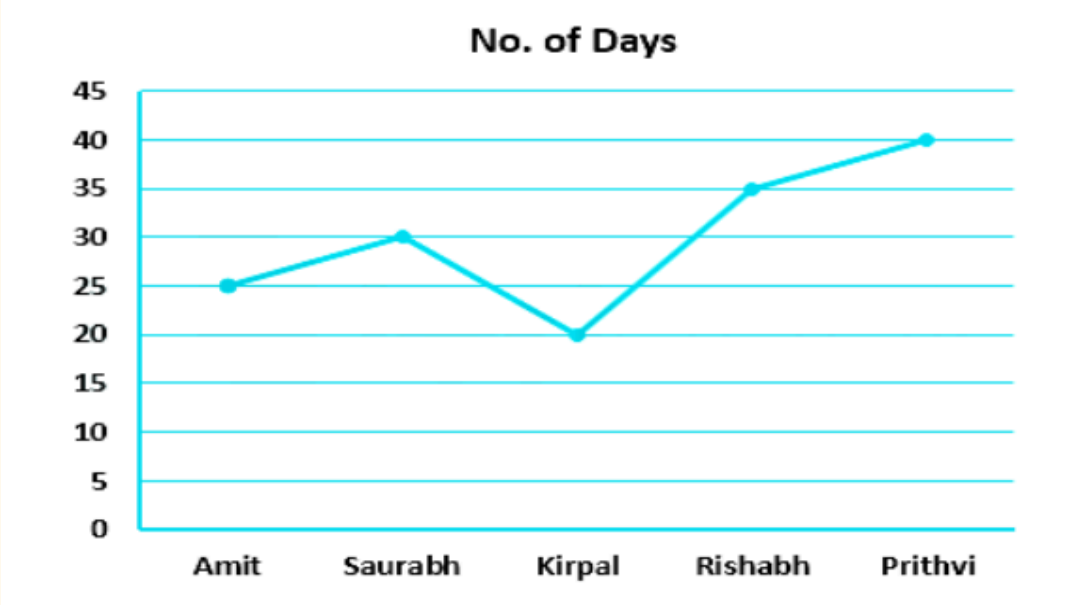
Ans. a
Explanation:
Given:
The old ratio of two numbers = 2 : 3
New ratio = 7 : 10
Calculation:
Let the numbers be 2b and 3b respectively.
(2b + 4)/(3b + 4) = 7/10
⇒ 20b + 40 = 21b + 28
⇒ b = 40 - 28
⇒ b = 12
Two numbers are:
⇒ 2b = 2 × 12 = 24, 3b = 3 × 12 = 36
∴ The difference of the two numbers = 36 - 24 = 12

54. What facilitates remote login on a computer ?
a. FTP
b. RTP
c. Telnet
d. HTTP

Ans. c
Explanation:

The correct answer is Telnet.
Telnet is an application protocol that uses a virtual terminal connection to offer bidirectional interactive text-oriented communication over the Internet.
Telnet facilitates remote login on a computer.

55. The following graph represents the number of days taken by five boys individually to complete a piece of work. If Saurabh and Kirpal work together, find the number of days taken by them to complete the work.



a. 18 days
b. 6 days
c. 12 days
d. 20 days

Ans. c
Explanation:
Given:
No of days taken by Saurabh = 30
No of days taken by Kirpal = 20
Formula used:
No of days taken = Total work/One-day efficiency
Calculation:
Let the total work be = 1 unit
Work done by Saurabh in one day = 1/30

Work done by Kirpal in one day = 1/20
⇒ Combined work done by Saurabh and Kirpal in one day = 1/30 + 1/20 = 5/60
∴ No of days taken by both of them working together = 1÷ 5/60 = 60/5
⇒ 12 days

56. How many organisations are a part of the United Nations in India ?
a. 28
b. 22
c. 12
d. 26

Ans. d
Explanation:
The correct answer is 26.
The United Nations and the Government of India have a long history of close cooperation, and the United Nations system in India now includes26

57. For which Indian spice did the Indian government challenge the US patenting and force them to revoke it?
a. Clove
b. Mustard
c. Cardamom
d. Turmeric

Ans. d
Explanation:
The correct answer is Turmeric
Indian government challenges the US for patentingturmericand forces them to revoke it.

58. Select the letter from among the given options that can replace the question mark (?) in the following series.
Y, V, Q, J, ?
a. C
b. D
c. A
d. B

Ans. c
Explanation:
The pattern followed here is:
According to the alphabetical positions of the letters,
Y - 3 = V;
V - 5 = Q;
Q - 7 = J;
J - 9 = A
Hence, ‘ A’ is the correct answer.

59. The difference between the mean of first 5 composite numbers and the mean of the first five prime numbers is:
a. 1.8
b. 1.6
c. 2.6
d. 2.4

Ans. a
Explanation:
Concept:
First five composite numbers = 4, 6, 8, 9, 10 (Which are obtained by multiplying two positive integers)
First five prime numbers = 2, 3, 5, 7, 11 (Which have only 2 factors, 1 and the number itself)
Formula used:
Mean = Sum of observations/No of observations
Calculation:
Mean of first 5 composite numbers = (4 + 6 + 8 + 9 + 10)/5 = 37/5
Mean of first 5 prime numbers = (2 + 3 + 5 + 7 + 11)/5 = 28/5
∴ The required difference = 37/5 - 28/5 = 9/5
⇒ 1.8

60. Two men start travelling from the same place in the same direction at the rate of 5 km/h and 5.5 km/h respectively. To be 8.5 km apart from each other, the time taken by them is:
a. 8 h 30 min
b. 16 h 15 min

c. 4 h 15 min
d. 17 h

Ans. d
Explanation:
Given:
Speed of the one man = 5 km/h
Speed of the other man = 5.5 km/h
Formulas used:
Relative Speed in the same direction = Speed A - Speed B
Time = Distance/Speed
Calculation:
Relative speed of both men = 5.5 - 5 = 0.5 km/h
Distance = 8.5 km
Time = 8.5 km/0.5 km/h
⇒ 17 hours
∴ The required time = 17 hours

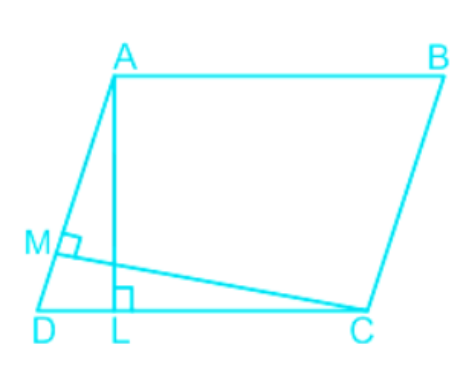
61. What was India's rank in terms of size of economy according to the GDP ranking of 2019 ?
a. 9th
b. 11th
c. 7th
d. 5th

Ans. d
Explanation:
The correct answer is 5th.
India ranked the world's5th largest economy in terms of size according to the GDP ranking of 2019.

62. In the parallelogram ABCD, AL and CM are perpendicular to CD and AD respectively. AL = 20 cm, CD = 18 cm and CM = 15 cm. The perimeter of the parallelogram is:
a. 64 cm
b. 76 cm
c. 80 cm

d. 84 cm

Ans. d
Explanation:
Given :
In parallelogram ABCD, AL and CM are perpendicular to CD and AD respectively.
AL = 20 cm, CD = 18 cm and CM = 15 cm
Formula used:
Area of parallelogram = Base × Height
Perimeter of parallelogram = 2 × (Sum of parallel sides)
Calculation:



Area of ABCD with base DC = AL × DC = 20 × 18
⇒ 360 cm 2
Again, Area of ABCD with base AD = CM × AD = 15 × AD
⇒ 360 cm 2 = 15 × AD
⇒ AD = 24 cm
∴ AD = BC = 24 cm, DC = AB = 18 cm
Perimeter of ABCD = 2 × (24 + 18)
⇒ 2 × 42
⇒ 84 cm
∴ The required result = 84 cm

63. The difference between the compound interest compounded annually and the simple interest on a certain sum of money for 2 years at 4% per annum is Rs. 20.00. The sum is:
a. Rs. 8,500.00
b. Rs. 10,500.00
c. Rs. 12,500.00

d. Rs. 11,500.00

Ans. c
Explanation:
Given:
Difference between CI and SI for 2 years = Rs.20
Rate = 4%
Formulas used:
Difference = Principal × (R/100)
2
Calculation:
Rs.20 = Principal × (4/100)
2
⇒ 20 = Principal × 4/100 × 4/100
⇒ 20 × 100/4 × 100/4 = Principal
∴ Principal = 12500

64. What does WCCB stand for in the context of Environment and Forest?
a. World Conservation Control Bureau
b. World Crime Control Bureau
c. Wildlife Crime Control Bureau
d. Wildlife Conservation Control Bureau

Ans. c
Explanation:
The correct answer is Wildlife Crime Control Bureau.
WCCB in the context of Environment and Forest stands for Wildlife Crime Control Bureau.

65. The denominator of a fraction is 2 more than the numerator. When the numerator is multiplied by 3 and the denominator is multiplied by 2 the fraction becomes 1/2. The given fraction is:
a. 2/5
b. 1/4
c. 2/3
d. 1/3

Ans. d
Explanation:
Given:
Denominator = 2 + Numerator
Calculation:
Let the numerator be = a
⇒The denominator be = 2 + a
As per the question;
a × 3 /(2 + a) × 2 = 1/2
⇒ 3a/(2 + a) = 1
⇒ 3a = 2 + a
⇒ 2a = 2
⇒ a = 1
Numerator = 1
Denominator = 1 + 2 = 3
∴ The required fraction = 1/3

66. Name the element which has an electronic configuration of 2, 8, 7.
a. Helium
b. Chlorine
c. Carbon
d. Hydrogen

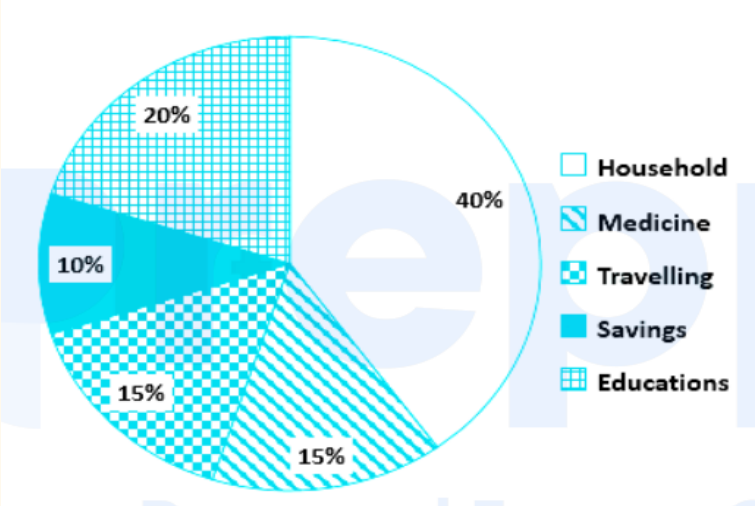
Ans. b
Explanation:
The correct answer isChlorine.
The element having electronic configuration 2,8,7 is Chlorine .

67. The least number that should be added to the largest three digit number to make it a perfect square, is:
a. 24
b. 25
c. 01
d. 12

Ans. b
Explanation:

Given:
The largest 3-digit number = 999
Concept:
Long division method
Calculation:
Let the number to be added in 999 is y.
Here, the remainder is 38
32^2 < (999 + y) < 32^2
⇒ 32^2 - 999 = 1024 - 999 = 25
⇒ 999 + 25 = 1024 = 32 2
∴ The number to be added in 999 to make it a perfect square is 25.

68. The Pie Chart represents the share of savings and expenses under different heads, from the monthly salary of Manish.



If Manish's salary is Rs. 50,000 and he wishes to double his monthly savings and spend 50% of the balance amount on his Household expenses, by what amount would he need to reduce on the other expenses.
a. Rs. 5,000
b. Rs. 15,000
c. Rs. 10,000
d. Rs. 20,000

Ans. a
Explanation:

Given:
Monthly salary of Manish = Rs.50000
Old savings = 10% × 50000 = 5000
Calculation:
Old expenses on household = 40/100 × 50000 = Rs.20000
Old amount on other expenses = Salary - (Old savings + Old household expenses)
⇒ Rs.50000 - (Rs.20000 + Rs.5000) = Rs.25000
As per the question;
New savings = 2 × 10/100 × 50000 = Rs.10000
New balance of the salary = 50000 - 10000 = Rs.40000
Amount to be used on Household expenses = 50% of Rs.40000
⇒ 50/100 × 40000 = Rs.20000
New amount of other expenses = Salary - (New savings + New household expenses)
⇒ Rs.50000 - (Rs.10000 + Rs.20000) = Rs.20000
∴ Reduction on the other expenses = Old - New
⇒ Rs.25000 - Rs.20000 = Rs.5000

69. Two statements are given followed by two conclusions. Considering the two statements to be true irrespective of the commonly known facts, decide which of the two conclusions follow logically from these two statements.
Statements:
1: All hill stations have an echo-point.
2: P is a hill station.
Conclusions:
1: P has an echo-point.
2: Places other than hill stations do not have echo-points.
a. Both conclusion 1 and conclusion 2 follow
b. Only conclusion 1 follows
c. Neither conclusion 1 nor conclusion 2 follows
d. Only conclusion 2 follows

Ans. b
Explanation:
Conclusions:
1: P has an echo-point.
Conclusion 1 follows. All hill stations have an echo-point and P is a hill station, which

clearly means P has an echo-point as P is a hill station and all hill stations have an echo-point.
2: Places other than hill stations do not have echo-points.
Conclusion 2 does not follows. The statements do no mentions whether places other than hill stations have an echo-point or not.
Hence, only conclusion 1 follows .

70. According to the Census of 2011 _____ is the most populated state of India.
a. West Bengal
b. Tamil Nadu
c. Andhra Pradesh
d. Uttar Pradesh

Ans. d
Explanation:
The correct answer is Uttar Pradesh.
Uttar Pradesh is the most populated state of India.

71. Three electronic bells are fixed in three adjoining temples. The priests of these temples decided to ring the bells at different times with the intervals of 2, 3 and 5 min. If the bells start tolling together for the first time at 8:00:00 in the morning. up to 9:00:00 in the morning they will toll together:
a. 2 times after the starting time
b. 4 times after the starting time
c. 15 times after the starting time
d. 5 times after the starting time

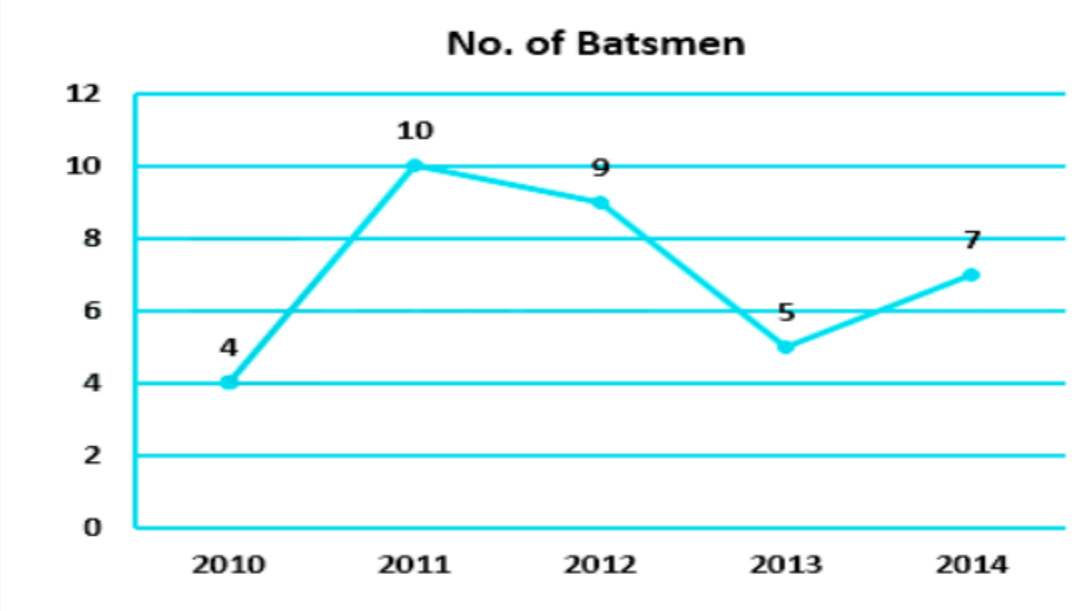
Ans. a
Explanation:
Given:
Priest of 1st temple ring the bells at an interval of 2 minutes
Priest of 2nd temple ring the bells at an interval of 3 minutes
Priest of 3rd temple ring the bells at an interval of 5 minutes
They start tolling for the first time at 8:00:00
Calculation:
LCM of 2, 3 and 5 is 30 min

Difference between 8:00 – 9:00 = 1 hour
Hence, Bell will ring in 60 min = 60/30
⇒ 2 times
∴ Bell will ring 2 times after the starting time

72. How many output ports are there in peripheral I/O ?
a. 256
b. 512
c. 264
d. 24

Ans. a
Explanation:
The correct answer is 256.
There will be 2
8 =256 input ports and256 output portsare possible in an 8085-based microcomputer

73. The following line graph shows the number of batsmen who scored 500+ runs in the Indian Cricket League from 2010 to 2014. In which year did maximum number of batsmen score 500+ runs ?



a. 2012

b. 2013
c. 2011
d. 2014

Ans. c
Explanation:
Calculation:
Maximum number of batsman score 500+ runs in 2011 = 10
∴ The required answer is 2011

74. The least multiple of 23 when divided by 18, 21 and 24 leaves the remainder 7, 10 and 13 respectively. The number is:
a. 3113
b. 3131
c. 3103
d. 3013

Ans. d
Explanation:
Calculation:
LCM of 18, 21 and 24 is 504
Let the number be 504k
According to the question
⇒ 504k – [(18 – 7) + (21 – 10) + (24 – 13)]/3
⇒ 504k – (33/3)
⇒ 504k – 11
Put the value of k so that it should be divisible by 23
Put k = 6
⇒ 504 × 6 – 11
⇒ 3024 – 11
⇒ 3013
∴ The number is 3013

75. If $x\sqrt{12} = 4 + x\sqrt{3}$. the value of x is:
a. $2\sqrt{3}$
b. $\sqrt{3}$
c. $-\sqrt{3}$

d. $\frac{4}{\sqrt{3}}$

Ans. d
Explanation:
Given:
$x\sqrt{12} = 4 + x\sqrt{3}$
Calculation:
$x\sqrt{12} = 4 + x\sqrt{3}$
$\Rightarrow 2x\sqrt{3} = 4 + x\sqrt{3}$
$\Rightarrow x(2\sqrt{3} - \sqrt{3}) = 4$
$\Rightarrow x = 4/\sqrt{3}$
$\therefore$ The value of x is $\frac{4}{\sqrt{3}}$

76. When the side of an equilateral triangle is made three times the original side, the area of the new equilateral will become:
a. 3 times of the original area
b. 6 times of the original area
c. 12 times of the original area
d. 9 times of the original area

Ans. d
Explanation:
Calculation:
Let the side of original triangle be a and area is A 1 and the new area of the equilateral triangle be A 2
Area of equilateral triangle (A 1) = $\sqrt{3}/4 \times a2$
According to the question
On increasing sides by three times
New area of equilateral triangle (A 2
) = $\sqrt{3}/4 \times (3a)2$
$\Rightarrow \sqrt{3}/4 \times 9a2$
$\Rightarrow 9 \times \sqrt{3}/4a2$
$\Rightarrow$ A 2 = 9A 1
$\therefore$ The area of new equilateral will become 9 times of the original area

77. A sector is cut off from a circle of radius 21 cm. The angle of the sector is

40 degrees. Find the area of the sector in square cm?
a. 144
b. 154
c. 145
d. 156

Ans. b
Explanation:
Given:
Radius = 21 cm
The angle of the sector = 40°
Formula used:
Area of the sector = πr
2θ/360°
Calculation:
According to the question
⇒ (22 × 21 × 21 × 40°)/7 × 360°
⇒ 154 cm 2
∴ The area of the sector is 154 cm 2

78. The Rowlatt Act was passed in _____.
a. 1920
b. 1919
c. 1921
d. 1922

Ans. b
Explanation:
The correct answer is 1919.
The Rowlatt Satyagraha was a national protest against Rowlatt Act introduced in 1919.
The Rowlatt Act was passed on6th February 1919.

79. Which watershed development and management program is being implemented by the central and state governments?
a. Arvary Pani Sansad

b. Desh Sudhar
c. Hariyali
d. Neeru-Meeru

Ans. c
Explanation:
The correct answer is Hariyali.
Hariyaliis a watershed development and management program implemented by the central and state governments.

80. By reducing the selling price of an article by Rs. 50.00, a gain of 5% turns into a loss of 5%. Original selling price is:
a. Rs. 500.00
b. Rs. 525.00
c. Rs. 550.00
d. Rs. 600.00

Ans. b
Explanation:
Given:
SP = Rs. 50
Gain = 5%
Loss = 5%
Calculation:
Let the original selling price be Rs. x
According to the question
⇒ (x × 100)/105 = (x – 50) × 100/95
⇒ 19x = 21x – 1050
⇒ 2x = 1050
⇒ x = Rs. 525
∴ The original selling price is Rs. 525.00

81. How many times has India been elected as non-permanent member of the UN Security Council till Oct, 2020?
a. 10
b. 5
c. 8

d. 4

Ans. c
Explanation:
The correct answer is 8.
India has been elected as a non-permanent member of the UN Security Council8 timestill Oct 2020.

82. Which of the following is in the third trophic level of the food chain?
a. Primary consumers
b. Top consumers
c. Secondary consumers
d. Producers

Ans. c
Explanation:
Food chain:
A food chain shows the feeding relationship between different organisms in a particular environment and/or habitat.
A food chain shows how energy is passed from the sun to producers, from producers to consumers, and from consumers to decomposes such as fungi .
They also show how animals depend on other organisms for food.

83. The Khilafat Movement was led by:
a. Shaukat Ali and Muhammad Ali
b. Shaukat Ali and Armaan Ali
c. Shaukat Ali and Musafir Ali
d. Armaan Ali and Muhammad Ali

Ans. a
Explanation:
The correct answer is Shaukat Ali and Muhammad Ali.
Shaukat Ali and Muhammad Ali led the Khilafat movement in India.

84. when the shadow of a pole of 10 m height is $10\sqrt{3}$ m, angular elevation of the Sun is:

a. 60°
b. 90°
c. 75°
d. 30°

Ans. d
Explanation:
Given:
The shadow of a pole of 10 m height = $10\sqrt{3}$ m
Calculation:
Let the angular elevation of sun = θ
tanθ = Perpendicular/Base
⇒ $\tan\theta = 10/10\sqrt{3}$
⇒ $\tan\theta = 1/\sqrt{3}$
⇒ $\tan\theta = \tan 30°$
⇒ $\theta = 30°$
∴ The angular elevation of the sun is 30°

85. Which country was placed first in the Asian Games held in Jakarta in 2018?
a. India
b. China
c. Australia
d. Japan

Ans. b
Explanation:
The correct answer is China.
China Came out on top with 132 gold medals.

86. Choose the figure that is different from the others.

a. 

b. 

c. 

d. 

Ans. b
Explanation:
The pattern follows here is:
All figures except option 2 have 4 symbols - multiplication, division, square and a circle.
Option 2 have symbols - addition, division, square and a circle.
Hence, ‘ option 2 ’ is the odd one out.

87. Given below is a ‘main statement’ followed by four subsidiary statements. From the given options, choose the ordered pair of subsidiary statements, where the first statement implies the second and the two statements are logically consistent with the main statement.
Main Statement:
You can drive over 60 km/h only on the national highways.
Subsidiary Statements:
A. You are on the national highway.
B. You cannot drive over 60 km/h.
C. You can drive over 60 km/h.
D. You are not on the national highway.
a. DB
b. AB
c. DA
d. CD

Ans. a
Explanation:
The logic followed is:
A. You are on the national highway.
The first statement does not implies the above given statement.

You can drive over 60 km/honlyon the national highways. Here the word only clearly indicates that you are not on the national highway.
B. You cannot drive over 60 km/h.
The first statement implies the above given statement.
You can drive over 60 km/h only on the national highways, which means you are not on the national highway, so you cannot drive over 60 km/h.
C. You can drive over 60 km/h.
The first statement does not implies the above given statement.
The statement clearly mentions that you can drive over 60 km/h only on the national highways, soyou cannot drive over 60 km/h.
D. You are not on the national highway.
The first statement implies the above given statement.
You can drive over 60 km/h only on the national highways. Here the word only clearly indicates that you are not on the national highway.
Hence, ‘ DB ’ is the correct answer.

88. Last year, there were three sections in a competitive exam. Out of them 33 students cleared the cut-off in Section A, 34 students cleared the cut-off in Section B and 32 students cleared the cut-off in Section C. 10 students cleared the cut-off in section A and section B, 9 cleared the cut-off in section B and section C and 8 cleared the cut-off in section A and section C. The number of students who cleared only one section was equal and was 21 for each section. How many students cleared all the three sections?
a. 6
b. 9
c. 8
d. 7

Ans. a
Explanation:
Last year, there were three sections in a competitive exam.
Out of them 33 students cleared the cut-off in Section A, 34 students cleared the cut-off in Section B and 32 students cleared the cut-off in Section C.
10 students cleared the cut-off in section A and section B, 9 cleared the cut-off in section B and section C and 8 cleared the cut-off in section A and section C.
The number of students who cleared only one section was equal and was 21 for each section.

Number of students who cleared all the three sections = Students who cleared the cut-off in section A and section B + Students who cleared the cut-off in section B and section C + Students who cleared the cut-off in section A and section C - The number of students who cleared only one section
= (10 + 8 + 9) - 21
= 27 - 21
= 6
Hence, ‘ 6’ is the correct answer.

89. Five students Radha, Sujit, Mihir, Anshul and Vikas have a total of five books on the subjects of Accountancy, Business Studies, Mathematics, Economics and English, written by authors Jain, Kohli, Das, Sharma and Edwin. Each student has only one book on one of the five subjects.
Jain is the author of the Accountancy book, which is not owned by Vikas or Radha.
Anshul owns the book written by Edwin.
Mihir owns the Mathematics book.
Vikas has the English book, which is not written by Kohli.
The Economics books is written by Sharma.

Identify the author of the Business Studies book.
a. Sharma
b. Jain
c. Edwin
d. Das

Ans. c
Explanation:
Five students - Radha, Sujit, Mihir, Anshul and Vikas.
Five books - on the subjects of Accountancy, Business Studies, Mathematics, Economics and English
Authors - Jain, Kohli, Das, Sharma and Edwin.
Jain is the author of the Accountancy book, which is not owned by Vikas or Radha.
Anshul owns the book written by Edwin.
Mihir owns the Mathematics book.
Vikas has the English book, which is not written by Kohli.

The Economics books is written by Sharma.

Students	Books	Authors
~~Radha,Vikas~~	Accountancy	Jain
	Economics	Sharma
Mihir	Mathematics	
Anshul		Edwin
Vikas	English	~~Kohli~~

From the above table, it is clear that Kohli is the author of Mathematics book and Anshul have Business Studies book, whose author is Edwin.

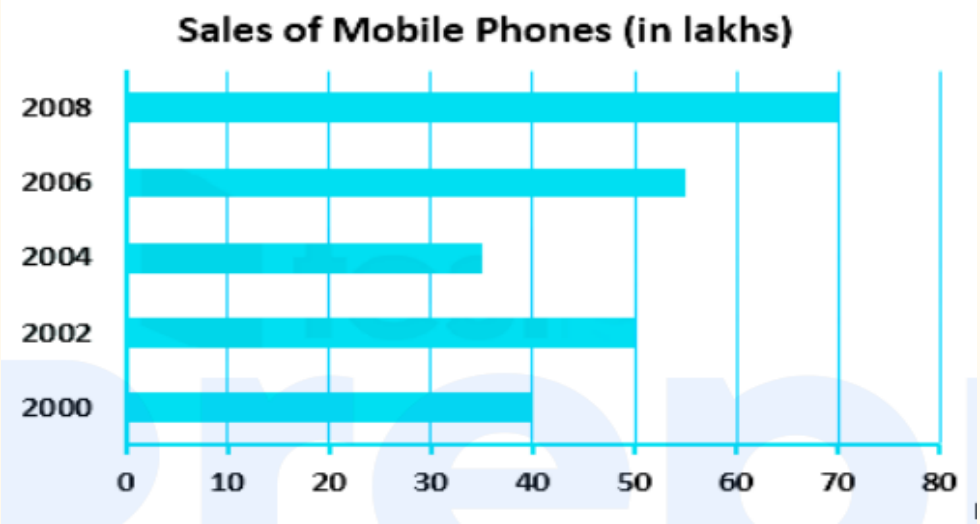
Students	Books	Authors
~~Radha,Vikas~~	Accountancy	Jain
	Economics	Sharma
Mihir	Mathematics	Kohli
Anshul	Business Studies	Edwin
Vikas	English	~~Kohli~~

So, Edwin is the author of the Business Studies book.
Hence, ‘ Edwin ’ is the correct answer.

90. Select the number from among the given options that can replace the question mark (?) in the following series.
4, 14, 60, 248, ?
a. 1020
b. 1016
c. 1008
d. 1012

Ans. c
Explanation:
Given: 4, 14, 60, 248, ?
The logic follows here is:
$4 = 4^1 - 0$
$14 = 4^2 - 2 = 4^2 - 2^1$
$60 = 4^3 - 4 = 4^3 - 2^2$
$248 = 4^4 - 8 = 4^4 - 2^3$
So the series is of the form
$4^n - 2^{n-1}$ where n = 1, 2, 3, 4, ...
So the next term is obtained by putting n = 5
Similarly,
$= 4^5 - 2^4$
= 1024 - 16
= 1008
Hence, 1008 is the correct answer.

91. Based on the bar graph given, calculate the approximate percentage increase in sales of mobile phones from 2004 to 2008.



a. 150%
b. 50%
c. 100%
d. 200%

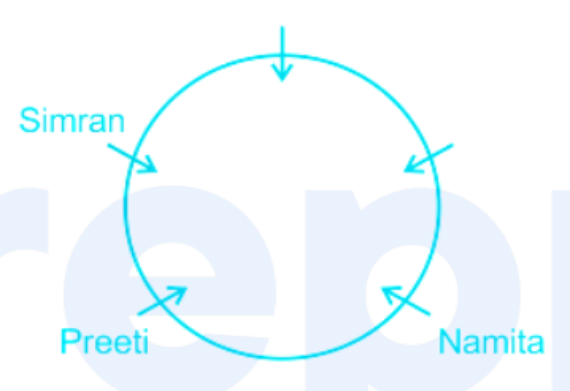
Ans. c
Explanation:
Calculation:
Percentage increase in sales of mobile phones in 2004 = 35
Percentage increase in sales of mobile phones in 2008 = 70
Percentage increase in sales of mobile phones from 2004 to 2008 = (70 – 35)/35 × 100
⇒ 35/35 × 100
⇒ 100%
∴ The required percentage is 100%

92. Read the following information and answer the question that follows.
(i) Five ladies Simran, Vaishali, Namita, Preeti, and Bhawna meet in a hotel for a party. They all sit around a circular table facing the centre of the table.
(ii) Bhawna is sitting to the right of Vaishali.
(iii) Simran is sitting to the left of Preeti.
(iv) Preeti is sitting between Namita and Simran.

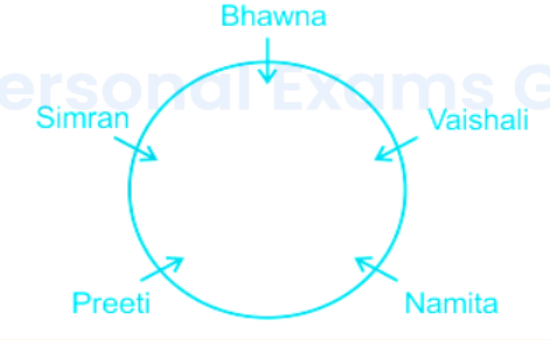
Who is sitting to the right of Namita?
a. Simran

b. Vaishali
c. Bhawna
d. Preeti

Ans. b
Explanation:
Five ladies Simran, Vaishali, Namita, Preeti, and Bhawna meet in a hotel for a party. They all sit around a circular table facing the centre of the table.
(i) Simran is sitting to the left of Preeti.
(ii) Preeti is sitting between Namita and Simran.



(iii) Bhawna is sitting to the right of Vaishali.



Clearly, Vaishali is sitting to the right of Namita.
Hence, ‘ Vaishali ’ is the correct answer.

93. In a certain code language, PAINT is coded as 83527 and SCORE is coded as 49061. How would you code RECENT in the same language?
a. 619127
b. 921235
c. 648497

d. 190985

Ans. a
Explanation:
The logic is:
As PAINT is coded as 83527 and SCORE is coded as 49061.
Drawing the code chart using the above information we get:

P	A	I	N	T
8	3	5	2	7

S	C	O	R	E
4	9	0	6	1

Similarly,

R	E	C	E	N	T
6	1	9	1	2	7

Hence, ‘ 619127 ’ is the correct answer.

94. Four award have been listed, out of which three are alike in some manner and one is different. Select the odd one.
a. Padma Shri
b. Param Vir Chakra

c. Padma Bhushan
d. Padma Vibhushan

Ans. b
Explanation:

Option		Description
1.	Padma Shri	Padma Shri, also spelled Padma Shree, is the fourth-highest civilian award of the Republic of India.
2.	Param Vir Chakra	The Param Vir Chakra is India's highest military decoration, awarded for displaying distinguished acts of valour during wartime.
3.	Padma Bhushan	The Padma Bhushan is the third-highest civilian award in the Republic of India.
4.	Padma Vibhushan	The Padma Vibhushan is the second-highest civilian award of the Republic of India.

Hence, ‘ Param Vir Chakra ’ is the odd one out.

95. Select the option that is related to the third term in the same way as the second term is related to the first term?
Happiness : Sorrow :: Conflict : ?
a. Competition
b. War
c. Harmony
d. Anger

Ans. c

Explanation:
The logic is:
Happiness : Sorrow → Happiness is antonym of Sorrow.
Similarly,
Conflict : ? → Conflict is antonym of Harmony.
Hence, ‘ Harmony ’ is the correct answer.

96. Choose the word that is different from the other three.
a. Devoted
b. Treacherous
c. Faithful
d. Loyal

Ans. b
Explanation:
The logic follows here is:
Except options 2, all are the synonyms of each other, whereas Treacherous is antonyms of Devoted, Faithful, Loyal.

Option		Description
1.	Devoted	Loyal, Faithful
2.	Treacherous	Guilty of or involving betrayal or deception.
3.	Faithful	Loyal
4.	Loyal	Faithful

Hence, ‘ Treacherous ’ is the odd one out.

97. In a certain code, 'best way to win' is written as 'fa ka la ju', 'the way to hell' is written as 'lu la hu fa', 'win of the day' is written as 'na lu fu ka' and 'to sell of night' is written as 'na li ya la'. Which of the following represents 'of the way'?
a. ka lu na
b. llu na ya
c. na ka fa
d. lu na fa

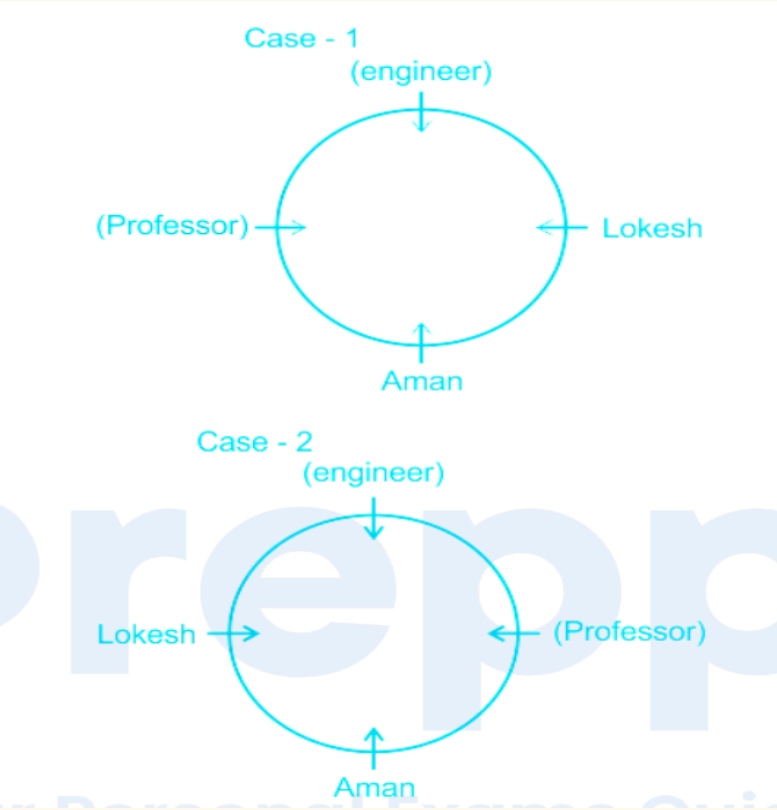
Ans. d
Explanation:
The code of each word is shown below:

The code for of is na.
code for the is lu .
Code for way is fa.
Clearly, "of the way" is represented by "na lu fa".
Hence, ' lu na fa ' is the correct answer.

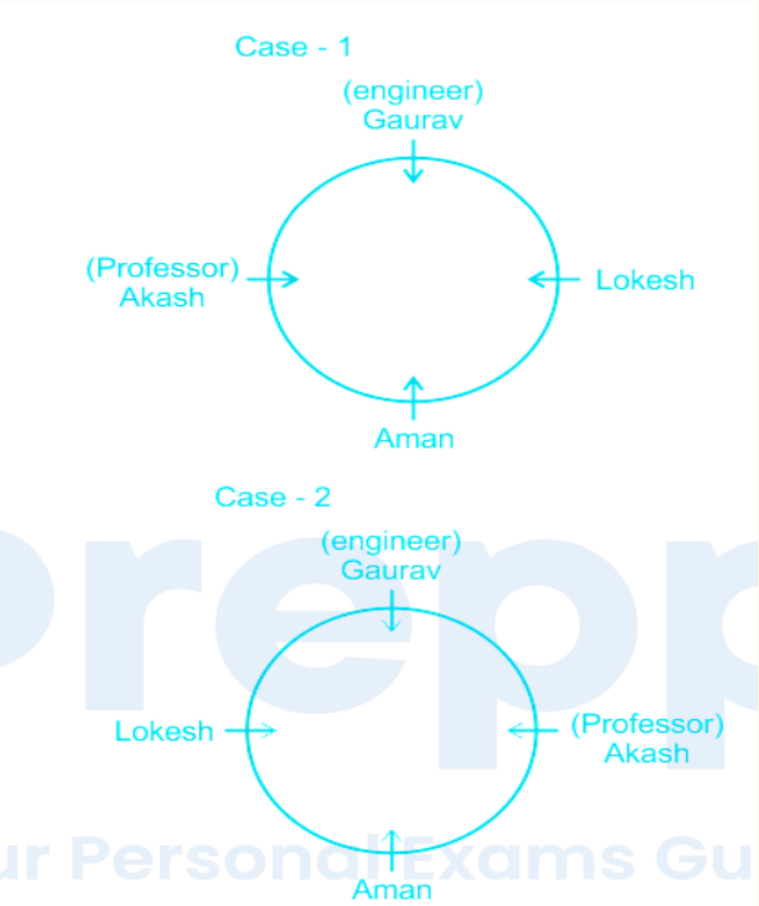
98. Four brothers Aman, Gaurav, Aakash and Lokesh are at their family function sitting across a circular table. Their occupations are Lawyer, Doctor, Professor and Engineer. Lokesh who is not the Professor, starts a conversation about the on-going IPL and after him the Engineer gives a long discourse about the teams that should reach the play-offs. Aman who is sitting across the Engineer and next to the Professor responds to the Engineer's predictions. Akash speaks only at the end. Who is the Professor?

a. Cannot be determined
b. Gaurav
c. Akash
d. Lokesh

Ans. c
Explanation:
Four brothers: Aman, Gaurav, Aakash and Lokesh.
Occupations: Lawyer, Doctor, Professor and Engineer.
(1) Lokesh who is not the Professor, starts a conversation about the on-going IPL and after him the Engineer gives a long discourse about the teams that should reach the play-offs, implies Lokesh is not the Engineer.
(2) Aman who is sitting across the Engineer and next to the Professor responds to the Engineer's predictions. This gives two possible arrangements, as follows



(3) Akash speaks only attend , implies he is not the Engineer. Therefore , t h e final arrangement is as follows:



Now, we can answer that Akash is the professor.
Hence, Akash is the correct answer.

99. In which of the given letter-clusters is the letters skipped between adjacent letters in the order $2^1, 2^2, 2^3$

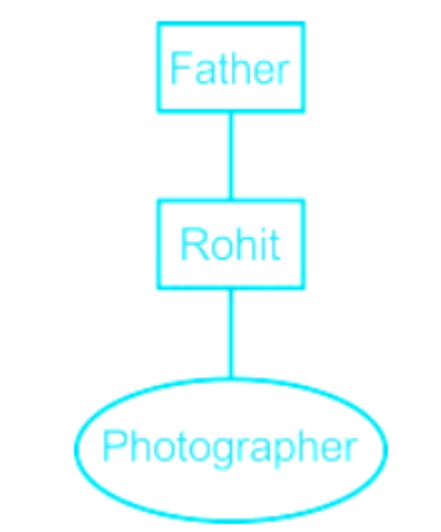
a. AEJS
b. BEJS
c. CFIS
d. EIRZ

Ans. b
Explanation:
According to the alphabetical positions of the letters,
B (C, D) E(F, G, H, I) J(K, L, M, N, O, P, Q, R) S
Clearly, BEJS is the letter-cluster in which the letters skipped between adjacent letters is in the order 2 1, 2 2, 2 3

Hence, ‘ BEJS ’ is the correct answer.

100. Pointing to a photograph, Rohit said, "She is the daughter of the only son of my father." How is Rohit related to the girl in the photograph ?
a. Cousin
b. Uncle
c. Father
d. Brother

Ans. c
Explanation:
Drawing the family tree as the given information:



Clearly, Rohit is father of the girl in the photograph.
Hence, ‘ Father ’ is the correct answer.