HCL

Quantitative aptitude

Q1 & Q2 comparison on simple interest – compound interest, percentages

1. In the question, two quantities I and II are given. You have to solve both the quantities to establish the correct relation between Quantity-I and Quantity-II and choose the correct option

Quantity I: A man borrowed Rs. 6500 at certain rate of simple interest, while he also borrowed Rs. 7000 at 6% more simple interest than the rate of interest of borrowing of Rs. 6500. After 3 years, he paid a total interest of Rs. 8550 for both the borrowings, then find the rate at which he borrowed Rs. 7000.

Quantity II: 20% of A is same as 25% of B. If difference between A and B is 250 then find what percent of (A + B) will be equal to 540.

A -Quantity-I > Quantity-II
B -Quantity-I < Quantity-II
C -Quantity-I ≤ Quantity-II
D -Quantity-I = Quantity-II or No relation

Solution

Quantity I:

Let the rate at which he borrowed Rs. 6500 be R%.

The rate which he borrowed Rs. 7000 is (R + 6)%

According to question,

$6500 \times R/100 \times 3 + 7000 \times (R + 6)/100 \times 3 = 8550$

$65R + 70R + 70 \times 6 = 2850$

$135R = 2430$

$R = 18\%$

$R + 6 = 24\%$

Quantity I = 24%

Quantity II:

According to question,

A × 0.2 = B × 0.25

A/B = 5/4

Let, value of A and B be '5x' and '4x' respectively.

So, 5x – 4x = 250

So, x = 250

A + B = 9x = 9 × 250 = 2250

?% of 2250 = 540

? = 540 × 100/2250 = 24

Quantity II = 24%

So, Quantity I = Quantity II.

Hence, option d.

Q1 & Q2 comparison on profit & loss

2. In the question, two quantities I and II are given. You have to solve both the quantities to establish the correct relation between Quantity-I and Quantity-II and choose the correct option

Quantity I: Vishal bought two articles for Rs. 2000. He sold first one at a profit of 32% while another one at a loss of 12%. If in the transaction, he incurred a profit of 5.6%, then find the cost price of second article.

Quantity II: Monthly income of Moyank is Rs. 8000 and he saves 55% of his monthly income. If his monthly savings is increased by 20% and his monthly expense is increased by Rs. 380 then find the increase (in Rs.) in his monthly income.

A -Quantity-I > Quantity-II
B -Quantity-I < Quantity-II
C -Quantity-I ≤ Quantity-II
D -Quantity-I = Quantity-II or No relation
E -Quantity-I ≥ Quantity-II

Solution

Quantity I:

Let cost price of first article be Rs. 'x'

Cost price of second article = Rs. (2000 – x)

According to question,

1.32 × x + 0.88 × (2000 – x) = 1.056 × 2000

1.32x + 1760 – 0.88x = 2112

0.44x = 352

x = 800

Cost price of second article = 2000 – 800 = Rs. 1200

Quantity I = Rs. 1200

Quantity II:

Monthly savings of Moyank = 0.55 × 8000 = Rs. 4400

Monthly expenditure of Moyank = 8000 – 4400 = Rs. 3600

New monthly savings of Moyank = 1.2 × 4400 = Rs. 5280

New monthly expenditure of Moyank = 3600 + 380 = Rs. 3980

New monthly income of Moyank = 5280 + 3980 = Rs. 9260

Desired difference = 9260 – 8000 = Rs. 1260

Quantity II = Rs. 1260

So, Quantity II > Quantity I

Hence, option b.

Data sufficiency on probability

3. The question 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.

A bag contains red, blue and green balls in the ratio 8:7:5 respectively. Find the total number of balls in the bag.

Statement I: Probability of drawing a red ball from the bag is 2/5.

Statement II: Probability of drawing two green balls from the bag is 1/19.

A -The data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.

B -The data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.

C -The data either in statement I alone or in statement II alone are sufficient to answer the question.

D -The data given in both statements I and II together are not sufficient to answer the question.
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Solution

Statement I:

Let the bag contains 8x red, 7x blue and 5x green balls.

So the probability of drawing a red ball from the bag = $^{8x}C_1/^{20x}C_1 = 2/5$

8x/20x = 2/5

2/5 = 2/5

Since, 'x' is eliminated, so the total number of balls can't be determined.

So, data in statement I alone is not sufficient to answer the question.

Statement II:

Let the bag contains 8x red, 7x blue and 5x green balls.

So the probability of drawing two green ball from the bag = $^{5x}C_2/^{20x}C_2 = 1/19$

5x(5x − 1)/20x(20x − 1) = 1/19

95x − 19 = 80x − 4

15x = 15

x = 1

So, the total number of balls in the bag = 20 × 1 = 20

So, data in statement II alone is sufficient to answer the question.

Hence, option b.

Data sufficiency on Averages

4. The question 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.

Present age of Hemant, Vedant, Sumant and Vikrant is $(x + 4)$ years, $(x - 4)$ years, $(x + 12)$ years and $(x + 8)$ years respectively. Find the present age of Sumant.

Statement I: Average present age of Hemant and Sumant together is $(x - 21)$ years less than the average age of Vedant and Vikrant after 17 years.

Statement II: Average age of Hemant and Vikrant after 12 years is 14 years more than present average age of Vedant and Sumant together.

Statement III: Average present age of Hemant, Vedant, Sumant and Vikrant together is 9 years more than present age of Vedant.

A -The data in statement I alone is sufficient to answer the question, while the data in statement II and III alone is not sufficient to answer the question.

B -The data in both statements I and III together are necessary to answer the question, while data in statement II alone is not sufficient to answer the question.

C -The data in both statements II and III together are sufficient to answer the question, while data in statement I alone is not sufficient to answer the question.

D -The data in either statement II alone or in statements I and III together are sufficient to answer the question.

Solution

Statement I:

$[(x + 4) + (x + 12)]/2 = [(x - 4) + (x + 8) + 34]/2 - (x - 21)$

$x + 8 = x + 19 - x + 21$

$x + 8 = 40$

$x = 32$

Present age of Sumant = $x + 12 = 32 + 12 = 44$ years

Therefore, data in statement I alone is sufficient to answer the question.

Statement II:

$[(x + 4) + (x + 8) + 24]/2 = [(x - 4) + (x + 12)]/2 + 14$

$x + 18 = x + 4 + 14$

$x = x$

So, we can't determine present age of Sumant.

Therefore, data in statement II alone is not sufficient to answer the question.

Statement III:

$[(x - 4) + (x + 4) + (x + 12) + (x + 8)]/4 = [(x - 4)] + 9$

$x + 5 = x + 5$

$x = x$

So, we can't determine present age of Sumant.

Therefore, data in statement III alone is not sufficient to answer the question.

Hence, option a.

Data sufficiency on mixtures & allegations

5. The question consists of four statements: I, II, III and IV given below it. You have to decide whether the data given in which of the following statements alone is not sufficient to answer the question.

Two mixtures A and B contain milk and water in the ratio of 5:4 and 7:5, respectively. Find the quantity of water in the mixture B.

Statement I. If 40% of mixture A is taken out and 30 ml of milk and 24 ml of water is added to the resultant mixture such that the ratio of milk to water becomes 5:4. Total amount of mixture B is (100/3)% more than total amount of mixture A.

Statement II. Total quantity of milk in mixture A and mixture B together is 480 ml, while total amount of water in mixture A and mixture B together is 360 ml.

Statement III. Amount of milk in mixture B is 120 ml more than amount of water in mixture A. Difference between quantity of milk and water in mixture A is 40 ml.

Statement IV. If 25% of the mixture A is taken out and is replaced with same amount of milk then the ratio of milk to water in the resultant mixture becomes 2:1. Amount of water in mixture B is 40 ml more than amount of water in mixture A.

A -The data in statement I alone is not sufficient to answer the question.

B -The data in statement II alone is not sufficient to answer the question.

C -The data in statement III alone is not sufficient to answer the question.

D -Either (a) or (d)

Solution

Let the amount of milk and water in mixture A 5x and 4x ml respectively.

Amount of milk and water in mixture B is 7y and 5y ml respectively.

Statement I:

According to statement,

$(0.6 \times 5x + 30)/(0.6 \times 4x + 24) = 5/4$

$0.6x + 6 = 0.6x + 6$

So, data in statement I alone is not sufficient to answer the question.

Statement II:

$5x + 7y = 480$

$4x + 5y = 360$

Solving above equation we get

$x = 40$ and $y = 40$

Quantity of water in mixture B = $40 \times 5 = 200$ ml

So, data in statement II alone is sufficient to answer the question.

Statement III:

$7y = 4x + 120$

$y = (4x + 120)/7$

$5x - 4x = 40$

$x = 40$

Amount of water in mixture B = $(5/7) \times (4x + 120) = 5/7 \times 280 = 200$ ml

So, data in statement III alone is sufficient to answer the question.

Statement IV:

Total amount of mixture A = $5x + 4x = 9x$ ml

According to question,

$(0.75 \times 5x + 0.25 \times 9x)/(0.75 \times 4x) = 2/1$

$(3.75x + 2.25x)/3x = 2$

$6x/3x = 2$

$2 = 2$

So, data in statement IV is not sufficient to answer the question.

Hence, option d.

Partnership

6. Directions: Answer the questions based on the information given below.

A, B and C started a business with initial investments of Rs. 1,200, Rs. 1,000 and Rs. 1,500, respectively. After one year, A and B made additional investments equal to 20% and 25% of their initial investments, respectively, whereas C withdrew 10% of his initial investment. After one more year, A, B and C withdrew all their investments and made small investments of Rs. 'x + 180', Rs. 'x + 220' and Rs. 'x + 320' respectively for a year to maintain the business.

Find the profit share of A, if total profit earned by A, B and C together at the end of three years is Rs. 9432.

A -Rs. 3024

B -Rs. 3572

C -Rs. 3144

D -Rs. 2358

Solution

Investment of A till second year = 1200 + 1200 × 1.20 = Rs. 2,640

Investment of B till second year = 1000 + 1000 × 1.25 = Rs. 2,250

Investment of C till second year = 1500 + 1500 × 0.90 = Rs. 2,850

Respective ratio of the profits of A, B and C = (2640 + x + 180):(2250 + x + 220):(2850 + x + 320)

= (2820 + x):(2470 + x):(3170 + x)

According to question,

Profit share of A = {(x + 2820)/(x + 2820 + x + 2470 + x + 3170)} × 9432

= {(x + 2820)/(3x + 8460)} × 9432

= 1/3 × 9432 = Rs. 3144

Hence, option c.

Partnership

7. Directions: Answer the questions based on the information given below.

A, B and C started a business with initial investments of Rs. 1,200, Rs. 1,000 and Rs. 1,500, respectively. After one year, A and B made additional investments equal to 20% and 25% of their initial investments, respectively, whereas C withdrew 10% of his initial investment. After one more year, A, B and C withdrew all their investments and made small investments of Rs. 'x + 180', Rs. 'x + 220' and Rs. 'x + 320' respectively for a year to maintain the business.

Find the value of 'x', if profit share of B out of total profit of Rs. 2050 at the end of three years is Rs. 625.

A -1200

B -1220

C -1260

D -1280

Solution

Investment of A till second year = 1200 + 1200 × 1.20 = Rs. 2,640

Investment of B till second year = 1000 + 1000 × 1.25 = Rs. 2,250

Investment of C till second year = 1500 + 1500 × 0.90 = Rs. 2,850

Respective ratio of the profits of A, B and C = (2640 + x + 180):(2250 + x + 220):(2850 + x + 320)

= (2820 + x):(2470 + x):(3170 + x)

According to question,

(x + 2470)/(x + 2820 + x + 2470 + x + 3170) = 625/2050

(x + 2470)/(3x + 8460) = 25/82

82x + 202540 = 75x + 211500

7x = 8960

x = 1280

Hence, option d.

Ratios & proportions

8. Ratio of male to female population of a town in 2016 was 24:25 and total population in 2016 was 12250. If the male population is ____ and female population is _____ as compared to last year then the total population of the town becomes 17150 in 2017.

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 above statement true:

A. increased by 60%, increased by 20.8%

B. increased by 102.5%, decreased by 20%

C. increased by 85%, decreased by 3.2%

A -Only A
B -Only B

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

Total male population in 2016 = 24/49 × 12250 = 6000

Total female population in 2016 = 12250 − 6000 = 6250

A: When male population is increased by 60% and female population is increased by 20.8%.

1.60 × 6000 + 1.208 × 6250 = 9600 + 7550 = 17150

So, A can be the answer.

B: When male population is increased by 102.5% and female population is decreased by 20%.

2.025 × 6000 + 0.8 × 6250 = 12150 + 5000 = 17150

So, B can be the answer.

C: When male population is increased by 85% and female population is decreased by 3.2%.

1.85 × 6000 + 0.968 × 6250 = 11100 + 6050 = 17150

So, C can be the answer.

Therefore, A, B and C can be the answer.

Hence, option d.

Problems on numbers

9. A student finds the average of five two digits numbers. If one of the numbers is reversed and the average is taken again then the average is increased by 7.2. If all five digit numbers are consecutive multiples of twelve, then find the number which is reversed?

A -36
B -84
C -48
D -96

Solution

Let the number which is reversed be (10a + b).

If the number is reversed then the number becomes = (10b + a)

According to question,

10b + a − 10a − b = 7.2 × 5

9(b − a) = 36

b − a = 4

So, the numbers can be 15, 26, 37, 48 and 59.

Since the numbers are multiple of 12.

Therefore, the number should be 48.

Hence, option c.

Discounts

10. Two shopkeepers, A and B sell the same article but at different discounts. The profit percent earned by A is same as the discount percent given by B. The cost price and the marked price of the article is same for both shopkeepers. The discount given by A is 30.25% and the marked price of the article is Rs. 6400. If the cost price of the article is Rs. 3600, then find the profit earned by B.

A -Rs. 1264
B -Rs. 1234
C -Rs. 1224
D -Rs. 1624

Solution

Selling price of article by A = 6400 × 0.6975 = Rs. 4464

Marked price of article = Rs. 6400

Profit percentage earned by A = {(4464 − 3600)/3600} × 100 = 24%

Discount percentage offered by B = 24%

Selling price of article B = 0.76 × 6400 = Rs. 4864

Profit earned by B = 4864 − 3600 = Rs. 1264

Hence, option a.

Data interpretation (tabular form on time& work)

(11-13) Directions: Answer the questions based on the information given below.

The table given below shows the number of people required for various projects to be completed in various days.

Situations	Situation 1		Situation 2	
Projects	Number of workers	Days required	Number of workers	Days required
A	X + 20	30	X	45
B	Y + 5	Y − 5	Y	Y − 1
C	Z^2	175	M^2	252

11.If 75 people were working on project A, how many days did it take to complete the work?

A -16 days
B -20 days
C -24 days
D -26 days

Solution

According to question

30 × (X + 20) = 45X

30X + 600 = 45X

X = 40

Total work = 40 × 45 = 1800 units

Desired number of days = 1800/75 = 24 days

Hence, option c.

12. If 0.6Y people work on project B for 20 days and then 5 more people join the project after 20 days. How many days will it take to complete the project B?

A -30 days
B -32 days
C -35 days
D -27 days

Solution

According to question,

$(Y - 5) \times (Y + 5) = Y \times (Y - 1)$

$Y^2 - 25 = Y^2 - Y$

$Y = 25$

So, total amount of work = $25 \times (25 - 1) = 25 \times 24 = 600$ units

Amount of work done by 0.6Y (15 people) in 20 days = $15 \times 20 = 300$ units

Amount of work left = $600 - 300 = 300$ units

Desired time = $20 + 300/(15 + 5) = 20 + 15 = 35$ days

Hence, option c.

13. Find the time taken by a team of 5Z × 6M members to complete the project C.

A -10 days
B -8 days
C -6 days
D -7 days
Solution

According to question,

$175 \times Z^2 = 252 \times M^2$

$(Z/M)^2 = 252/175 = 36/25$

$Z/M = 6/5$

$5Z = 6M$

Total number of workers $= 5Z \times 6M = 6M \times 6M = 36M^2$

Desired time $= (252M^2)/(36M^2) = 7$ days

Hence, option d.

Data sufficiency on problems on ages

14. Present average age of Aman and Raman is '(X/2)' years. Raman is 'Y' years elder than Aman. Which of the following options is correct according to the given information?

A. Present age of Aman is $(X – Y)/2$.

B. Present age of Raman is $(X + Y)/2$.

C. Product of present age of Aman and Raman is $0.25 \times (X^2 – Y^2)$

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

Solution

Let present age of Aman and Raman be 'A' years and 'R' years respectively.

According to question,

$(A + R)/2 = X/2$

$A + R = X$……………………………..(1)

And, $R = A + Y$

$R – A = Y$…………………………….(2)

Adding equation (1) and (2), we get

$2R = (X + Y)$

$R = (X + Y)/2$

Subtracting equation (2) from equation (1), we get

$2A = (X - Y)$

$A = (X - Y)/2$

And, $A \times R = (X + Y) \times (X - Y) \times (1/4) = 0.25 \times (X^2 - Y^2)$

Hence, option d.

Q1 & Q2 comparison on Quadratic equations

15. In the question, two quantities I and II are given. You have to solve both the quantities to establish the correct relation between Quantity-I and Quantity-II and choose the correct option

Quantity I: Find the value of 'x' if $2x^2 - 29x + 104 = 0$.

Quantity II: Find the value of 'y' if $5y^2 - 36y + 36 = 0$.

A -Quantity-I > Quantity-II
B -Quantity-I < Quantity-II
C -Quantity-I ≤ Quantity-II
D -Quantity-I = Quantity-II or No relation
E -Quantity-I ≥ Quantity-II

Solution

Quantity I:

$2x^2 - 29x + 104 = 0$

$2x^2 - 13x - 16x + 104 = 0$

$x(2x - 13) - 8(2x - 13) = 0$

$(x - 8)(2x - 13) = 0$

$x = 8, 13/2$

Quantity II:

$5y^2 - 36y + 36 = 0$

$5y^2 - 6y - 30y + 36 = 0$

$y(5y - 6) - 6(5y - 6) = 0$

$(y - 6)(5y - 6) = 0$

$y = 6, 6/5$

X	Relation	Y
8	>	6
8	>	6/5
13/2	>	6
13/2	>	6/5

So, x > y

Hence, option a.

Reasoning

Days based puzzle

(16-17) Directions: Answer the questions based on the information given below.

Seven persons P, Q, R, S, T, U and V have the seminars on three different cities Bangalore, Delhi and Goa on seven days of a week starting from Monday to Sunday. Only one person has seminar on one day. Also, each person has different number of bus passes. The highest number of bus passes is 37 and lowest number of bus passes is 7.

S, who does not have highest number of bus passes, has seminar in Goa in one of the days before Wednesday. Only two persons have seminar in between the seminars of S and U, who has 24 passes and does not have the seminar in Bangalore. V does not have 37 passes. R has seminar after T. Q, who has seminar on Thursday, and the one who has lowest number of passes have seminars in same city but not in Delhi. Number of persons who have the seminars before P, who has seminar in Bangalore is equal to the number of persons who have seminars after the one who has highest number of passes. Only R and the one who has 35 passes have the seminar in Delhi. Difference

between the passes of R and Q is 23 and the sum between the passes of R and V is 56. T has seminar after V. One of the persons, who has seminar in Goa has prime number of passes less than 23. Difference between the passes of T, who has 2nd highest passes and S, who has 2nd lowest number of passes is 26.

16. Who has the seminar just after U?

A -R
B -The one who has seminar in Goa
C -The one who has 7 passes
D -T

Solution

S has seminar in Goa on either Tuesday or Monday. Only two persons have seminar in between the seminars of S and U, who has 24 passes.

Case I: When S has seminar on Tuesday.

Days	Person	Pass	City
Monday			
Tuesday	S		Goa
Wednesday			
Thursday			
Friday	U	24	
Saturday			
Sunday			

Case II: When S has seminar on Monday.

Days	Person	Pass	City

Monday	S		Goa
Tuesday			
Wednesday			
Thursday	U	24	
Friday			
Saturday			
Sunday			

Q, who has seminar on Thursday, and the one who has lowest number of passes have seminars in same city but not in Delhi. So, case II is invalid.

Numbers of persons who have the seminars before the P, who has seminar in Bangalore, is equal to the number of persons who have seminars after the one who has highest number of passes. S does not have highest number of passes.

So, again there are two possibilities either P has seminar on Sunday or Monday.

Case I: When P has seminar on Sunday.

Days	Person	Pass	City
Monday		37	
Tuesday	S		Goa
Wednesday			
Thursday	Q		Bangalore/ Goa
Friday	U	24	

Saturday			
Sunday	P		Bangalore

Case I(a): When P has seminar on Monday.

Days	Person	Pass	City
Monday	P		Bangalore
Tuesday	S		Goa
Wednesday			
Thursday	Q		Goa/Bangalore
Friday	U	24	
Saturday			
Sunday		37	

R has seminar after T, who has seminar after V. So, case I is invalid because V does not have 37 passes.

Different between the passes of R and Q is 23 and the sum between the passes of R and V is 56.

So, in case I(a) R has 37 passes which means Q has 14 passes and V has 19 passes, also the one who has prime number of passes less than 23 has seminar in Goa.

Difference between the passes of T, who has 2nd highest passes and S, who has 2nd lowest number of passes is 26.

So, if T has 36 passes and S has 8 passes than difference is 28.

If T has 35 passes and S has 8 passes than difference is 27.

If T has 35 passes and S has 9 passes than difference is 26, which is correct.

The final arrangement is:

Days	Person	Pass	City
Monday	P	7	Bangalore
Tuesday	S	9	Goa
Wednesday	V	19	Goa
Thursday	Q	14	Bangalore
Friday	U	24	Goa
Saturday	T	35	Delhi
Sunday	R	37	Delhi

T has seminar just after U.

Hence, option d.

17. Who among the following has less passes than Q?

A -The one who has seminar on Sunday
B -T
C -The one who has seminar in Delhi
D -The one who has seminar on Tuesday
Solution

S has seminar in Goa on either Tuesday or Monday. Only two persons have seminar in between the seminars of S and U, who has 24 passes.

Case I: When S has seminar on Tuesday.

Days	Person	Pass	City
Monday			

Tuesday	S		Goa
Wednesday			
Thursday			
Friday	U	24	
Saturday			
Sunday			

Case II: When S has seminar on Monday.

Days	Person	Pass	City
Monday	S		Goa
Tuesday			
Wednesday			
Thursday	U	24	
Friday			
Saturday			
Sunday			

Q, who has seminar on Thursday, and the one who has lowest number of passes have seminars in same city but not in Delhi. So, case II is invalid.

Numbers of persons who have the seminars before the P, who has seminar in Bangalore, is equal to the number of persons who have seminars after the one who has highest number of passes. S does not have highest number of passes.

So, again there are two possibilities either P has seminar on Sunday or Monday.

Case I: When P has seminar on Sunday.

Days	Person	Pass	City
Monday		37	
Tuesday	S		Goa
Wednesday			
Thursday	Q		Bangalore/ Goa
Friday	U	24	
Saturday			
Sunday	P		Bangalore

Case I(a): When P has seminar on Monday.

Days	Person	Pass	City
Monday	P		Bangalore
Tuesday	S		Goa
Wednesday			
Thursday	Q		Goa/Bangalore
Friday	U	24	
Saturday			

Sunday		37	

R has seminar after T, who has seminar after V. So, case I is invalid because V does not have 37 passes.

Different between the passes of R and Q is 23 and the sum between the passes of R and V is 56.

So, in case I(a) R has 37 passes which means Q has 14 passes and V has 19 passes, also the one who has prime number of passes less than 23 has seminar in Goa.

Difference between the passes of T, who has 2nd highest passes and S, who has 2nd lowest number of passes is 26.

So, if T has 36 passes and S has 8 passes than difference is 28.

If T has 35 passes and S has 8 passes than difference is 27.

If T has 35 passes and S has 9 passes than difference is 26, which is correct.

The final arrangement is:

Days	Person	Pass	City
Monday	P	7	Bangalore
Tuesday	S	9	Goa
Wednesday	V	19	Goa
Thursday	Q	14	Bangalore
Friday	U	24	Goa
Saturday	T	35	Delhi
Sunday	R	37	Delhi

The one who has seminar on Tuesday has a smaller number of passes than Q.

Hence, option d.

Coding-decoding

(18-19) Directions: Answer the questions based on the information given below.

In a certain code of language,

'incidents some educational institutions' is coded as 'M9H M36D L25H L4T'

'personal data rightly powers' is coded as 'M9Q V4Q Z4E G1S'

'technically government individuals spied' is coded as 'O9U V9H Z25H R4T'

'enforce provisions landmark authority' is coded as 'I9D L16Q Z4M R16B'

18. The code "L4T" represents which of the following word?

A -Right
B -Tubelight
C -Smackdown
D -Survivor

Solution

For the numbers – square of the sum of the total number of vowels.

For the letters- The first letter of the code is calculated as the reverse of third letter of the word from the right end (in alphabetical series) and the second letter of the code represents as:

a. If the word starts with a vowel then its immediate previous letter in English alphabetical series be considered as the code of that word.

b. If the word starts with consonant then its immediate succeeding letter in English alphabetical series be considered as the code of that word.

For example, in a word 'Government' as the word starts with consonant than its succeeding alphabet i.e. H and opposite of 3rd letter of the word i.e. E-V, be the code of the word.

The code "L4T" represents "Smackdown"

Hence, option c.

19. What is the code of "Office Meeting"?

A -R15N R21Y
B -R9N R9N
C -R12N R21N
D -N21R N21B

Solution

For the numbers – square of the sum of the total number of vowels.

For the letters- The first letter of the code is calculated as the reverse of third letter of the word from the right end (in alphabetical series) and the second letter of the code represents as:

a. If the word starts with a vowel then its immediate previous letter in English alphabetical series be considered as the code of that word.

b. If the word starts with consonant then its immediate succeeding letter in English alphabetical series be considered as the code of that word.

For example, in a word 'Government' as the word starts with consonant than its succeeding alphabet i.e. H and opposite of 3rd letter of the word i.e. E-V, be the code of the word.

The code of "Office Meeting" is "R9N R9N".

Hence, option b.

Data sufficiency on floors based puzzle

20. The question given below can be answered using sentence given in only one of the options. Find out the option which can be used to answer the question.

Six persons P, Q, R, S, T, U live on six storey building having six floors such that ground floor is numbered as 1 and floor above the ground floor is numbered as 2 and so on. Each of them also likes different colors among Blue, Green, Purple, Yellow, Red and Gold

Who lives on 3rd floor and likes which color?

A -One person lives between P and U, who likes Blue color. The one who likes Yellow color lives on one of the floors above the floor on which the one who

likes Blue color lives. T neither lives on 1st nor 2nd floor of the building. Q lives on floor number 4 and likes Red color.

B -Only one person lives between the floor on which T lives and the one who likes Purple color. The one who likes purple color lives above the floor number 3. R lives on sixth floor and likes Yellow color. Q lives on 4th floor and likes Red color.

C -The one who likes Green color lives above the one who likes Yellow color but below the one who likes Gold color. P neither likes Gold nor Green color. There are at most two persons live above the P's floor. Q lives immediately below P. The one who likes Red color live two floors below the floor on which Q lives.

D -R lives on 5th floor and likes Green color. The one who likes Red color lives on 2nd floor. Only one person lives between R and T who neither likes Blue nor Purple color. The one who likes Yellow lives above the one who likes Red but not immediately above.

Solution

From Statement I: One person lives between P and U, who likes Blue color. The one who likes Yellow color lives on one of the floors above the floor on which the one who likes Blue color lives. T neither lives on 1st nor 2nd floor of the building. Q lives on floor number 4 and likes Red color

No proper information is given.

From statement II: Only one person lives between the floor on which T lives and the one who likes Purple color. The one who likes purple color lives above the floor number 3. R lives on sixth floor and likes Yellow color. Q lives on 4th floor and likes Red color.

Floor	Person	Color
6	R	Yellow
5		Purple
4	Q	Red

3	T	
2		
1		

So, it is clear that T lives on 3rd floor but it is not given which color does T likes.

From statement III: The one who likes Green color lives above the one who likes Yellow color but lives below the one who likes Gold color. P neither likes Gold nor Green color. There are utmost two persons live above the P's floor. Q lives immediately below P. The one who likes Red color live two floors below the floor on which Q lives.

No proper information is given.

From statement IV: R lives on 5th floor and likes Green color. The one who likes Red color lives on 2nd floor. Only one person lives between R and T who neither likes Blue nor Purple color. The one who likes Yellow lives above the one who likes Red but not immediately above.

Floor	Person	Color
6		Yellow/
5	R	Green
4		Yellow/
3	T	Gold
2		Red
1		

Hence, it is clear from this statement that T lives on 3rd floor and likes Gold color.

From statement V: The one who lives on 2nd floor, likes Blue color. Only two persons live above P. Q does not likes Red or Green. U neither lives on 1st nor

4th floor of the building. Only one person lives between U and T, who likes Purple color. Person who lives immediately above S likes Red color.

No proper information is given.

Hence, option d.

Data sufficiency on circular based sitting arrangement

21. 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.

Are all the five friends, viz. P, Q, R, S and T who are sitting around a circular table facing the center?

Statement I: P sits third to the right of S who faces the center. Q sits second to the right of P.

Statement II: R sits 2nd to the left of T who faces the center. S sits 2nd to the right of R.

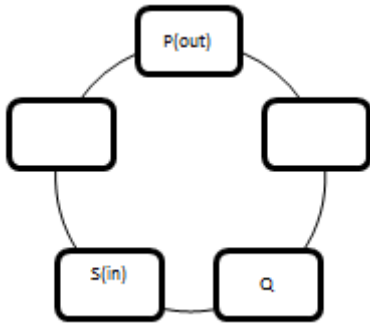A -Data in statement I alone is sufficient to answer the question.

B -Data in either statement I or statement II alone is 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.
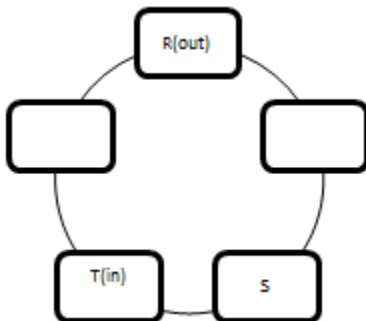
Solution

From statement I: P sits third to the right of S who faces the center. Q sits second to the right of P.

So, from this statement it is clear that all are not facing towards the center.

From statement II: R sits 2nd to the left of T who faces the center. S sits 2nd to the right of R.

So, from this statement it is clear that all are not facing the center.

Hence, option b.

Data sufficiency on coding-decoding

22. 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 code for 'housing' in a certain code language?

Statement I: In a certain code of language, 'sufficient money for project' is coded as 'ae cd pd rd' and 'money project is for housing' is coded as 'ae cd md kd rd'

Statement II: In a certain code of language, 'housing is for money' is coded as 'ae cd kd md' and 'money is project' is coded as 'ae cd kd'

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: Insufficient data.

So, from this statement, we get the code of 'sufficient' i.e. 'ae', the code of 'housing' is either 'kd' or 'md'.

From statement II: Insufficient data.

By combining both the statements, we get the code of 'housing' is 'md'.

Hence, option d.

Logical deduction (statements & arguments)

23. 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: Animals are appropriate research subjects because they are similar to human beings in many ways.

1. The anatomic, metabolic, and cellular similarities between animals and people make animals good models for human beings.

2. Chimpanzees share 99% of their DNA with humans, and mice are 98% genetically similar to humans.

3. All animals, including humans, are descended from common ancestors, and all have the same set of organs that function in essentially the same way with the help of a bloodstream and central nervous system.

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

The given argument says that animals are good subjects for research as they are similar to human beings in several ways. It can be inferred by putting 1, 2 and 3 together. 1 tells us about the similarities between animals and people

and how these similarities make animals good models for human beings. 2 tells us about the genetic similarities between humans and certain animals. 3 tells us that all animals as well as humans descended from common ancestors. Thus, (d) is the right answer.

Logical deduction (statements & arguments)

24. 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: A regular exercise regime and weight reduction may lower cholesterol levels in the bloodstream of some individuals.

1. People who do not workout regularly have a high risk of developing high levels of cholesterol in their bloodstream.

2. An increase in the level of high-density Lipoprotein (HDL) can lower cholesterol levels in the bloodstream as it increases the capacity of the body to rid itself of excess cholesterol.

3. Exercising regularly and reducing weight can lead to a significant rise in the levels of HDL in the bloodstream.

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

Solution

(d) is the right answer. The premise states that a regular exercise regime and weight reduction may lower cholesterol levels in the bloodstream. This can be inferred by putting 2 and 3 together. 2 states that an increase in HDL can lower cholesterol levels. 3 states that regular exercise and reducing weight can lead to a significant rise in HDL. Thus, it follows that regular exercise and weight reduction may lower cholesterol levels in the bloodstream of some individuals. 1 is incorrect as it merely talks about the possible implications of not working out regularly.

Coded distance & direction

(25-27) Directions: Read the following information carefully.

A&B (115) – A is 100m to the East of B

A#B (75) – A is 60m to the North of B

A%B (65) – A is 50m to the West of B

A@B (55) – A is 40m to the South of B

O%N(30), N@M(37)

M%Q(35), P@Q(42), R#S(45)

S&T(25), R%P(40)

25.R is in which direction with respect to M?

A -Northeast
B -Southwest
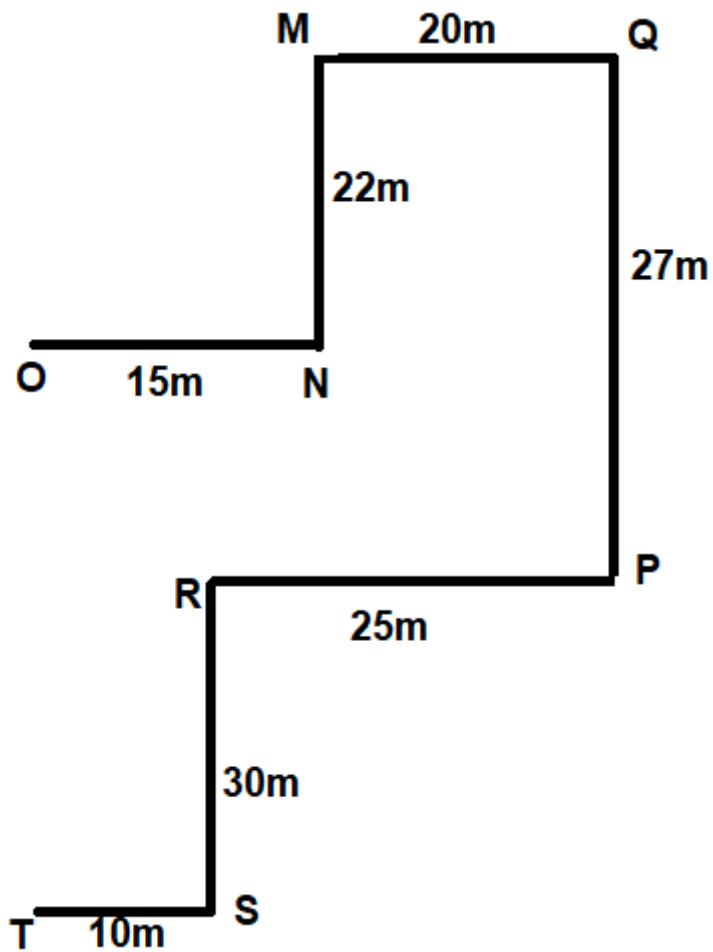C -Southeast
D -Northwest

Solution

As given in the information there is common difference of 15m, between the distance given in brackets and distance given between the two points.

Such as A&B(115) – A is 100m to the East of B

Here difference is 15m, So, taking 15 as a base difference we have to calculate the further distances given in the brackets such as given that O%N(30) which means O is to west of N and the distance between O and N is 30-15=15m.

Final solution:

R is to the southwest of M.

Hence, option b.

26. If W&S (40), then what is the distance between W and P?

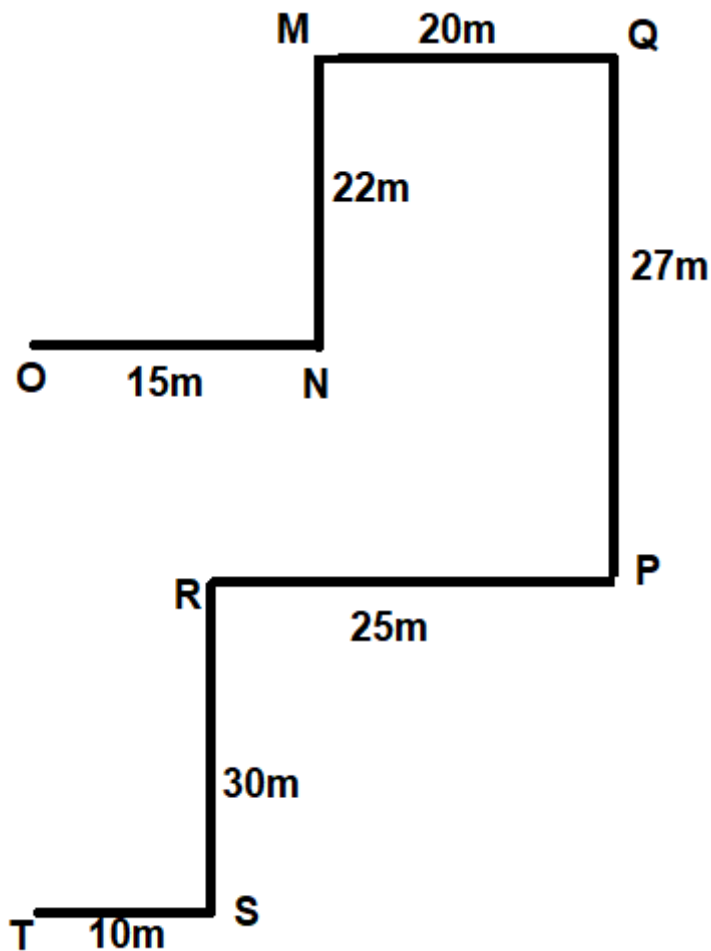A -21m
B -35m
C -30m
D -40m

Solution

As given in the information there is common difference of 15m, between the distance given in brackets and distance given between the two points.

Such as A&B(115) – A is 100m to the East of B

Here difference is 15m, So, taking 15 as a base difference we have to calculate the further distances given in the brackets such as given that O%N(30) which means O is to west of N and the distance between O and N is 30-15=15m.

Final solution:

If it is given that W&S (40) which means W is 25m east of S so, the distance between W and P is 30m.

Hence, option c.

27. What is direction of O with respect to T?
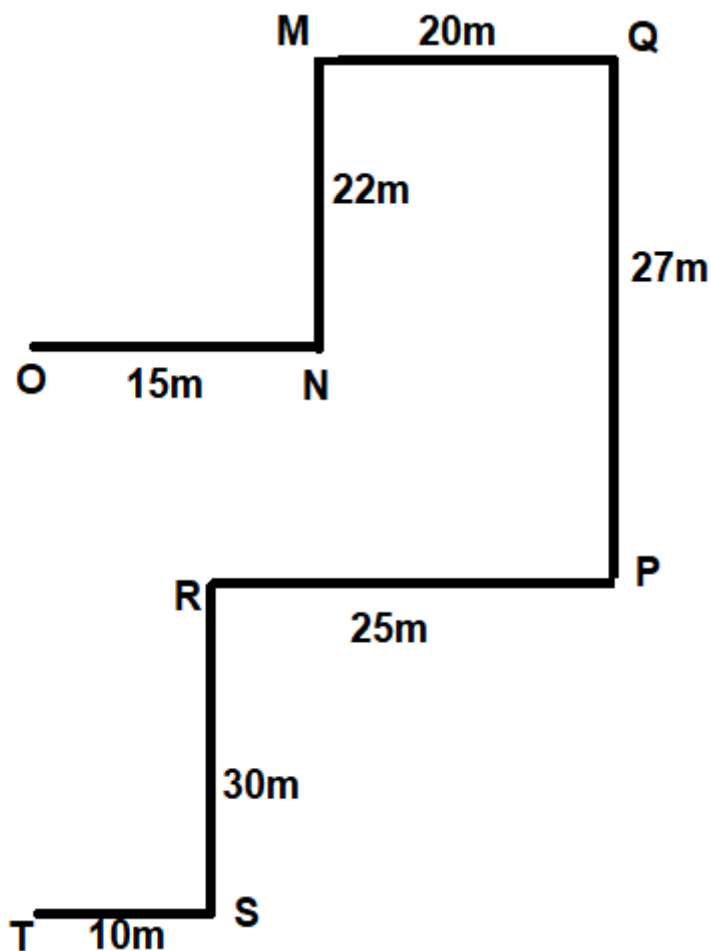
A -O%T
B -O#T
C -O@T
D -T#O
Solution

As given in the information there is common difference of 15m, between the distance given in brackets and distance given between the two points.

Such as A&B(115) – A is 100m to the East of B

Here difference is 15m, So, taking 15 as a base difference we have to calculate the further distances given in the brackets such as given that O%N(30) which means O is to west of N and the distance between O and N is 30-15=15m.

Final solution:

O is to the north of T.

Hence, option b.

Data sufficiency on north sitting arrangement

28. 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.

How many girls are sitting in the row (assuming all are facing north)?

Statement I: Sunita sits 5th from the right end of the row. Riya sits 11th from the left end of the row.

Statement II: Tina sits 6th from the left end. Riya sits 3rd from the left of the one who is 7th from the right end.

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: No proper information is given.

From statement II: No proper information is given.

From I and II together, it is clear that there are 20 girls sitting in the row.

					Tina					Riya					Sunita				

Hence, option d.

Data sufficiency on months based puzzle

29. 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.

Eight persons A, B, C, D, E, F, G and H was born either 15th or 20th of the four different months i.e. January, February, March and April(not in the same order). Who was born on 20th February?

Statement I: There were four persons born between A and H. C was born in one of the months, which has 31 days and also born before H. E was born just before H.

Statement II: Three persons born between B and F and both of them were born in 20th of the month. B was born just before A and just after G. B was born in the month of January.

Statement III: Two persons were born between A and G. C was born on 20th of the month. G was not born just before E.

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 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

There were four persons born between A and H. C was born in one of the months, which has 31 days and also born before H. E was born just before H.

No exact information is given.

From statement II: Three persons born between B and F. Both of them were born in 20th of the month. B was born just before A and just after G. B was born in the month of January.

So, there are two possibilities so B and F either born in February or in January.

From statement III: Two persons were born between A and G. C was born on 20th of the month. G was not born just before E.

No proper information is given.

From statement I and II, we get.

Month/Date	Person
January 15th	G
January 20th	B
February 15th	A
February 20th	D
March 15th	C
March 20th	F
April 15th	E
April 20th	H

So, from I and II we get that D was born on 20th February.

Hence, option c.

Input-output

30. Directions: Study the following information carefully and answer the questions.

A number arrangement machine when given an input line of numbers rearranges them following a particular rule in each step. The following is an illustration of input and rearrangement.

Input: 44 92 31 58 35 96 19 77 63 52 85 24

Step I: 19 24 92 44 58 31 96 35 63 77 85 52

Step II: 31 35 19 24 29 44 85 69 36 77 58 25

Step III: 44 36 35 31 29 25 24 19 85 77 69 58

Step IV: % # % % # # % % # % # #

And step IV is the last step of the rearrangement. As per the rules followed in the above step, find out each of the following questions the appropriate step for the given input.

Input for the question:

33 97 29 55 37 93 17 76 67 54 78 26

If all the numbers are arranged in ascending order in step 2 then which of the following number will be 5th from the right end?

A -67
B -79
C -55
D -39

Solution

Given input:

33 97 29 55 37 93 17 76 67 54 78 26

Step I: 17 26 97 33 55 29 93 37 67 76 78 54

Step II: 29 33 17 26 79 55 39 73 76 67 87 45

Step III: 45 39 33 29 26 17 87 79 76 73 67 55

Step IV: # % % # % % # % # % # %

In the first step the first two smallest number are written in ascending order from the left side of the input and then remaining numbers are interchange their places and written from the left to right direction of the input.

In the second step the next two smallest numbers are written from the left side of the input and for the other number's digits are interchange within the numbers and written from the left to right.

In the third step first, all the numbers which are smaller than 50 are written in descending order from left to right side of the input and then numbers which are greater than 50 are written in descending order.

In last step IV: If the sum of the digits is an even number then use symbol % and if the sum of the digits is odd number then use symbol #.

Step 2 of the given input is:

29 33 17 26 79 55 39 73 76 67 87 45

After arranging in ascending order.

17 26 29 33 39 45 55 67 73 76 79 87

So, 67 is the 5th number from the right end.

Hence, option a.

English

Reading comprehension

(31-33) Directions: Read the following passage carefully and answer the questions.

Precautionary principle is an approach in policy making that legitimizes the adoption of preventative measures to address potential risks to the public or environment associated with ascertain activities or policies. The concept of the precautionary principle emerged in the 1970s–80s in German environmental law, where it was known by the term Vorsorgeprinzip. In 1987 it was incorporated into international law at the International Conference on the Protection of the North Sea. Since then it has permeated most international environmental conventions. For example, entrenched by the 1992 Rio Declaration (Principle 15), it was written into the United Nations Framework Convention on Climate Change and, retroactively, into the Protocol on Substances that Deplete the Ozone Layer. It was integrated into the criteria for the listing of endangered species by the Convention on International Trade in Endangered Species in 1994, and the following year it was adopted by the Food and Agriculture Organization of the United Nations. The precautionary principle also is a _____(A)_____ of European Union (EU) environmental law and has been central in determining the EU's position towards genetically modified organisms. The EU has also advocated its extension to other areas, such as food and health issues.

There has been debate, however, as to whether the precautionary principle should be considered a principle of international environmental law or merely an approach, a guide to policy making. (B) The precautionary principle has been criticize for promoting a risk-averse approach to policy making and

resource management in contexts where risk is part of decision making and the problem of scientific uncertainty is especially acute. In natural resource management, the course of management often is decided upon despite persisting uncertainty; in such cases, the precautionary approach risks _____(C)_____ management altogether.

31. Which of the following words will fit in the blank (A) in the passage?

A -landmark
B -benchmark
C -cornerstone
D -epithet

Solution

We need a noun here to be modified by the indefinite article A. The sentence talks about how the principle forms a centrepiece of the EU environmental law, and it has been central in determining in EU's position towards Genetically Modified Organisms. CORNERSTONE means mainstay, which will fit here, which makes (c) the right answer.

Landmark - an important step or stage in development. Benchmark - standard of comparison. Epithet - an adjective or phrase expressing a quality or attribute regarded as characteristic of the person or thing mentioned. Hallmark - indicator.

32. Which of the following phrases can replace the highlighted portion in (B)?

1. Has faced criticism for

2. Has criticized for

3. Has been criticized for

A -No Improvement
B -Only 1 and 2
C -Only 1 and 3
D -Only 2 and 3

Solution

The sentence talks about the reasons for which the precautionary principle has been condemned. Both 1 and 3 will replace the phrase to render the requisite meaning, which makes (c) the right answer.

2 is incorrect as the phrase is an active voice construction, while the sentence is in passive voice. The highlighted portion is incorrect as it uses the base form verb CRITICIZE in place of CRITICIZED.

33. Refer to the line: *"Precautionary principle is an approach in policy making that legitimizes the adoption of preventative measures to address potential risks to the public or environment associated with ascertain activities or policies."* Which of the following words in the line is contextually inapt?

A -approach
B -address
C -potential
D –ascertain

Solution

The sentence tells us that the principle is an approach (strategy) in policy making that legitimizes the adoption of preventative measures to address (tackle) potential (likely) risks associated with particular activities or policies. ASCERTAIN means to make sure of something, which is contextually inapt here. CERTAIN means particular and would have been more apt here. Thus, (d) is the right answer.

Para jumbled sentences

(34-35) Directions: A set of sentences is given, which when properly sequenced, form a coherent paragraph. P is the first sentence of the rearranged paragraph. It is divided up into parts jumbled up in any random order. First rearrange the parts to form a logical and coherent sentence and then arrange the remaining sentences to form a meaningful paragraph and answer the questions.

P. India is likely to have (A)/the world's largest workforce (B)/which is undoubtedly (C)/by 2027, with a billion-people aged between 15 and 64, (D)/great news for the economy(E)

Q. When left unchecked untreated, diseases eventually escalate to demand more pharmacotherapy, extensive treatment plans or hospitalisation, which can be avoided if we have a robust primary healthcare in place.

R. However, simultaneous to a skilled workforce, the development of healthy human capital is also vital.

S. Thus, attention to primary healthcare is critical as it will reduce the strain of further complications resulting from unaddressed palliative needs.

T. Even more so because this increasing working population is buffeted by an escalation of non-communicable diseases (NCDs) that threatens to decelerate India's demographic edge.

U. Therefore, for India's large population to adequately meet its primary healthcare needs, the health care sector requires combined efforts by private enterprises as well as the government.

34. Which of the following will be the FOURTH sentence after rearrangement?

A -U
B -T
C -R
D -S

Solution

(d) is the right answer. PRTSQU is the correct sequence. P has been given to us as the first statement. It talks about how India will have the largest workforce by 2027. R follows P. It begins with the conjunction HOWEVER, which is used to link contrasting statements. It shifts the focus towards healthcare. T follows R. It states that India's demographic edge will be threatened by non-communicable diseases. S follows T. It talks about the need for paying attention to primary healthcare. Q follows S. It reinforces the need for robust primary healthcare. U ends the passage by highlighting the need for collaboration between the private sector and government.

35. Which of the following will be the FIFTH sentence after rearrangement?

A -Q
B -U
C -S

D -T

Solution

(a) is the right answer. PRTSQU is the correct sequence. P has been given to us as the first statement. It talks about how India will have the largest workforce by 2027. R follows P. It begins with the conjunction HOWEVER, which is used to link contrasting statements. It shifts the focus towards healthcare. T follows R. It states that India's demographic edge will be threatened by non-communicable diseases. S follows T. It talks about the need for paying attention to primary healthcare. Q follows S. It reinforces the need for robust primary healthcare. U ends the passage by highlighting the need for collaboration between the private sector and government.

Interchanging of sentences

36. In the question below, two sentences are given and each of them consists of two words highlighted in bold. The words may be incorrectly placed and need to be interchanged in order to make both the sentences contextually correct. From the options, choose the option that represents the correct combination of the words that need to be interchanged.

I. In order to (1)ascertain which applicant was most (2)inarticulate for the position, the hiring manager spent a long time reviewing the resumes.

II. Sadly, a number of high school students are (3)qualified when they graduate and cannot (4)properly word a sentence.

A -1-3, 2-4
B -2-3
C -1-2
D -2 -4

Solution

(b) is the right answer. We need to replace (2) with (3). The first sentence talks about how the hiring manager was reviewing the profiles of the applicants to make a decision. INARTICULATE means unable to speak in a manner that can be understood. This quality is not something that can get you a job. QUALIFIED means competent or knowledgeable to do something. ASCERTAIN means to calculate or estimate something. PROPERLY means in a way that is required.

Interchanging of sentences

37. In the question below, two sentences are given and each of them consists of two words highlighted in bold. The words may be incorrectly placed and need to be interchanged in order to make both the sentences contextually correct. From the options, choose the option that represents the correct combination of the words that need to be interchanged.

I. The speaker spoke so (1)rapidly that his words were (2)inconclusive to most in the audience.

II. The blood test was (3)incoherent for any diseases, so they (4)wanted to redraw blood.

A -1-3, 2-4
B -2-3
C -1-2
D -2 -4

Solution

(b) is the right answer. We need to interchange INCOHERENT with INCONCLUSIVE. The first sentence talks about the speed at which the speaker talked. It made it difficult for the people in the audience to understand. The second sentence talks about how the results of the blood test could not indicate anything about the diseases. If something is INCONCLUSIVE, it has not proved anything. If someone is INCOHERENT, they are talking in a confused and unclear way.

Interchanging of sentences

38. In the question below, two sentences are given and each of them consists of two words highlighted in bold. The words may be incorrectly placed and need to be interchanged in order to make both the sentences contextually correct. From the options, choose the option that represents the correct combination of the words that need to be interchanged.

I. Nothing is more (1)beautiful to a mother than her children, and she will always choose to (2)deft them over anything else.

II. The (3)protect carpenter was able to take a few old boards and turn them into a (4)precious bookshelf.

A -1-4, 2-3

B -2-3

C -1-2

D -2-4, 1-3

Solution

(a) is the right answer. We need to replace (1) with (4) and (2) with (3). We need a verb in its base form to fit in the infinitive construction of TO+VERB. DEFT (skilled) is an adjective. PROTECT(to keep safe from harm or injury) is a verb. The first sentence talks about mothers. It states that children are very dear to mothers and they will go to any length to keep them safe. The second sentence talks about how the carpenter was able to use some old boards and make a bookshelf.

Cloze test

(39-45) Directions: Read the passage carefully and answer the questions as per the individual direction.

(I)Technology is one field (A)/much people rely upon (B)/to offer a vision of a brighter(C)/ future, but as a new decade dawns on us,(D)/ optimism is in short supply(E). (II)The new technologies that dominated the past decade seem to be making things worst. Social media were supposed to bring people together. (III)_____today they are better known for invading privacy, spreading propaganda and undermining democracy. (IV)E-commerce and ride-hailing offer _____, but they are often charged with underpaying workers, exacerbating inequality and clogging the streets with vehicles. Parents worry that smartphones have turned their children into screen-addicted zombies.

(V)The technologies expected to dominate the new decade also seem to _____. (VI) Artificial intelligence can enter bias and threaten your job. (VII)5G is _____ of the Sino-American trade war, which has made the global economic outlook _____. Polls show that internet firms are now less trusted than the banking industry. At the very moment banks are striving to rebrand themselves as tech firms, internet giants have become the new banks, morphing from talent magnets to pariahs.

The New York Times sums up the encroaching gloom. "A mood of pessimism", it writes, has displaced "the idea of inevitable progress born in the scientific and industrial revolutions." Except those words are from an article published in 1979. (VIII)Back then the anxiety was fed by growing doubts about society's ability to _____ the seemingly runaway forces of technology" _____(IX)_____. Yet concerns that humanity has taken a technological wrong turn, or that particular technologies might be doing more harm than good,

have arisen before. (X) In the 1970s the despondency was prompted by concerns about overpopulation, environmental damage and the _____ of nuclear immolation.

39. Which of the following fragments in (I) contains an error?

A -D
B -A
C -B
D –C

Solution

(c) is the right answer. The sentence seeks to convey that often people look at the field of technology with a positive outlook, but things have changed recently. We need to replace MUCH with MANY. MUCH is used with uncountable nouns, MANY is used with countable nouns. PEOPLE is a plural countable noun.

40. Which of the highlighted words in (II) should be replaced to make the sentence grammatically and contextually correct?

A -new
B -dominated
C -past
D -worst

Solution

(d) is the right answer. The sentence seeks to convey that the technologies that were celebrated in the past decade are causing situations to become more unpleasant. We need to replace WORST with WORSE. WORSE is a comparative adjective or adverb, describing something that is more disagreeable than something else. By comparison, WORST is a superlative adjective or an adverb that means something is as bad as it can get.

41. Which of the following words can fill the blank in statement (IV)?

A -console
B -comfortable

C -convenience
D -combination

Solution

(c) is the right answer. We need a noun to act as the object of the verb OFFER. The second half of the sentence talks about the downsides of ecommerce and ride-hailing. It is connected to the first half with the conjunction BUT, which is used to link contrasting statements. Thus, the first half should discuss the benefits of ecommerce and ride-hailing. Thus, CONVENIENCE fits contextually. If you describe something as a convenience, you mean that it is very useful.

CONSOLE(v.)- comfort (someone) at a time of grief or disappointment.

COMFORTABLE(adj.)- (especially of clothes or furnishings) providing physical ease and relaxation.

COMBINATION(n)- a particular arrangement of different elements.

EFFECTIVE-(adj.)- successful in producing a desired or intended result.

42. Which of the following phrases can fill the blank in statement (V)?

A -beat around the bush
B -be in the affirmative
C -cast a dark shadow
D -be contrary to the law

Solution

(c) is the right answer. The sentence consists of the adverb ALSO. It implies that the tone of the sentence will agree with that of the first paragraph. Thus, the author seems to convey that the new technologies that will be developed and used in the new decade will also have a lot of downsides. CAST A DARK SHADOW means that the impact of the technologies that will be developed and used in the new decade will also have some negative impacts.

(a) is incorrect. TO BEAT AROUND THE BUSH means to avoid talking about what is important

(b) is incorrect. If you reply to a question in the affirmative, you say 'yes' or make a gesture that means 'yes'.

(d) is incorrect. CONTRARY TO THE LAW refers to something that is illegal.

(e) is incorrect. TO HAVE A DIFFERENCE OF OPINION means to have a conflict.

43. Which of the following words can replace the highlighted word in statement (VI) to make it grammatically and contextually correct?

A -enact
B -exemplify
C -explain
D -entrench

Solution

(d) is the right answer. We need a verb in the base form to follow the modal verb CAN. The sentence discusses the possible downsides of Artificial intelligence(AI). It states that it can lead to greater bias(which basically implies unfair treatment) and also threaten our jobs. ENTRENCH can replace the highlighted word. It means to establish (an attitude, habit, or belief) so firmly that change is very difficult or unlikely.

ENTER- to come or go into (a place).

ENACT- to put into practice (an idea or suggestion).

EXEMPLIFY- to illustrate or clarify by giving an example.

44. Which of the following conjunctions can fill the blank in statement (III)?

A -Despite
B -However
C -Moreover
D -Since

Solution

(b) is the right answer. The sentence preceding (III) talks about what the social media platforms were supposed to do something positive. (III) talks about how the social media platforms have contributed negatively. Thus, the two sentences have a contrasting relationship. HOWEVER is used to link sentences that share a contrasting relationship.

DESPITE is used to introduce a fact which makes the other part of the sentence surprising, which is not the case here.

SINCE and FOR is used to show a cause-effect relationship, which is not the case here.

MOREOVER is used to provide additional information, which is not the case here.

45. Which of the following pairs of phrase and word can fill two blanks in statement (VII)?

A -at the centre, imminent
B -at the core, bliss
C -at the expense, jovial
D -at the heart, bleak
Solution

(d) is the right answer. The sentence seeks to convey that the 5G technology is one of main factors that has led to the trade conflict between China and the US. TO BE AT THE CORE/HEART/CENTRE means to be the most important part of something. If you achieve something AT THE EXPENSE OF someone, you do it in a way that can cause them some harm or disadvantage. AT THE HELM means in a position of authority. The phrases in (a), (b) and (d) can fill the blank.

BLEAK fits contextually as the tone of the paragraph is negative. If a situation is BLEAK, it is bad, and seems unlikely to improve.

IMMINENT is used to refer to something(negative) which is likely to happen. BLISS is a state of complete happiness. If you describe a person as JOVIAL, you mean that they are happy and behave in a cheerful way. Someone who is ASSIDUOUS works hard or does things very thoroughly.

General knowledge

Rivers

46. With the aim to fuse the cultures of Ganga and Brahmaputra the Ministry of Development of North East Region conducted a four day long North East festival at _____.

A -Prayagraj
B -Guwahati
C -Lucknow
 D - Varanasi

Solution

With the aim to fuse the cultures of Ganga and Brahmaputra the Ministry of Development of North East Region conducted a four day long North East festival in Varanasi.

Days and themes

47. International Men's Day (IMD) is observed annually on which date?

A -November 26
B -November 19
C -November 08
D -October 24

Solution

International Men's Day (IMD) is observed annually on November 19 every year to celebrate the achievements and contributions of boys of men towards community, family, marriage, and childcare. The day also highlights the basic humanitarian values. The 2019 theme was "Making a difference for men and boys".

Appointments

48. Who has been appointed as director of Technical Cooperation and Silk Road Development in United Nations World Tourism Organisation (UNWTO)?

A -Pankaj Kumar
B -Kristalina Georgieva
C -Anshula Kant
 D - Suman Billa

Solution

Suman Billa has been appointed as director of Technical Cooperation and Silk Road Development in United Nations World Tourism Organisation (UNWTO) (Headquarters: Madrid, Spain).

Festivals

49. 'Elephanta festival' is observed at which place?

A -Bengaluru
B -Mumbai
C -Delhi
D -Madurai

Solution

Elephanta festival is organized by the Maharashtra Tourism Development Corporation (MTDC) to promote Mumbai tourism and culture. It is one of the most prominently celebrated festivals in Mumbai. This renowned festival is held on the Elephanta Island, adjacent to the Elephanta Cave, a World Heritage Site. The theme for this year is 'Swarang'.

National parks

50. Guru Ghasidas National Park is located in which Indian state?

A -Jammu and Kashmir
B -Karnataka
C -Chhattisgarh
D -Bihar

Solution

Chhattisgarh government recently announced Guru Ghasidas National Park in Kotiya district as its fourth tiger reserve. At present there are three tiger reserves in Chattisgarh: Achanakmar Tiger Reserve in Bilaspur, Udanti-Sitanadi Tiger Reserve in Gariaband and Indravati Tiger Reserve in Bijapur district.

Computers (technical)

Functions

51. The value obtained in the function is given back to main by using _____ keyword.

a) return

b) static

c) new

d) volatile

Answer: a

Explanation: None.

External variables

52. Functions in C are always _____

a) Internal

b) External

c) Both Internal and External

d) External and Internal are not valid terms for functions

Answer: b

Static variables

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

```
     #include <stdio.h>
     void main()
   {
      static int x;
```

```
        printf("x is %d", x);
            }
```

a) 0

b) 1

c) Junk value

d) Run time error

Answer: a

Pointers & arrays

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

```
        #include <stdio.h>
        void main()
        {
           char *s = "hello";
        char *p = s;
         printf("%p\t%p", p, s);
              }
```

a) Different address is printed

b) Same address is printed

c) Run time error

d) Nothing

Answer: b

Pointers to pointers

55. Comment on the output of the following C code.

```
#include <stdio.h>
int main()
  {
   int a = 10;
   int **c -= &&a;
  }
```

a) You cannot apply any arithmetic operand to a pointer

b) We don't have address of an address operator

c) We have address of an address operator

d) None of the mentioned

Answer: b

56. Which among the given options compares atmost n characters of string ch to string s?

a) int strncmp(ch, s, n)

b) int strcmp(ch, s)

c) int strncmp(s, ch, n)

d) int strcmp(s, ch)

Answer: a

Explanation: int strncmp(ch, s, n) is used to compare at most n characters of string ch to string s; return <0 if ch0 of ch >s.

String operations

57. Which of the following is the right syntax to copy n characters from the object pointed to by s2 into the object pointed to by s1?

a) void *memcpy(void *s1,const void *s2,size_t n);

b) void *memcpy(void *s2, const void *s1, size_t n);

c) void memcpy(void *s1,const void *s2, size_t n);

d) void memcpy(void *s2,const void *s1,size_t n);

Answer: a

Explanation: The memcpy() function copies n characters from the object pointed to by s2 into the object pointed to by s1. If copying takes place between objects that overlap, the behavior is undefined.

While loop

58. How many times i value is checked in the following C code?

```
#include <stdio.h>
int main()
{
   int i = 0;
        while (i < 3)
     i++;
        printf("In while loop\n");
     }
```

   a) 2

     b) 3

     c) 4

     d) 1

Answer: c

Explanation: None.

While loop

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

```
#include <stdio.h>
void main()
{
    int i = 0;
    do
    {
        printf("Hello");
    } while (i != 0);
}
```

a) Nothing

b) H is printed infinite times

c) Hello

d) Run time error

View Answer

Answer: c

For loop

60. Which of the following cannot be used as LHS of the expression in for (exp1;exp2; exp3)?

a) variable

b) function

c) typedef

d) macros

Answer: d

If then else statement

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

```
1.  #include <stdio.h>
2.  int main()
3.  {
4.      int x = 0;
5.      if (x++)
6.          printf("true\n");
7.      else if (x == 1)
8.          printf("false\n");
9.  }
```

a) true

b) false

c) compile time error

d) undefined behaviour

Answer: b

If then else statement

62. Which of the following is an invalid if-else statement?

a) if (if (a == 1)){}

b) if (func1 (a)){}

c) if (a){}

d) if ((char) a){}

Answer: a

For loop

64. 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

Switch statements

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

```
#include <stdio.h>
int main()
{
   int a = 1;
        switch (a)
        {
     case a:
       printf("Case A ");
           default:
             printf("Default");
        }
     }
```

a)Output: Case A

b) Output: Default

c) Output: Case A Default

d) Compile time error

Answer: d

Switch statements

65. Which datatype can accept the switch statement?

a) int

b) char

c) long

d) all of the mentioned

Answer: d

Explanation: None.