HCL

Quantitative aptitude

Problems on ages

1. 10 years ago, Rohit's age was 25% less than the present age of Vicky. The sum of the present ages of Rohit and Raghu is 60 years. The present age of Raghu and Vicky can be:

I. 32, 24

II. 33, 28

III. 26, 32

A -Only II
B -Only II and III
C -Only I and III
D -Only I

Solution

Let the present age of Vicky be 'x' years

Therefore, present age of Rohit = (0.75x + 10) years

Present age of Raghu = 60 – (0.75x – 10) = (50 – 0.75x) years

For I:

Present age of Vicky = 24 years

Therefore, present age of Raghu = 50 – 0.75x = 50 – 18 = 32 years

Therefore, I can be the answer.

For II:

Present age of Vicky = 28 years

Therefore, present age of Raghu = 50 – 0.75x = 50 – 21 = 29 years

Therefore, II cannot be the answer.

For III:

Present age of Vicky = 32 years

Present age of Raghu = 50 – 0.75x = 50 – 24 = 26 years

Therefore, III can be the answer.

Hence, option c.

Percentages

2. There are two persons ‘A’ and ‘B’. ‘A’ spends 20% of his previous income on interiors of his house. His present income is more than his previous income by the same amount as spent on interiors of his house. His present expenditure is equal to the money left after his spending on interiors. The present income of ‘B’ is Rs. 4000 more than that of ‘A’. If ‘B’ spends 75% of his total income and saves Rs. 17500, then find the amount spent by ‘A’ on interiors.

A -Rs. 15000
B -Rs. 11000
C -Rs. 7000
D -Rs. 12000

Solution

Let the present income of ‘A’ be Rs. ‘x’

Therefore, present income of ‘B’ = Rs. (x + 4000)

According to the question,

0.25(x + 4000) = 17500

Or, x + 4000 = 17500/0.25

Or, x = 70000 – 4000

Or, x = Rs. 66000

Therefore, income of ‘A’ in previous year = 66000/1.2 = Rs. 55000

Amount spent by ‘A’ on interiors = 0.20 × 55000 = Rs. 11000

Hence, option b.

Discounts

3. The sum of the cost price of two articles ‘A’ and ‘B’ is Rs. 10000. The cost price of article ‘B’ and the selling price of article ‘A’ are equal. Article ‘A’ and article ‘B’ is marked up by 30% and 40% above their respective cost prices. If the discount offered on article ‘B’ is equal to that of ‘A’, and article ‘B’ is sold for Rs. 7350, then find the discount offered on both the articles.

A -Rs. 350
B -Rs. 200
C -Rs. 450
D -Rs. 250

Solution

Let the cost price of article ‘A’ be Rs. ‘x’.

Therefore, cost price of article ‘B’ and selling price of article ‘A’ = Rs. (10000 – x)

Marked price of article ‘A’ = Rs. 1.3x

Discount offered on article ‘A’ = 1.3x – (10000 – x) = Rs. (2.3x – 10000)

Marked price of article ‘B’ = Rs. 1.4(10000 – x)

Selling price of article ‘B’ = 1.4(10000 – x) – (2.3x – 10000) = Rs. (24000 – 3.7x)

According to the question,

24000 – 3.7x = 7350

Or, 3.7x = 16650

Or, x = 16650/3.7 = Rs. 4500

Therefore, discount offered on each article = (2.3x – 10000) = Rs. 350

Hence, option a.

Profit & loss

4. An article is sold at a loss of 20%. If the cost price of the article had been Rs. _____ less then there would have been a profit of 25%. The marked price of the article will be Rs. _____ if the article is marked up by 30% above its original cost price.

The values given in which of the following options will fill the blanks in the same order in which is it given to make the statement true:

I. 540, 1950

II. 864, 3120

III. 640, 2340

A -None of the above
B -All I, II and III
C -Only I and III
D -Only I and II

Solution

Let the cost price of the article be Rs. ‘x’

Therefore, selling price of the article = Rs. 0.8x

For I:

New cost price = Rs. (x – 540)

Selling price of the article = Rs. 1.25(x – 540)

According to the question,

1.25(x – 540) = 0.8x

Or, 0.45x = 675

Or, x = 675/0.45 = Rs. 1500

Therefore, marked price of the article = 1.3x = Rs. 1950

Therefore, I is true.

For II:

New cost price = Rs. (x – 864)

Selling price of the article = Rs. 1.25(x – 864)

According to the question,

1.25(x – 864) = 0.8x

Or, 0.45x = 1080

Or, x = 1080/0.45 = Rs. 2400

Therefore, marked price of the article = 1.3x = Rs. 3120

Therefore, II is true.

For III:

New cost price = Rs. (x – 640)

Selling price of the article = Rs. 1.25(x – 640)

According to the question,

1.25(x – 640) = 0.8x

Or, 0.45x = 800

Or, x = 800/0.45 = Rs. 1777.77

Therefore, marked price of the article = 1.3x = Rs. 2311.10

Therefore, III is false.

Hence, option d.

Simple interest & compound interest

5. Rihaan has a sum of Rs. 5x with him. He invested 40% of the sum at 30% p.a. simple interest for 5 years. He then invested half of the interest received by him along with the remaining sum at 20% p.a. compound interest for 2 years, compounded annually and received Rs. 9720 as the amount. The amount received at simple interest on Rs. 5x for 2 years at 20% p.a. will be:

I. Rs. (x + 9000)

II. Rs. {(3x/5 + 9600)

III. Rs. (3x + 3000)

A -Only I and II
B -Only III
C -All I, II and III
D -Only I

Solution

Sum invested by Rihaan at simple interest = 0.4 × 5x = Rs. 2x

Therefore, interest received by Rihaan = (2x × 30 × 5)/100 = Rs. 3x

Sum invested at compound interest = 3x + 3x/2 = Rs. 4.5x

According to the question

$4.5x(1 + 20/100)^2 = 9720$

Or, 6.48x = 9720

Or, x = Rs. 1500

Therefore, total sum = 5x = Rs. 7500

Therefore, amount received at simple interest = (7500 × 2 × 20)/100 + 7500 = Rs. (3000 + 7500) = Rs. 10500

For I:

(x + 9000) = Rs. (1500 + 9000) = Rs. 10500

Therefore, I can be the answer.

For II:

{(3x/5) + 9600} = {(3 × 1500)/5 + 9600} = Rs. 10500

Therefore, II can be the answer.

For III:

(3x + 3000) = (3 × 1500 + 3000) = Rs. 7500

Therefore, III cannot be the answer.

Hence, option a.

Volumes

6. The height and radius of the base of the cylinder and a cone is same. The radius of cylinder is 42 cm. If the slant height of the cone is 6√53 cm, then find the curved surface area of a sphere whose diameter is equal to 16 cm more than the height of the cone.

A -2286 cm^2
B -2464 cm^2
C -2592 cm^2

D -2678 cm^2

Solution

Let the radius of the base of the cylinder and the cone be ‘r’ cm

Let the height of the cone and the cylinder be ‘h’ cm

Therefore, $42^2 + h^2 = (6\sqrt{53})^2$

Or, $h^2 = 1908 – 1764$

Or, $h^2 = 144$

Or, $h = 12$ cm

Therefore, radius of the sphere = (12 + 16)/2 = 14 cm

Total surface area of the sphere = $4\pi r^2 = 2464$ cm^2

Hence, option b.

Data interpretation (bar graphs on profit & loss)

(7-8) Directions: Answer the questions based on the information given below.

A shopkeeper has four different bags i.e. A, B, C and D with four different coloured balls namely Red, Green, Blue and Violet in it.

Bag A: Number of blue balls is 20% more than number of red balls, and number of green balls is 80% more than number of red balls. If one ball is drawn from the bag then the probability of getting a violet ball is 2/7. Number of blue balls in the bag is 12.

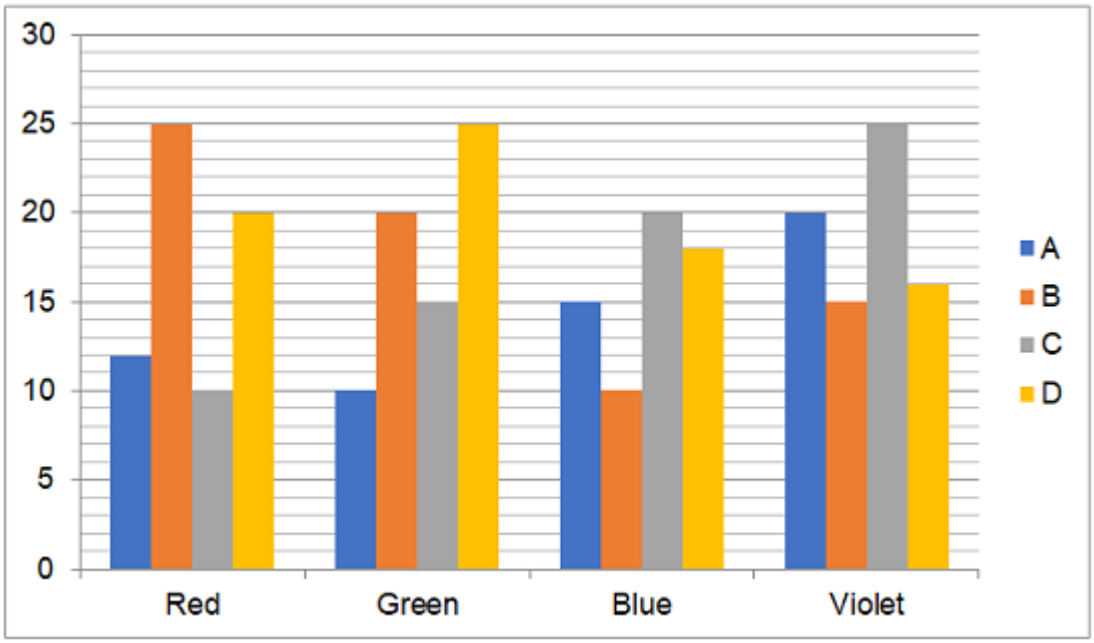
Bag B: The ratio of number of violet balls to number of blue balls is 1:3. The ratio of number of blue balls to number of green balls is 5:4 and the ratio of number of red balls to number of green balls is 5:6. Two balls are taken out of the box and the probability of getting one green and one blue ball is 120/581.

Bag C: Total number of balls is 24 more than total number of balls in bag A. Total number of red and blue balls in the bag is 60% of the total number of balls in the bag. The number of red balls is 100% more than number of blue balls and number of violet balls is 40% less than number of green balls.

Bag D: Number of violet balls is same as the number of blue balls, and 5 less than number of red balls. Total number of balls in bag D is 10 less than total

number of balls in bag C. If one ball is taken out from the bag then the probability of getting a green ball is 2/7.

The bar graph given below shows the cost price (in Rs.) of each coloured ball from each of the four bags.



7.The shopkeeper sold all the balls from bag A, after marking it 85% above the cost price and sold it after giving two successive discounts of 10% and 25%. Find the selling price of all the balls together.

A -Rs. 990
B -Rs. 899
C -Rs. 999
D -Rs. 1099

Solution

Bag A:

Number of blue balls = 12

Number of red balls = 12/1.2 = 10

Number of green balls = 1.8 × 10 = 18

Let the number of violet balls be x

According to question,

$x/(12 + 10 + 18 + x) = 2/7$

$7x = 80 + 2x$

$5x = 80$

$x = 16$

Bag B:

Let us denote number of Red, Green, Blue and Violet balls is R, G, B and V.

According to question,

V:B = 1:3

B:G = 5:4

R:G = 5:6

R:G:B:V = 10:12:15:5

Let number of Red, Green, Blue and Violet balls be 10y, 12y, 15y and 5y respectively.

According to Question,

$({}^{12y}C_1 \times {}^{15y}C_1)/{}^{42y}C_2 = 120/581$

$(12y \times 15y \times 2)/[(42y(42y - 1)] = 120/581$

$y/[14 \times (42y - 1)] = 1/581$

$581y = 588y - 14$

$7y = 14$

$y = 2$

Bag C:

Total number of balls = 24 + 12 + 10 + 18 + 16 = 80

Total number of red and blue balls = 0.6 × 80 = 48

Let number of blue balls be ‘a’

Number of red balls = 2a

So, a + 2a = 48

3a = 48

a = 16

Number of green balls and violet balls = 80 – 48 = 32

Let number of green balls be ‘p’

Number of violet balls = 0.6p

So, p + 0.6p = 32

1.6p = 32

p = 20

For Bag D:

Total number of balls = 80 – 10 = 70

Let number of red balls be ‘z’

Number of violet balls = number of blue balls = z – 5

Let number of green balls is ‘b’

According to question,

b/70 = 2/7

b = 20

And, z + z – 5 + z – 5 = 70 – 20

3z – 10 = 50

3z = 60

z = 20

Balls/Bags	A	B	C	D	Total
Red	10	20	32	20	82
Green	18	24	20	20	82

Blue	12	30	16	15	73
Violet	16	10	12	15	53
Total	56	84	80	70	290

Cost price of all the balls from bag A = 12 × 10 + 18 × 10 + 12 × 15 + 16 × 20 = Rs. 800

Marked price of all the balls = 1.85 × 800 = Rs. 1480

Selling price of all the balls = 0.9 × 0.75 × 1480 = Rs. 999

Hence, option c.

8. What is the total number of balls in all four bags together?

A -290
B -280
C -270
D -260

Solution

Bag A:

Number of blue balls = 12

Number of red balls = 12/1.2 = 10

Number of green balls = 1.8 × 10 = 18

Let the number of violet balls be x

According to question,

x/(12 + 10 + 18 + x) = 2/7

7x = 80 + 2x

5x = 80

x = 16

Bag B:

Let us denote number of Red, Green, Blue and Violet balls is R, G, B and V.

According to question,

V:B = 1:3

B:G = 5:4

R:G = 5:6

R:G:B:V = 10:12:15:5

Let number of Red, Green, Blue and Violet balls be 10y, 12y, 15y and 5y respectively.

According to Question,

$({}^{12y}C_1 \times {}^{15y}C_1)/{}^{42y}C_2 = 120/581$

$(12y \times 15y \times 2)/[(42y(42y - 1)] = 120/581$

$y/[14 \times (42y - 1)] = 1/581$

$581y = 588y - 14$

$7y = 14$

$y = 2$

Bag C:

Total number of balls = 24 + 12 + 10 + 18 + 16 = 80

Total number of red and blue balls = 0.6 × 80 = 48

Let number of blue balls be ‘a’

Number of red balls = 2a

So, a + 2a = 48

3a = 48

a = 16

Number of green balls and violet balls = 80 – 48 = 32

Let number of green balls be ‘p’

Number of violet balls = 0.6p

So, p + 0.6p = 32

1.6p = 32

p = 20

For Bag D:

Total number of balls = 80 – 10 = 70

Let number of red balls be ‘z’

Number of violet balls = number of blue balls = z – 5

Let number of green balls is ‘b’

According to question,

b/70 = 2/7

b = 20

And, z + z – 5 + z – 5 = 70 – 20

3z – 10 = 50

3z = 60

z = 20

Balls/Bags	A	B	C	D	Total
Red	10	20	32	20	82
Green	18	24	20	20	82
Blue	12	30	16	15	73
Violet	16	10	12	15	53
Total	56	84	80	70	290

Total number of balls in all four bags together = 290

Hence, option a.

Wrong no. series

9. The following numbers form a series. Find the odd one out.

165, 174, 149, 198, 73, 246

A -198
B -149
C -174
D -73

Solution

$165 + 3^2 = 174$

$174 – 5^2 = 149$

$149 + 7^2 = 198$

$198 – 11^2 = 77$

$77 + 13^2 = 246$

Therefore, 77 should come in place of 73

Hence, option d.

Missing no. series

10. What will come in place of the question mark (?) in the following series?

45, 90, 22.5, 135, ?, 168.75

A -24.875
B -12.345
C -18.115
D -None of these

Solution

$45 \times 2 = 90$

$90 \div 4 = 22.5$

$22.5 \times 6 = 135$

135 ÷ 8 = 16.875

16.875 × 10 = 168.75

Hence, option e.

Time & work

11. Rishav can complete a work in 24 days. Arun is 20% less efficient than Rishav. Ankit takes 5 days less than Arun to complete the same work alone. Rishav and Arun started the work together and left after completing 90% of the work. The remaining work is completed by Ankit alone. Find the total number of days taken to complete the work.

A -19.5 days
B -18.5 days
C -14.5 days
D -16.5 days

Solution

Time taken by Arun to complete the work alone = 24/0.80 = 30 days

Time taken by Ankit to complete the work alone = 30 – 5 = 25 days

Let the total work = 600 units (L.C.M of 24, 30 and 25)

Efficiency of Rishav = 600/24 = 25 units/day

Efficiency of Arun = 600/30 = 20 units/day

Efficiency of Ankit = 600/25 = 24 units/day

Time taken by Rishav and Arun to complete 90% of the work = 0.90 × 600/(25 + 20) = 12 days

Time taken by Ankit to complete the remaining work alone = 0.10 × 600/24 = 2.5 days

Total time taken = 12 + 2.5 = 14.5 days

Hence, option c.

Partnership

12. Rohit invested Rs. (x + 1200) in a business for 3.5 years. Vinay invested Rs. (2x – 2600) for 2 years in the same business. The respective ratio of the profits received by them is 3:2. Find the sum invested by Vinay in the business.

A -Rs. 7000
B -Rs. 5200
C -Rs. 7200
D -Rs. 5600

Solution

According to the question,

{(x + 1200) × 42:(2x – 2600) × 24} = 3:2

Or, 7(x + 1200) = 6(2x – 2600)

Or, 7x + 8400 = 12x – 15600

Or, 5x = 24000

Or, x = 4800

Therefore, sum invested by Vinay = (2x – 2600) = Rs. 7000

Hence, option a.

Mixtures & allegations

13. A container contains 960 litres of milk, 160 litres of milk is taken out from the container and 480 litres of water is added to the container, then, 160 litres of the mixture taken out from container and 80 litres of water is added to the container, after this, 240 litres of the mixture is taken out from container and equal amount of milk and water is added so the ratio of milk to water in the final mixture becomes 15:11. Find the amount of milk added at last.

A -80 litres
B -120 litres
C -60 litres
D -40 litres

Solution

Amount of milk in container after taking 160 litres milk = 960 – 160 = 800 litres

Ratio of milk and water after adding 480 litres of water = 800:480 = 5:3

Amount of milk gone in 160 litres mixture = (5/8) × 160 = 100 litres

Amount of water gone in 160 litres mixture = (3/8) × 160 = 60 litres

Remaining milk in container = 800 – 100 = 700 litres

Remaining water in container = 480 – 60 = 420 litres

Ratio of milk and water after adding 80 litres of water = 700:(420 + 80) = 700:500 = 7:5

Amount of milk gone in 240 litres mixture = (7/12) × 240 = 140 litres

Amount of water gone in 240 litres mixture = (5/12) × 240 = 100 litres

Remaining milk in container = 700 – 140 = 560 litres

Remaining water in container = 500 – 100 = 400 litres

Let the equal amount of milk and water added finally be ‘x’ litres.

According to question,

(560 + x)/(400 + x) = 15/11

6160 + 11x = 6000 + 15x

4x = 160

x = 40 litres

Hence, option d.

Probability

14. A box contains 12 yellow and 15 pink balls. A ball is randomly drawn from the box and put in a bag which contains violet, pink and yellow balls in the ratio 2:1:2 respectively. Now, a ball is randomly drawn from the bag and the probability that the drawn ball is of yellow colour is 65/162. Find the total number of pink balls in the bag.

A -6
B -4

C -5
D -7

Solution

Let the bag contains ‘2x’ violet, ‘x’ pink and ‘2x’ yellow balls initially.

Case I: A yellow ball is drawn from the box

Probability of drawing yellow ball from the bag = (12/27) × {(2x + 1)/(5x + 1)}

Case II: A pink ball is drawn from the box

Probability of drawing yellow ball from the bag = (15/27) × {(2x)/(5x + 1)}

So, the probability of drawing a yellow ball from the bag = (12/27) × {(2x + 1)/(5x + 1)} + (15/27) × {(2x)/(5x + 1)} = 65/162

{(24x + 12 + 30x)/27(5x + 1) = 65/162

6(54x + 12) = 65(5x + 1)

324x + 72 = 325x + 65

x = 7

So, the total number of pink balls in the bag = 7

Hence, option d.

Missing number series

15. A series is 16, 19, 28, 55, 136

If another series 20, __, __, __, __, m follows the same pattern as the given number series, find the value of m.

A -503
B -413
C -383
D -473

Solution

16 + 3 = 19

19 + 9 = 28

28 + 27 = 55

55 + 81 = 136

Therefore,

20 + 3 = 23

23 + 9 = 32

32 + 27 = 59

59 + 81 = 140

140 + 243 = 383

Therefore, m = 383

Hence, option c.

Reasoning

Logical deduction (statements-arguments)

16. In the question below, an argument is given, followed by three statements. From the options, choose the statements that can combine to produce the argument.

Argument: Zoos are detrimental to animals' physical health.

1. A study of 35 species of carnivores, including brown bears, cheetahs, and lions, found that zoo enclosures were too small for the animals to carry out their normal routines, which led to problems such as pacing and more infant deaths.

2. About 70% of adult male gorillas in North America have heart disease, the leading cause of death among gorillas in captivity, while the condition is almost completely absent in the wild.

3. Because so many diseases can be transmitted from animals to humans, such as Ebola, Hantavirus, and the bird flu, zoos frequently conduct disease surveillance research on captive populations.

A -Only 2

B -Only 1 and 2
C -Only 1 and 3
D -Only 2 and 3

Solution

The given argument claims that zoos are responsible for poor physical health of animals. It can be inferred by putting together 1 and 2: 1 tells us how studies of different carnivore species have shown that zoo enclosures led to problems such as infant deaths. 2 tells us how heart disease is the leading cause of death among captive gorillas, and it is not the case with gorillas in the wild. Thus, (b) is the right answer.

3 is incorrect as it talks about the transmission of diseases from animals to humans, which is not relevant to the given argument.

Logical deduction (statements-arguments)

17. In the question below, an argument is given, followed by three statements. From the options, choose the statements that can combine to produce the argument.

Argument: Vaccines can cause serious and sometimes fatal side effects.

1. The rotavirus vaccine can cause intussusception, a type of bowel blockage that may require hospitalization, in about one per 20,000 babies in the United States.

2. All vaccines carry a risk of a life-threatening allergic reaction (anaphylaxis) in about one per million children.

3. The National Vaccine Information Centre (NVIC) says that vaccines may be linked to learning disabilities, asthma, autism, diabetes, chronic inflammation, and other disabilities.

A -Only 2
B -Only 1 and 2
C -Only 1 and 3
D -All 1, 2 and 3
Solution

The given argument claims that side effects can be caused by vaccines. It can be inferred by putting together 1, 2 and 3: 1 tells us about a particular vaccine that can cause bowel blockage, 2 tells us how there is the risk of an allergic

reaction in all vaccines, and 3 tells us that vaccines are linked to several disabilities, according to NVIC. Thus, (d) is the right answer.

Coded blood relations

18. Directions: Study the following information carefully to answer the questions:

P#Q means P is the daughter of Q

P©Q means Q is the brother of P

P=Q means Q is the sister of P

P&Q means P is the son of Q

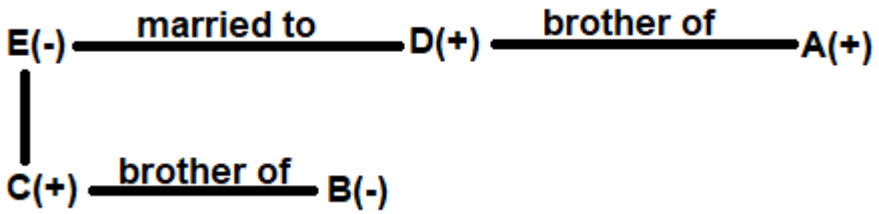
P@Q means P is the mother of Q

Which of the following expression shows that A is the paternal uncle of B, given that A is a male?

A -C&E&B#D©A
B -A@E@B#C©D
C -C&E@B#D©A
D -C#E©A&B

Solution

Expression given in option d i.e. C&E@B#D©A



So, from this it is clear that A is the paternal uncle of B.

Hence, option c.

Data sufficiency on north facing sitting arrangement

19. The question given below consists of two statements numbered I and II given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read all the statements and give answer.

Five students A, B, C, D and E sit in the row facing towards the north direction. What is the position of C with respect to B?

Statement I: B is in the middle from either side and D is at one of the extreme ends of the row.

Statement II: A sits adjacent to both B and E

A -Data in statement I alone is sufficient to answer the question.
B -Data in either both statement I and statement II alone sufficient to answer the question
C -Data in statement II alone is sufficient to answer the question.
D -Data in statement I and II together are not sufficient to answer the question.

Solution

From statement I:

B is in the middle from either side and D is at the extreme end of the row.

Case I: D sits at extreme left end:

D		B		

Case II: D sits at extreme right end:

		B		D

From statement II: A sits adjacent to both B and E

No proper information is given.

From both I and II

Case I: When D sit extreme left end.

D	C	B	A	E

Case II: When D sits at the extreme right end.

E	A	B	C	D

Data in statement I and II together are not sufficient to answer the question.

Hence, option d.

Data sufficiency on distance & direction

20. The question given below consists of two statements numbered I and II given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read all the statements and give answer.

What is the position of Q with respect to T?

Statement I: Q is 5m to the north of P. R is 5m north of S. T is 5m to the east of S.

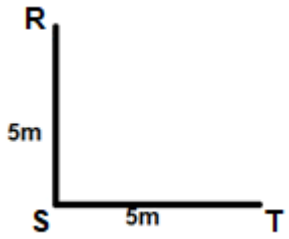
Statement II: R is 5m to the east of Q. U is 10m to the north of T.

A -Data in statement I alone is sufficient to answer the question.
B -Data in either both statement I and statement II alone sufficient to answer the question
C -Data in statement II alone is sufficient to answer the question.
D -Data in both statement I and statement II together is sufficient to answer the question.

Solution

From statement I:

Q is 5m to the north of P. R is to the 5m north of S. T is 5m to the east of S.

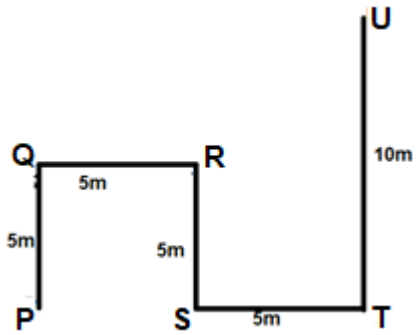


From statement II:

R is 5m to the east of Q. U is 10m to the north of T.

No proper information is given.

From both I and II.



So, from both the statements it is clear that Q is in north west of T.

Data in both statement I and statement II together is sufficient to answer the question.

Hence, option d.

Ordering & ranking

21. Five friends A, B, C, D and E type at different speeds. A types faster than D but slower than B. E types slower than D, but is not slowest. The one who types second fastest types at the speed of 85 word / minute. The one who types second slowest types 45 words / minute.

What is the possible speed of typing the word/minute of D?

A -43 word/minute
B -40 words/minute
C -50 words/minute
D -41 words/minute

Solution

According to the given information:

B > A (85) > D > E (45) > C

Hence, the possible speed of typing of word/minute of D is 50 words/minute.

Hence, option c.

Data sufficiency on days based puzzle

22. The question given below consists of three statements numbered I, II and III given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read all the statements and give answer.

A visitor visits five cities on different days of the week starting from Monday to Friday. He visits only one city in a day. Then to which city does he visit on Thursday?

Statement I: The Visitor visits only one city between city X and city Y, which he visits on Wednesday.

Statement II: He visits city Z immediately before he visits city X. He doesn't visit city D on Wednesday.

Statement III: He visits city T on Monday. Only two cities are visited by him between city U and city I.

A -Data in statement I alone is sufficient to answer the question.
B -Data in either both statement I and statement II or statement III alone is sufficient to answer the question.
C -Data in statements I and II together is sufficient to answer the question.
D -Data in either statement I alone or statement III alone is sufficient to answer the question.

Solution

From statement I:

Visitor visits only one city between Kanpur city X and city Y, which is visited by him on Wednesday.

So, city X is visited by him either on Monday or Friday.

From Statement II:

He visits city Z immediately before he visits city X. he doesn't visit city D on Wednesday.

No proper information is given.

From statement III:

He visits city T on Monday. Only two cities are visited by him between city U and city I.

No proper information is given.

But from I and II it is clear that he visits city Z on Thursday.

Monday	
Tuesday	
Wednesday	Y
Thursday	Z
Friday	X

Hence, option c.

Data sufficiency on stack based puzzle

23. The question given below consists of three statements numbered I, II and III given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read all the statements and give answer.

There are five boxes P, Q, R, S and T of clothes stored in 5 floor shelves one above another such that shelf 1 is the lowermost shelf and shelf number 5 is topmost shelf. Box R is in which shelf?

Statement I: Box S is at the topmost shelf. Box Q is just below the box P but stored in even numbered shelf.

Statement II: Box S is not in even numbered shelf.

Statement III: Box T is not in an even numbered shelf and box S is above the box T.

A -Data in statement I and statement III together but statement II is not sufficient to answer the question.

B -Data in either both statement I and statement II or statement III alone is sufficient to answer the question.

C -Data in statement I and statement II together but statement III is not sufficient to answer the question.

D -Data in either statement I alone or statement III alone is sufficient to answer the question.

Solution

From statement I:

Box S is at the topmost shelf. Box Q is just below the box P but stored in even numbered shelf.

Shelves	Box
5	S
4	
3	P
2	Q
1	

From statement II:

Box S is not in even numbered shelf.

No proper information is given.

From statement III:

Box T is not in an even numbered shelf and box S is above the box T.

So, from both I and III we get the required answer.

Shelves	Box

5	S
4	R
3	P
2	Q
1	T

Hence, option a.

North facing sitting arrangement

24. Six friends P, Q, R, S, T and U sitting in a row facing towards the north. R is sitting exactly between P and T. Q sits immediate right of T and immediate left of S. U does not sit at the right end of the row. What is the position of U with respect to T?

A -Fourth to the left
B -Third to the left
C -Immediate left
D -Second to the left

Solution

According to the given information:

Hence, option b.

Coded distance & direction

(25-26) Directions: Read the information carefully and answer the given questions.

P%Q means P is to the east of Q at the distance of 1m.

P@Q means P is to the west of Q at the distance of 1m.

P$Q means P is to the north of Q at the distance of 1m.

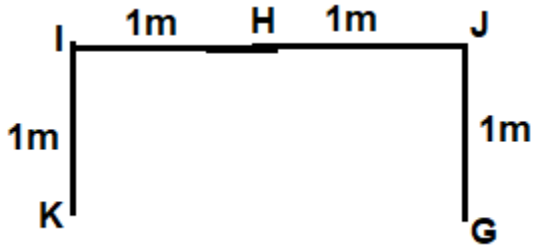
P#Q means P is to the south of Q at the distance of 1m.

25.If K#I@H@J$G, then I is in which direction with respect to J and at what distance?

A -East 2m
B -West 2m
C -North 3m
D -South 4m

Solution

Given K#I@H@J$G



So, I is in west direction with respect to J with a distance of 2m.

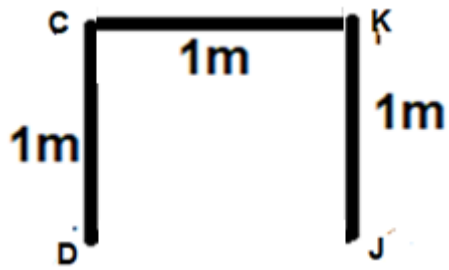
Hence, option b.

26. If J#K%C$D, then D is in which direction with respect to J?

A -West
B -South
C -North
D -Northwest

Solution

Given expression J#K%C$D



Hence, D is in west of J.

Hence, option a.

Square table sitting arrangement

(27-30) Directions: Answer the questions based on the information given below.

Eight persons P, Q, R, S, T, U, V and W are standing around the square shaped table facing towards center in which four are standing at the corner and other four are standing on the middle of the sides of the table. Each person has different number of coins such as 28, 44, 40, 60, 63, 56, 85, 88. Following are the conditions used to determine the number of coins of some person.

I) A"#" means the number of coins with A is twice to that of the person standing to the immediate left of A.

II) A"%" means the number of coins with A is 12 more than that of the coins of person facing A.

III) A"@" means the number of coins with A is the odd multiple of 9.

P has 25 coins less than R, who is standing to the immediate right of P. W is facing P and has 25 coins more than the person standing to immediate right of W. T is adjacent to R and U is standing adjacent to P. S neither stands adjacent to V nor adjacent to U, who stands at the middle side of the table. It is known that:

1.U"#"

2.T"%"

3.Q"@"

27. What is the difference between the number of coins of Q and P?

A -7
B -4

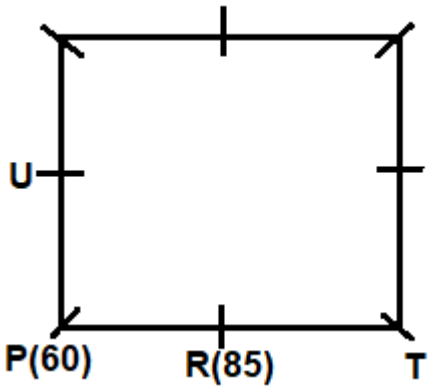
C -2
D -3

Solution

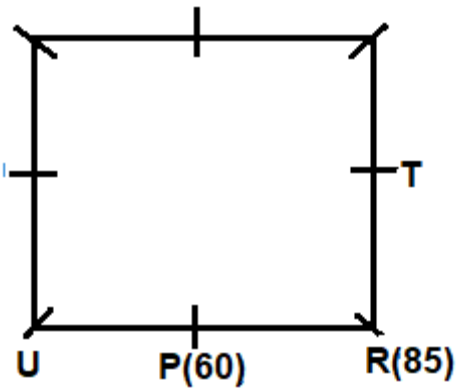
P has 25 coins less than R, who is standing to the immediate right of P. Q"@" which means Q has 63 coins. Hence, P has 60 coins and R has 85 coins.

W is facing P and has 25 coins more than the person standing to immediate right of W, which means W has 88 coins and standing immediate left of Q who has 63 coins.

Case I: When P stands at the corner of the table.



Case II: When P stands at the middle of the table.



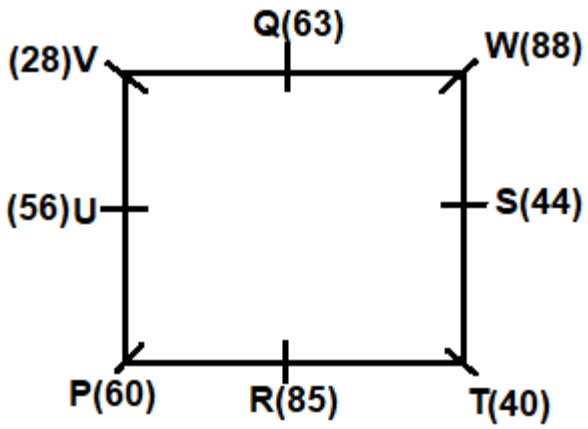
But U can’t stand at the corner of the table so, case II is invalid.

1.U"#"- means person standing immediate left of U has half the number of coins than U.

2.T"%"- means person facing T has 12 less coins than T.

So, U definitely has 56 coins so that person standing immediate left of U has 28 coins and that person also standing opposite to T which means T has 40 coins.

The final arrangement is as follows:



Q has 63 coins and P has 60 coins so the difference is 3.

Hence, option d.

28. Who stands second to the right of T?

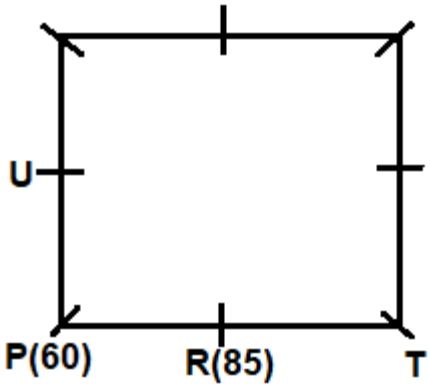
A -The one who has 44 coins
B -The one who has 56 coins
C -The one who has 40 coins
D -The one who has 88 coins

Solution

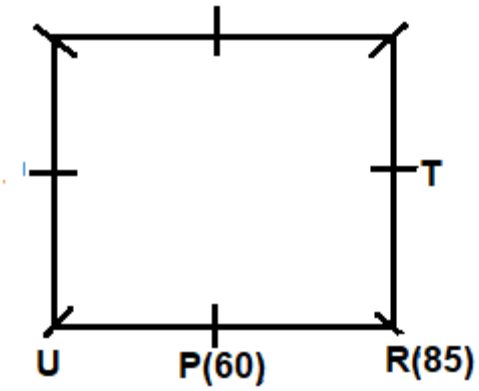
P has 25 coins less than R, who is standing to the immediate right of P. Q"@" which means Q has 63 coins. Hence, P has 60 coins and R has 85 coins.

W is facing P and has 25 coins more than the person standing to immediate right of W, which means W has 88 coins and standing immediate left of Q who has 63 coins.

Case I: When P stands at the corner of the table.



Case II: When P stands at the middle of the table.



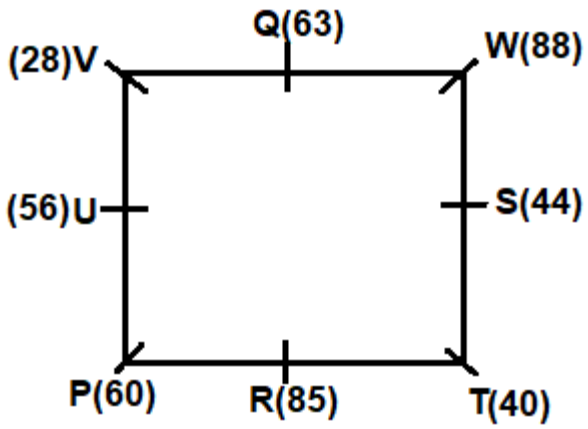
But U can’t stand at the corner of the table so, case II is invalid.

1.U"#"- means person standing immediate left of U has half the number of coins than U.

2.T"%"- means person facing T has 12 less coins than T.

So, U definitely has 56 coins so that person standing immediate left of U has 28 coins and that person also standing opposite to T which means T has 40 coins.

The final arrangement is as follows:



The one who has 88 coins stands second to the right of T.

Hence, option d.

29. How many coins does S have?

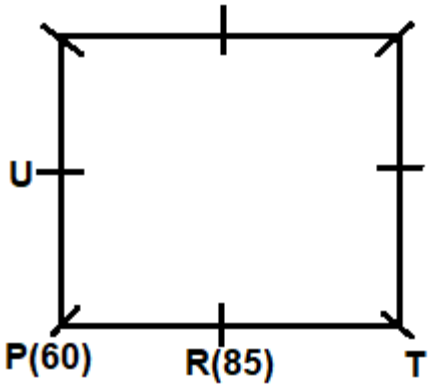
A -88
B -85
C -44
D -56

Solution

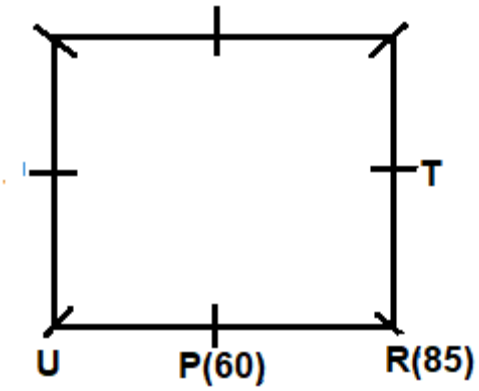
P has 25 coins less than R, who is standing to the immediate right of P. Q"@" which means Q has 63 coins. Hence, P has 60 coins and R has 85 coins.

W is facing P and has 25 coins more than the person standing to immediate right of W, which means W has 88 coins and standing immediate left of Q who has 63 coins.

Case I: When P stands at the corner of the table.



Case II: When P stands at the middle of the table.



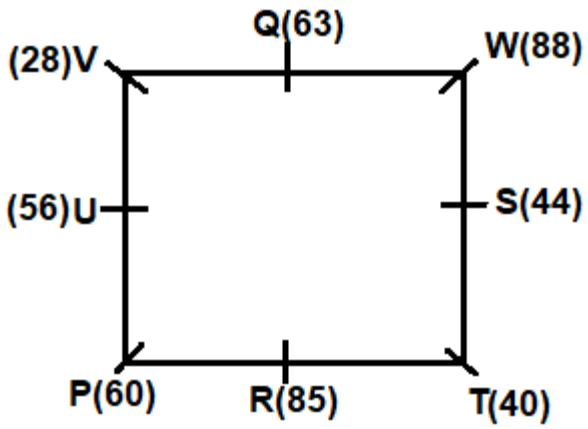
But U can’t stand at the corner of the table so, case II is invalid.

1.U"#"- means person standing immediate left of U has half the number of coins than U.

2.T"%"- means person facing T has 12 less coins than T.

So, U definitely has 56 coins so that person standing immediate left of U has 28 coins and that person also standing opposite to T which means T has 40 coins.

The final arrangement is as follows:



S has 44 coins.

Hence, option c.

30. Which of the following statement is correct about V?

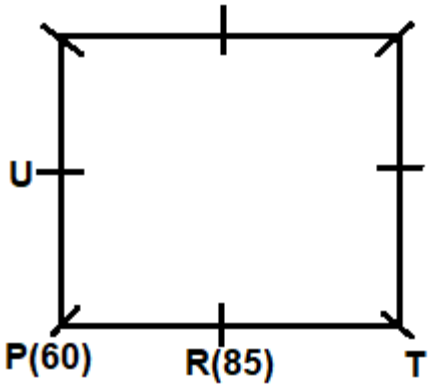
A -V has more coins than T
B -V stands opposite to R
C -V stands second to the left of P
D -V has more coins than S

Solution

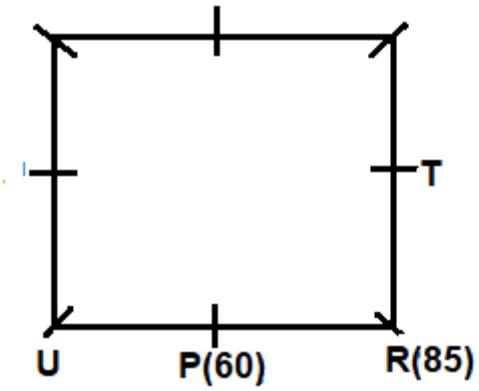
P has 25 coins less than R, who is standing to the immediate right of P. Q"@" which means Q has 63 coins. Hence, P has 60 coins and R has 85 coins.

W is facing P and has 25 coins more than the person standing to immediate right of W, which means W has 88 coins and standing immediate left of Q who has 63 coins.

Case I: When P stands at the corner of the table.



Case II: When P stands at the middle of the table.



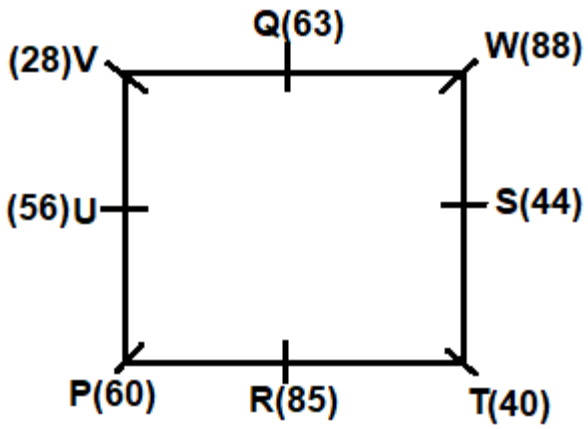
But U can’t stand at the corner of the table so, case II is invalid.

1.U"#"- means person standing immediate left of U has half the number of coins than U.

2.T"%"- means person facing T has 12 less coins than T.

So, U definitely has 56 coins so that person standing immediate left of U has 28 coins and that person also standing opposite to T which means T has 40 coins.

The final arrangement is as follows:



V stands second to the left of P.

Hence, option c.

English

Choose grammatically inappropriate words

31. In the question below, two sentences are given, each with four words highlighted in bold. From the options, choose the combination of words that are grammatically or contextually inappropriate in the sentence.

1. He seemed half **famished**, and **devoted** some slices of excellent ham, which I had put in my guide's **knapsack**, **wolfishly**.

2. Scotland's **beleaguered** industrial sector is still **ensuring** a **combination** of business failures and **cutbacks** on capital expenditure, according to new figures due out tomorrow.

A -famished, wolfishly, ensured
B -devoted, beleaguered
C -devoted, ensuring
D -knapsack, cutbacks

Solution

DEVOTED and ENSURING are inapt. 1 - the sentence tells us how he seemed famished (starving) and consumed wolfishly (hungrily) the ham which the speaker had put in his/ her guide’s knapsack (bag). DEVOTED means allocated, which is inapt; it should be replaced with DEVOURED. 2 - the sentence tells us

how Scotland's beleaguered (troubled) industrial sector is still suffering a combination (mix) of business failures and cutbacks (reductions) on capital expenditure, according to the new figures. ENSURING means making certain of something, which is inapt here; it should be replaced with ENDURING (suffering). Thus, (c) is the right answer.

Choose grammatically inappropriate words

32. In the question below, two sentences are given, each with four words highlighted in bold. From the options, choose the combination of words that are grammatically or contextually inappropriate in the sentence.

1. Tolerance was an **inherent prospect** of Andalusian society, and from this, incredible **advances** in art, architecture, and technology were **achieved**.

2. Eastern mystical philosophies such as
Buddhism **promote** an **attitude** of **acceptance** of suffering and difficulties which are an **invincible** part of life.

A -inherent, prospect, promote
B -prospect, invincible
C -advances, attitude
D -achieved, acceptance, invincible

Solution

1 - the sentence tells us how tolerance was an inherent (innate) feature of Andalusian society, and from this, incredible advances (progress) in several fields was achieved (accomplished). PROSPECT means likelihood and will be inapt here; replace it with ASPECT (feature). 2 - the sentence tells us how certain philosophies promote (propagate) an attitude (mindset) of acceptance (endurance) of suffering and troubles, which are an avoidable part of life. INVINCIBLE means infallible, and will be inapt here; INEVITABLE means inescapable and will be more suitable here. Thus, (b) is the right answer.

Error location

33. In the question below, a sentence is given divided into 3 parts, out of which one or more parts may contain an error. From the options, choose the combination of parts that need to be replaced with the phrases provided below. In case the sentence is correct as it is, and needs no correction, choose (e).

Strategic located anti-poaching camps (A)/ that serves as excellent deterrents to poachers and smugglers (B)/ are indispensable in all our national parks and wildlife sanctuaries. (C)

1. Strategically located anti-poaching camps

2. that serve as excellent deterrents to poachers and smugglers

3. Is indispensable in all our national parks and wildlife sanctuaries.

A -Only A and B
B -Only B and C
C -Only A and C
D -All A, B and C

Solution

A - replace the adjective STRATEGIC with the adverb STRATEGICALLY as it is being used to modify the adjective LOCATED. 1 can replace A. B - replace the singular verb SERVES with the plural SERVE as the subject CAMPS is plural. 2 can replace B. C - no error. Thus, (a) is the right answer.

Error location

34. In the question below, a sentence is given divided into 3 parts, out of which one or more parts may contain an error. From the options, choose the combination of parts that need to be replaced with the phrases provided below. In case the sentence is correct as it is, and needs no correction, choose (e).

Little nations have ever existed, who have evinced (A)/ more indomitable courage or hardihood, or shown (B)/ more devote to the spirit of independence than the Iroquois. (C)

1. Few nations have ever existed, who have evinced

2. more indomitable courage or hardihood, or showed

3. more devotion to the spirit of independence than the Iroquois.

A -Only A and B
B -Only B and C
C -Only A and C
D -All A, B and C

Solution

A - replace LITTLE with FEW as the former is used to modify uncountable nouns while the latter is used to modify countable ones. Here, NATIONS is countable, so FEW will be used. 1 can replace A. B - no error. C - replace the verb DEVOTE with DEVOTION as the adjective MORE will take a noun after it. 3 can replace C. Thus, (c) is the right answer.

Error location

35. In the question below, a sentence is given divided into 3 parts, out of which one or more parts may contain an error. From the options, choose the combination of parts that need to be replaced with the phrases provided below. In case the sentence is correct as it is, and needs no correction, choose (e).

Aitken professes to be astounded by both the (A)/ explanation and the corresponding public response, (B)/ considering them examples of invincible American provincialism. (C)

1. Aitken professed to be astounded by both the

2. explanation and the corresponding public respond,

3. considering they examples of invincible American provincialism.

A -Only A and B
B -Only B and C
C -Only A and C
D -No correction

Solution

The sentence is grammatically correct and free of error. Thus, (d) is the right answer.

Error location

36. In the question below, a sentence is given divided into 3 parts, out of which one or more parts may contain an error. From the options, choose the combination of parts that need to be replaced with the phrases provided below. In case the sentence is correct as it is, and needs no correction, choose (e).

Her supporters have lodge a petition of mercy (A)/ and are hoping the government will used (B)/ its royal prerogative to granting clemency and release her. (C)

1. Her supporters have lodged a petition of mercy

2. and are hoping the government will use

3. its royal prerogative to grant clemency and release her.

A -Only A and B
B -Only B and C
C -Only A and C
D -All A, B and C

Solution

A - replace the base form verb LODGE with LODGED as the present perfect tense construction HAVE + VERB will take the past participle form of the verb. 1 can replace A. B - replace the second form verb USED with USE as the modal verb WILL will take the base form of the main verb that follows it. 2 can replace B. C - replace the continuous form verb GRANTING with GRANT as the infinitive construction TO + VERB will take the base form of the verb. 3 can replace C. Thus, (d) is the right answer.

Para jumbled sentences

37. Directions: In the question given below, a set of five sentences is given, four of which when properly sequenced, form a coherent paragraph. One of the sentences does not belong to the paragraph. Arrange the sentences in the correct sequence, and answer the questions.

P. At the same time, the increasing importance placed on individual well-being contributed to changes in conventional attitudes towards marriage and sexuality, reproduction and child rearing, and civil rights.

Q. Although the whole field of applied ethics as current understood is a fairly recent phenomenon, there have been discussions of moral issues since ancient times.

R. Bioethics emerged as a distinct field of study in the early 1960s.

S. It was influenced not only by advances in the life sciences, particularly medicine, but by the significant cultural and societal changes taking place at the time, primarily in the West.

T. The perfection of certain lifesaving procedures and technologies, such as organ transplantation and kidney dialysis, required medical officials to make difficult decisions about which patients would receive treatment and which would be allowed to die.

Which of the following sentences do NOT belong to the main theme of the paragraph?

A -P
B -Q
C -T
D -R

Solution

RSTP is the final order. R begins the paragraph by introducing the field which is discussed - bioethics. It tells us when this field emerged. S follows by telling us what this field was influenced by. It mentions advances in life sciences as well as societal and cultural changes as responsible factors. TP follow as a pair - T gives examples of some of these advances in life sciences, and P tells us the societal and cultural changes.

Q is the odd sentence as it talks about the broader field of applied ethics rather than the field of bioethics, which is discussed in the passage. Thus, (b) is the right answer.

Para jumbled sentences

38. Directions: In the question given below, a set of five sentences is given, four of which when properly sequenced, form a coherent paragraph. One of the sentences does not belong to the paragraph. Arrange the sentences in the correct sequence, and answer the questions.

P. At the same time, the increasing importance placed on individual well-being contributed to changes in conventional attitudes towards marriage and sexuality, reproduction and child rearing, and civil rights.

Q. Although the whole field of applied ethics as current understood is a fairly recent phenomenon, there have been discussions of moral issues since ancient times.

R. Bioethics emerged as a distinct field of study in the early 1960s.

S. It was influenced not only by advances in the life sciences, particularly medicine, but by the significant cultural and societal changes taking place at the time, primarily in the West.

T. The perfection of certain lifesaving procedures and technologies, such as organ transplantation and kidney dialysis, required medical officials to make difficult decisions about which patients would receive treatment and which would be allowed to die.

Which of the following parts of statement S contains an error?

A -It was influenced not only by advances
B -in the life sciences, particularly medicine, but by
C -the significant cultural and societal changes
D -taking place at the time, primarily in the West.

Solution

In B, insert ALSO after BUT, as the correlative conjunction pair NOT ONLY is followed by BUT ALSO in the second clause. Thus, (b) is the right answer.

Para jumbled sentences

39. In the question below, three idioms are given, each with a case that may or may not describe a situation where the idiom can be contextually used. From the options, choose the one that provides the combination of situations in which the given idiom can be used correctly.

1. A second bite at the cherry

A. Even though Roger had consistently failed to meet deadlines, the manager decided to let him work on an important assignment.

2. Another nail in one's coffin

B. After a series of policies that did not yield successful results, the minister's insensitive speech towards the farmer suicides lost him the little popularity he had left.

3. At the end of one's rope

C. The influenza infection was too much for his weakened immune system to cope with, and he soon succumbed to it.

A -Only A and B
B -Only B and C
C -Only A and C
D -All A, B and C

Solution

A SECOND BITE AT THE CHERRY means a second chance. A is correct as the sentence talks about how Roger was given a second chance even after he failed earlier.

ANOTHER NAIL IN ONE'S COFFIN means something that adds to someone's problems. B is correct as it talks about how the minister's speech added to the problems that were already existing, and was responsible for his remaining loss of popularity.

AT THE END OF ONE'S ROPE means having no patience or energy to cope with something. C is correct as the sentence talks about how a disease led to the ultimate death of someone. Thus, (d) is the right answer.

Phrasal verbs/idioms

40. In the question below, three idioms are given, each with a case that may or may not describe a situation where the idiom can be contextually used. From the options, choose the one that provides the combination of situations in which the given idiom can be used correctly.

1. Back to the salt mines

A. After a two-week-long vacation, I realised I had to go back to work and start working on a new project.

2. Bull in a china shop

B. He is very irresponsible in spending money; just last week, he gambled away his life savings and incurred massive losses.

3. Bottom of the barrel

C. Since all the best players had been selected for other matches, we had to make do with whoever volunteered.

A -Only A and B
B -Only B and C
C -Only A and C
D -All A, B and C

Solution

BACK TO THE SALT MINES means to rejoin work after a break; A is correct as it talks about how the speaker had to rejoin work after a vacation.

BULL IN A CHINA SHOP refers to a clumsy person; B is incorrect as it talks about how he was reckless and irresponsible in spending money.

BOTTOM OF THE BARREL means low-quality choices; C is correct as it talks about how they had to select whichever people volunteered as the best players were not available.

Thus, (c) is the right answer.

Phrasal verbs/idioms

41. In the question below, three idioms are given, each with a case that may or may not describe a situation where the idiom can be contextually used. From the options, choose the one that provides the combination of situations in which the given idiom can be used correctly.

1. In the cards

A. I think I will be selected for this job as I answered all the questions in the interview fairly confidently.

2. Wet one's whistle

B. The teacher asked the children to come back to the classroom and drink something as they had been playing outside for over an hour.

3. Pull the plug on (something)

C. We have planned to terminate our project in Taiwan as it is not yielding any successful results.

A -Only A and B

B -Only B and C
C -Only A and C
D -All A, B and C

Solution

IN THE CARDS to be likely to happen; A is correct as the sentence tells us how the speaker believes that he/ she will be selected for the job. WET ONE'S WHISTLE means to drink something; B is correct as it tells us how the children were told to drink water after playing. PULL THE PLUG ON (SOMETHING) means to end something; C is correct as it tells us how they had planned to finish their project as it was not bringing results. Thus, (d) is the right answer.

Phrasal verbs/idioms

42. In the question below, three idioms are given, each with a case that may or may not describe a situation where the idiom can be contextually used. From the options, choose the one that provides the combination of situations in which the given idiom can be used correctly.

1. Green around the gills

A. Ever since the manager praised Jim's work, Paul has been feeling jealous.

2. Sharp as a tack

B. Even though my grandfather is in his nineties, he is still very quick when it comes to calculations.

3. House of correction

C. At the young age of twenty-three, he was arrested for petty crimes and spent over two years in prison.

A -Only A and B
B -Only B and C
C -Only A and C
D -All A, B and C

Solution

GREEN AROUND THE GILLS means unwell; A is incorrect as it talks about how Paul was feeling jealous.

SHARP AS A TACK means very quick or intelligent; B is correct as it talks about the speaker's grandfather and his ability to calculate fast.

HOUSE OF CORRECTION means prison; C is correct as it talks about how he spent a few years in prison.

Thus, (b) is the right answer.

Reading comprehension

(43-45) Directions: Read the following passage carefully and answer the questions.

We frequently hear that drinking a small amount of coffee can be healthy. This always comes back to the evidence that some coffee-drinking is a common behavior among long-lived, healthy people across populations. News stories tend to interpret this evidence optimistically, reporting that coffee may be good for you. _____in reality, it might just be an interesting correlation. Randomized, controlled trials on nutrition are extremely difficult to conduct, as the effects of dietary changes are complex and often take years, if not a lifetime, to reveal themselves. Those who claim that coffee is healthy tend to point to its high level of antioxidants. But antioxidant supplements have not been proven to correlate with health or longevity. Antioxidants represent a vast spectrum of substances. Vitamin E is an antioxidant, and taking vitamin-E supplements has been shown to increase men's risk of prostate cancer.

If coffee does have an effect on longevity, it is likely a result of something more global than the potential effect of antioxidants—such as the fact that constant exposure to caffeine, even at low levels, suppresses appetite (in a world where most people eat more than is ideal). Or that it encourages social interaction—it inclines us to go out and do things with people—which itself is generally beneficial to health. These are legitimately positive results. But as with all chemicals, the comprehensive effect of caffeine on our health depends on how, and how much, we use it.

43. Which of the following statements represent author's view?

1. Coffee is neither beneficial nor harmful to the health of an individual.

2. The popular perception regarding coffee being healthy and having an impact on longevity has not been backed by any scientific evidence yet.

3. There is a correlation between coffee and lifestyle of an individual.

A -Only 2

B -Only 2 and 3
C -Only 1 and 3
D -Only 1 and 2

Solution

(a) is the right answer. Refer to the lines: *News stories tend to interpret this evidence optimistically, reporting that coffee may be good for you. In reality, it might just be an interesting correlation.* The passage states that it is very difficult to prove that coffee is healthy or has an impact on longevity.

(1) is incorrect. The information given in the passage is insufficient for us to ascertain whether the author will agree with the statement.

(3) is incorrect. The passage does not discuss lifestyle.

44. Which property of coffee makes people believe that it is good for health?

1. It leads to a loss of appetite.

2. It leads to greater social interaction.

3. It has a high level of antioxidants

A -Only 2
B -Only 1
C -Only 3
D -Only 1 and 2

Solution

(c) is the right answer. Refer to the lines: *Those who claim that coffee is healthy tend to point to its high level of antioxidants.* Thus, the presence of high level of antioxidants makes people believe that it is good for health. Both (1) and (2) are the impacts of coffee consumption and not its property.

45. Which of the following connectors can fit in the blank?

A -Moreover
B -Since
C -However

D -Furthermore

Solution

(c) is the right answer. The previous sentence talks about how the new stories present coffee as a beverage that leads to a longer life. The sentence containing the blank states that it may just be a correlation and there can be a lot of factors that lead to longevity. Thus, it contrasts the information given in the previous sentence. HOWEVER can be used to link contrasting statements.

MOREOVER and FURTHERMORE are used to provide additional information.

SINCE is used to indicate a cause-effect relationship.

General Awareness

Famous rivers

46. Mahanadi River originates from which state?

A -Uttarakhand
B -Chhattisgarh
C -Odisha
D -Tamil Nadu

Solution

The Mahanadi is a major river in East Central India. Mahanadi is also known for the 'Hirakud Dam'. The river flows through the states of Chhattisgarh and Odisha. It originates from Sihawa Mountain in Chhattisgarh.

Important organisations

47. National Geophysical Research Institute (NGRI) is located at which place?

A -Bengaluru
B -New Delhi
C -Dehradun
D -Hyderabad
Solution

In a bid to understand and assess the environmental damage and help policymakers to devise a strategy, CSIR- NGRI (Council of Scientific & Industrial Research- National Geophysical Research Institute), based in Hyderabad, Telangana, has released the first ever, 'Geochemical Baseline Atlas of India'.

48. Constructed by the Rail Vikas Nigam Limited (RVNL) Indian Railway Institute of Financial Management (IRIFM) has been set up at _____.

A -Mumbai
B -Hyderabad
C -Delhi
D -Bhubaneswar

Solution

Constructed by the Rail Vikas Nigam Limited (RVNL) Indian Railway Institute of Financial Management (IRIFM) has been set up at Hyderabad, Telangana.

49. Who among the following Indian playback singers has been honored by University of Salford in Greater Manchester, England?

A -Sonu Nigam
B -Asha Bhosle
C -Shreya Ghoshal
D -Lata Mangeshkar

Solution

University of Salford in Greater Manchester, England honored Indian playback singer Asha Bhosle with an honorary Doctorate of Arts degree in recognition of her to the field of music & her role in inspiring future generations to participate in the arts and media.

50. 'Veer Savarkar International Airport' is located at which place?

A -Jaipur
B -

Raipur

C -Port Blair

D -Puducherry

Solution

Veer Savarkar International Airport, also known as Port Blair Airport, is a customs airport located 2 km south of Port Blair and is the main airport of the Andaman and Nicobar Islands of India.

Computers (technical)

Constants

51. Which of the following statement is false?

a) Constant variables need not be defined as they are declared and can be defined later

b) Global constant variables are initialized to zero

c) const keyword is used to define constant values

d) You cannot reassign a value to a constant variable

Answer: a

Explanation: Since the constant variable has to be declared and defined at the same time, not doing it results in an error.

Constants

52. What will be the output of the following C code?

```
#include <stdio.h>
void main(
{
```

```
    int const k = 5;
        k++;
        printf("k is %d", k);
}
```

a) k is 6

b) Error due to const succeeding int

c) Error, because a constant variable can be changed only twice

d) Error, because a constant variable cannot be changed

Answer: d

Explanation: Constant variable has to be declared and defined at the same time. Trying to change it results in an error.

Output:
$ cc pgm12.c

pgm12.c: In function ‘main’:

pgm12.c:5: error: increment of read-only variable ‘k’

Break & continue

53. Which keyword is used to come out of a loop only for that iteration?

a) break

b) continue

c) return

d) none of the mentioned

Answer: b

Explanation: None.

For loop

54. What will be the output of the following C code?

```
1.  #include <stdio.h>
2.  void main()
3.  {
4.      int k = 0;
5.      for (k)
6.          printf("Hello");
7.  }
```

a) Compile time error

b) hello

c) Nothing

d) Varies

Answer: a

Functions

55. Can we use a function as a parameter of another function? [Eg: void wow(int func())].

a) Yes, and we can use the function value conveniently

b) Yes, but we call the function again to get the value, not as convenient as in using variable

c) No, C does not support it

d) This case is compiler dependent

Answer: c

Static variables

56. Which of the following cannot be static in C?

a) Variables

b) Functions

c) Structures

d) None of the mentioned

Answer: d

Static variables

57. Which of following is not accepted in C?

a) static a = 10; //static as

b) static int func (int); //parameter as static

c) static static int a; //a static variable prefixed with static

d) all of the mentioned

Answer: c

String operations

58. which of the following function returns a pointer to the located string or a null pointer if string is not found.

a) strtok()

b) strstr()

c) strspn()

d) strrchr()

Answer: b

Explanation: The strstr() function is used to return a pointer to the located string, or if string is not found a null pointer is returned.

Error handling

59. _____ tells the compiler that this data is defined somewhere and will be connected with the linker.

a) errno

b) extern

c) variable

d) yvals

Answer: b

Explanation: The C library macro extern int errno is set by system calls and some library functions in the event of an error to indicate if anything went wrong.

Mathematical operations

60. If the result overflows, the function returns the value of the macro HUGE_VAL, carrying the same sign except for the _____ function as the correct value of the function.

a) sin

b) cos

c) cosec

d) tan

Answer: d

Explanation: If the result overflows i.e the magnitude of the result is too large to be represented in an object of the specified type, the function returns the value of the macro HUGE_VAL, with the same sign except for the tan function as the correct value of the function.

String operations

61. What will be the output of the following C code?

```
const char str1[] = "abcdef";
const char str2[] = "fgha";
char *mat;
mat= strpbrk(str1, str2);
if(mat)
printf("First matching character: %c\n", *mat);
else
printf("Character not found");
```

a) g

b) a

c) h

d) f

Answer: d

Explanation: The strpbrk() function is used to locate the first occurrence in the string str1 of any character from the string str2.

Mathematical operations

62. For the given math function, an error occurs if the arguments are not in the range [-1, +1].

double acos(double x);

a) range error

b) domain error

c) no error

d) domain and range error

Answer: b

Explanation: The acos() function is used to compute the principal value of the inverse of cosine of x. A domain error occurs for arguments not in the range [-1, +1].

Error handling

63. What will be the output of the following C code?

```
errno = 0;
y = sqrt(2);
if(errno == EDOM)
printf(&amp;quot;Invalid value\n&amp;quot;);
else
printf(&amp;quot;Valid value\n&amp;quot;);
```

a) Invalid value

b) Valid value

c) No output

d) Compile error

Answer: b

Explanation: The C library macro EDOM represents a domain error, which occurs if an input argument is outside the domain, over which the

mathematical function is defined and errno is set to EDOM.

String operations

64.What will the following C code do?

```
char * strrchr(const char *s, int c )
char ch = c;
char *sc;
for(sc = NULL; ; ++s)
if(*s == ch)
SC = 9;
i f (*s =='\O' )
return (( char *) s);
```

a) find last occurrence of c in char s[ ].

b) find first occurrence of c in char s[ ].

c) find the current location of c in char s[ ].

d) There is error in the given code

Answer: a

Explanation:The strrchr() function locates the last occurrence of c (converted

to a char) in the string pointed to by s. String contains null character as a terminating part of it.

Character handling

65. fgetc, getc, getchar are all declared in _____

a) stdio. H

b) ctype. H

c) assert. H

d) stdarg. H

Answer: a

Explanation: The functions getc, fgetc, getchar are all declared in stdio.h header file.