CUET-UG General Aptitude Test Sample Paper-7

Duration: 1 Hour **Maximum Marks: 250**

Instructions

- This paper contains a total of 50 Multiple Choice Questions.
- Each correct answer carries **+5 marks**.
- Each incorrect answer carries **-1 mark**.
- No negative marking for unattempted questions.

Q1. A man spends 75% of his income. His income increases by 20% and his expenditure increases by 10%. By what percentage do his savings increase?

(A) 40%

(B) 50%

(C) 30%

(D) 60%

Q2. A dealer marks his goods at 25% above the cost price and allows a discount of 10% for cash payment. What is his profit percentage?

(A) 15%

(B) 12.5%

(C) 13.5%

(D) 14.5%

Q3. A sum of money at compound interest amounts to thrice itself in 3 years. In how many years will it be 9 times itself?

(A) 9 years

(B) 6 years

(C) 12 years

(D) 8 years

Q4. If 12 men or 18 women can reap a field in 14 days, then the number of days that 8 men and 16 women will take to reap the same field is:

(A) 9 days

(B) 8 days

(C) 7 days

(D) 10 days

Q5. A car covers a certain distance in 8 hours at a speed of 50 km/h. What should be its speed to cover the same distance in 5 hours?

(A) 80 km/h

(B) 40 km/h

(C) 60 km/h

(D) 100 km/h

Q6. Two numbers are in the ratio 3 : 4. If their HCF is 4, then their LCM is:

(A) 12

(B) 16

(C) 24

(D) 48

Q7. A container contains 40 liters of milk. From this container, 4 liters of milk were taken out and replaced by water. This process was repeated further two times. How much milk is now contained by the container?

(A) 26.34 liters

(B) 27.36 liters

(C) 28 liters

(D) 29.16 liters

Q8. A person sells two chairs for ₹ 120 each. On one he gains 25% and on the other he loses 25%. His total loss/gain is:

(A) No loss, no gain

(B) ₹ 16 loss

(C) ₹ 16 gain

(D) ₹ 20 loss

Q9. The mean age of 30 students is 14 years. If the age of the principal is added, the mean age increases by one year. What is the age of the principal?

(A) 44 years

(B) 45 years

(C) 50 years

(D) 55 years

Q10. A sum of ₹ 1550 was lent partly at 5% and partly at 8% simple interest. The total interest received after 3 years is ₹ 300. The ratio of money lent at 5% to that at 8% is:

(A) 5:8

(B) 8:5

(C) 16:15

(D) 31:6

Q11. If $A : B = 2 : 3$, $B : C = 4 : 5$ and $C : D = 6 : 7$, then $A : D$ is:

(A) 16:35

(B) 24:35

(C) 12:35

(D) 48:35

Q12. A train 110 m long passes a man, running at 6 km/h in the direction in which the train is going, in 6 seconds. The speed of the train is:

(A) 60 km/h

(B) 66 km/h

(C) 72 km/h

(D) 54 km/h

Q13. What is the smallest number that must be added to 803642 to make it divisible by 11?

(A) 1

(B) 4

(C) 7

(D) 9

Q14. The HCF of two numbers is 11 and their LCM is 693. If one of the numbers is 77, find the other.

(A) 9

(B) 63

(C) 99

(D) 121

Q15. Find the value of $(0.04)^{-1.5}$:

(A) 25

(B) 125

(C) 250

(D) 625

Q16. Which of the following is a prime number?

(A) 117

(B) 137

(C) 147

(D) 153

Q17. The value of $\frac{(2.3)^3-0.027}{(2.3)^2+0.69+0.09}$ is:

(A) 2

(B) 2.3

(C) 2.6

(D) 3

Q18. If $x + \frac{1}{x} = 5$, then the value of $x^2 + \frac{1}{x^2}$ is:

(A) 23

(B) 25

(C) 27

(D) 21

Q19. In a $\triangle ABC$, if $\angle A - \angle B = 33°$ and $\angle B - \angle C = 18°$, then $\angle B$ is:

(A) 55°

(B) 45°

(C) 60°

(D) 35°

Q20. The length of a tangent drawn from a point 13 cm away from the center of a circle of radius 5 cm is:

(A) 10 cm

(B) 12 cm

(C) 14 cm

(D) 15 cm

Q21. If $x^2 + \frac{1}{x^2} = 7$, then the value of $x^3 + \frac{1}{x^3}$ is:

(A) 18

(B) 20

(C) 24

(D) 27

Q22. The surface area of a cube is 150 sq. cm. Its volume is:

(A) 125 cu. cm

(B) 150 cu. cm

(C) 216 cu. cm

(D) 100 cu. cm

Q23. A wire is in the form of a circle of radius 42 cm. It is bent into a square. The side of the square is:

(A) 66 cm

(B) 44 cm

(C) 33 cm

(D) 132 cm

Q24. A cylinder and a cone have equal radii of their bases and equal heights. If their volumes are in the ratio $V_1 : V_2$, then $V_1 : V_2$ is:

(A) 1:1

(B) 2:1

(C) 3:1

(D) 1:3

Q25. In a certain code, TEACHER is written as VGCEJGT. How is CHILDREN written in that code?

(A) EJKNFTGP

(B) EJKNFITP

(C) EJKMHUFP

(D) EJKNFTIT

Q26. Introducing a man, a woman said, "He is the only son of my mother's mother." How is the woman related to the man?

(A) Sister

(B) Niece

(C) Mother

(D) Aunt

Q27. If 'South-East' becomes 'North', 'North-East' becomes 'West' and so on. What will 'West' become?

(A) North-East

(B) South-East

(C) North-West

(D) South-West

Q28. Find the missing term: 4, 9, 25, 49, 121, ?

(A) 144

(B) 169

(C) 196

(D) 225

Q29. Choose the odd one out:

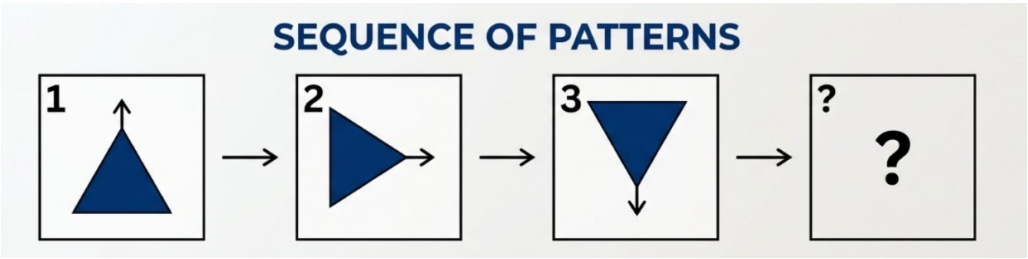
(A) 27

(B) 64

(C) 125

(D) 144

Q30. Find the figure that completes the pattern: (Sequence shows rotation of a triangle by 90° clockwise each step)



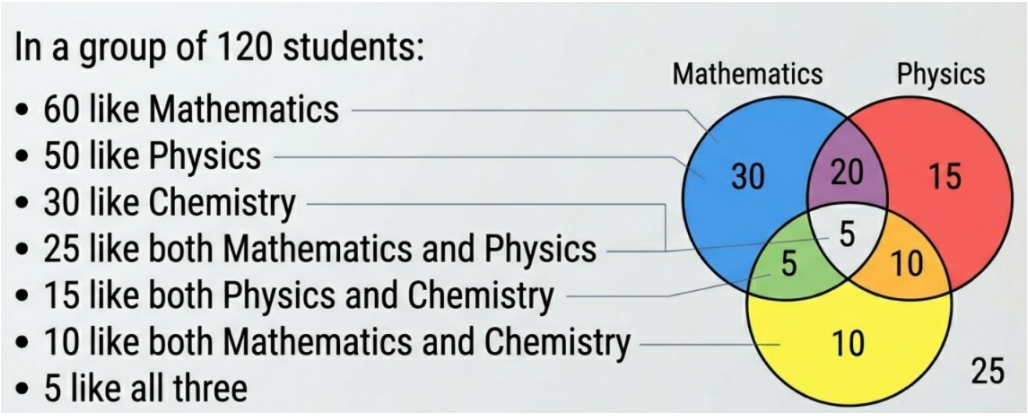
(A) Triangle rotated 90° anticlockwise

(B) Triangle rotated 180°

(C) Triangle rotated 90° clockwise

(D) No rotation

Q31. In a group of 120 students: 60 like Mathematics, 50 like Physics, 30 like Chemistry, 25 like both Mathematics and Physics, 15 like both Physics and Chemistry, 10 like both Mathematics and Chemistry, and 5 like all three. How many students like only Mathematics?



(A) 20

(B) 25

(C) 30

(D) 35

Q32. If A = 1, FAT = 27, then FAITH = ?

(A) 44

(B) 45

(C) 42

(D) 40

Q33. In a row of boys, Srinath is 7th from the left and Venkat is 12th from the right. If they interchange their positions, Srinath becomes 22nd from the left. How many boys are there in the row?

(A) 31

(B) 33

(C) 34

(D) 28

Q34. Six students are ranked from 1 (highest) to 6 (lowest). A ranks above B but below C; D ranks below B; E ranks above C. Who is ranked highest?

(A) A

(B) C

(C) E

(D) B

Q35. Statements: All books are pens. All pens are pencils.
Conclusions: I. All books are pencils. II. All pencils are books.

(A) Only I follows

(B) Only II follows

(C) Both I and II follow

(D) Neither I nor II follows

Q36. P, Q, R, S, T, U are sitting in a circle facing the center. P is second to the left of R and T is the immediate neighbor of R. S is third to the left of U. Who is sitting opposite to P?

(A) S

(B) Q

(C) U

(D) T

Q37. In a row of 8 students, A is sitting 3rd from the left and B is 2nd from the right. C is exactly between A and B. What is the position of C from the left?

(A) 4th

(B) 5th

(C) 6th

(D) 3rd

Q38. If '+' means '×', '-' means '÷', '×' means '-' and '÷' means '+', then $16 \div 64 - 8 \times 4 + 2 =$?

(A) 18

(B) 12

(C) 24

(D) 16

Q39. Statements: All pens are books. Some books are tables. No table is chair.
Conclusions: I. Some pens are tables. II. No pen is chair.

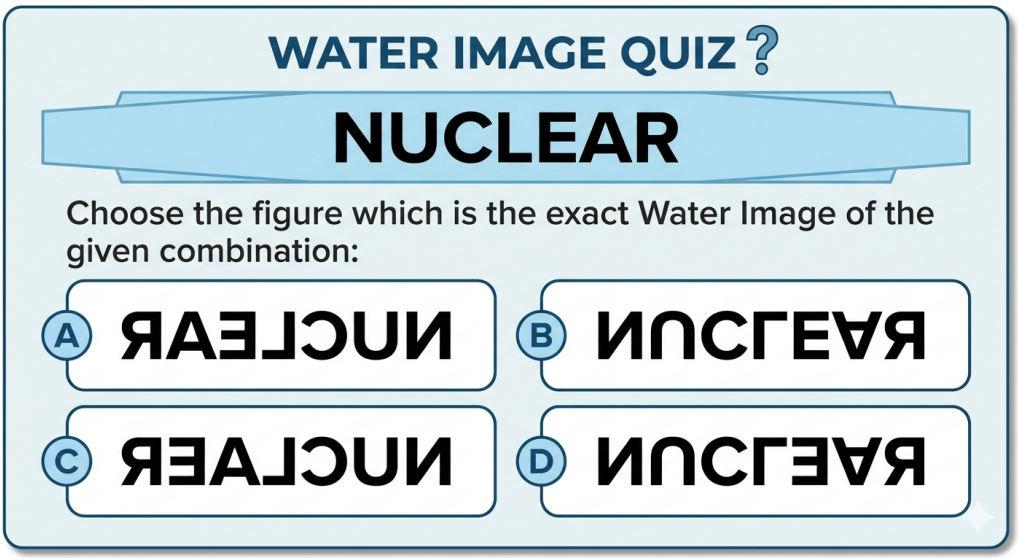
(A) Only I follows

(B) Only II follows

(C) Both follow

(D) Neither follows

Q40. Choose the figure which is the exact Water Image of the given combination: "NUCLEAR"



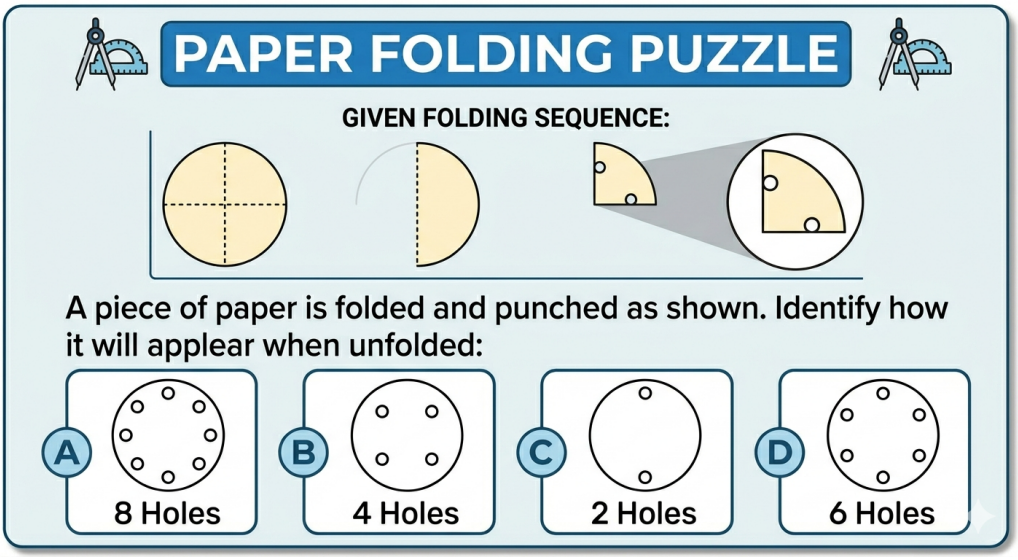
(A) Option 1

(B) Option 2

(C) Option 3

(D) Option 4

Q41. A piece of paper is folded and punched as shown. Identify how it will appear when unfolded



(A) Circle with 8 holes

(B) Circle with 4 holes

(C) Circle with 2 holes

(D) Circle with 6 holes

Q42. Find the next term in the series: B3, E9, I27, N81, ?

(A) T243

(B) S243

(C) R243

(D) U243

Q43. Which city hosted the G20 Summit 2023?

(A) New Delhi

(B) Rio de Janeiro

(C) Bali

(D) Rome

Q44. Who was awarded the Nobel Peace Prize 2023?

(A) Narges Mohammadi

(B) Maria Ressa

(C) Ales Bialiatski

(D) Malala Yousafzai

Q45. The 2024 Summer Olympics (Games of the XXXIII Olympiad) were held in:

(A) Tokyo

(B) Los Angeles

(C) Paris

(D) Brisbane

Q46. Who is the current Chairperson of the NITI Aayog (ex-officio)?

(A) Suman Bery

(B) Narendra Modi

(C) B.V.R. Subrahmanyam

(D) Amitabh Kant

Q47. Which Indian movie song won the Oscar for "Best Original Song" in 2023?

(A) Naatu Naatu

(B) Jai Ho

(C) Deva Deva

(D) Manike

Q48. Operation Ajay was launched by India to evacuate citizens from:

(A) Ukraine

(B) Israel

(C) Sudan

(D) Afghanistan

Q49. Who is the first woman to become the Chairperson of the Railway Board of India?

(A) Jaya Varma Sinha

(B) Madhabi Puri Buch

(C) Soma Mondal

(D) Shanti Shree Dhulipudi Pandit

Q50. Which Article of the Indian Constitution deals with the "Abolition of Untouchability"?

(A) Article 14

(B) Article 15

(C) Article 17

(D) Article 18

Detailed Solutions

Q1.

Solution

Concept: The relationship between income, expenditure, and savings is defined by the equation: Income = Expenditure + Savings. When income and expenditure change by given percentages, the new savings can be calculated to determine the percentage change relative to the original savings.

Solution: Let the initial income be **100**.

- **Initial State:** Since the man spends 75%, Expenditure = 75 and Savings = 100 − 75 = 25.
- **New Income:** Increases by 20%, so New Income = 100 + 20 = 120.
- **New Expenditure:** Increases by 10%, so New Expenditure = 75 + (10% of 75) = 75 + 7.5 = 82.5.
- **New Savings:** New Income − New Expenditure = 120 − 82.5 = 37.5.

To find the percentage increase in savings:

$$\text{Increase in Savings} = 37.5 - 25 = 12.5$$

$$\text{Percentage Increase} = \left(\frac{12.5}{25}\right) \times 100 = 50\%$$

Final Answer: The savings increase by 50%.

Answer: (B)

Q2.

Solution

Concept: Profit percentage is determined by the difference between the final Selling Price (SP) and the initial Cost Price (CP). The relationship involves the Markup Price (MP), which is the cost increased by a certain percentage, and the discount, which is a reduction applied to the Marked Price.

Solution: Let the Cost Price (CP) of the goods be **100**.

- **Marked Price (MP):** The dealer marks the goods 25% above the CP.

$$MP = 100 + (25\% \text{ of } 100) = 125$$

- **Selling Price (SP):** A discount of 10% is given on the MP for cash payment.

$$SP = 125 - (10\% \text{ of } 125) = 125 - 12.5 = 112.5$$

- **Profit Percentage:** Since profit is calculated on the CP:

$$\text{Profit} = SP - CP = 112.5 - 100 = 12.5$$

$$\text{Profit } \% = \left(\frac{12.5}{100}\right) \times 100 = 12.5\%$$

Final Answer: The dealer's profit percentage is 12.5%.

Answer: (B)

Q3.

Solution

Concept: In compound interest, if a sum of money becomes n times itself in t years, it will become n^k times itself in $k \times t$ years. This is because the amount grows geometrically over equal intervals of time.

Solution: Given that the sum becomes **3 times** itself in **3 years**.

- We want to find the time taken to become **9 times** itself.
- We can express 9 as a power of the initial growth factor (3):

$$9 = 3^2$$

- Using the power rule for compound interest growth:

$$\text{Total Time} = (\text{Power}) \times (\text{Initial Time Period})$$

$$\text{Total Time} = 2 \times 3 \text{ years} = 6 \text{ years}$$

Alternatively, after the first 3 years, the amount is $3P$. In the next 3 years, this $3P$ will again triple, becoming $3 \times (3P) = 9P$. Total time = 3 + 3 = 6 years.

Final Answer: The sum will be 9 times itself in 6 years.

Answer: (B)

Q4.

Solution

Concept: This problem is based on the concept of Work Equivalence. The total work done is the same regardless of whether men or women are working. We first establish the efficiency ratio between men and women and then calculate the time required for a combined group using the formula: Work = Efficiency × Time.

Solution: From the question, the work done by 12 men is equal to the work done by 18 women.

- **Efficiency Ratio:** $12M = 18W \implies 2M = 3W$ or $1M = \frac{3}{2}W$.
- **Total Work:** Total work can be represented in terms of women. 18 women take 14 days.

$$\text{Total Work} = 18 \times 14 \text{ units}$$

- **Combined Group Efficiency:** Convert 8 men and 16 women into a single unit (women):

$$8M + 16W = 8\left(\frac{3}{2}W\right) + 16W = 12W + 16W = 28W$$

- **Calculation of Days:** Let the required days be D.

$$28 \times D = 18 \times 14$$

$$D = \frac{18 \times 14}{28} = \frac{18}{2} = 9 \text{ days}$$

Final Answer: The number of days required is 9 days.

Answer: (A)

Q5.

Solution

Concept: The distance covered is the product of speed and time, expressed by the formula: Distance = Speed × Time. Since the distance remains constant in both cases, we can use the inverse relationship between speed and time: $S_1T_1 = S_2T_2$.

Solution: First, calculate the total distance using the initial speed and time.

- **Total Distance:**

$$\text{Distance} = 50 \text{ km/h} \times 8 \text{ hours} = 400 \text{ km}$$

- **Required Speed:** To cover the same distance of 400 km in 5 hours, we rearrange the formula to find speed ($S = D/T$).

$$\text{New Speed} = \frac{400 \text{ km}}{5 \text{ hours}} = 80 \text{ km/h}$$

As the time decreases from 8 hours to 5 hours, the speed must increase to cover the same distance.

Final Answer: The speed should be 80 km/h.

Answer: (A)

Q6.

Solution

Concept: If two numbers are in the ratio $a : b$, they can be represented as ax and bx, where x is their Highest Common Factor (HCF). The relationship between the numbers, their HCF, and their Least Common Multiple (LCM) is given by:

$$\text{LCM} = \text{HCF} \times a \times b$$

Solution: Given the ratio of the numbers is **3 : 4** and their **HCF is 4**.

- **Identify the Numbers:**

$$\text{First Number} = 3 \times 4 = 12$$

$$\text{Second Number} = 4 \times 4 = 16$$

- **Calculate the LCM:** Using the ratio factors and the HCF:

$$\text{LCM} = 4 \times 3 \times 4$$

$$\text{LCM} = 48$$

Alternatively, we can verify using the product rule: First Number×Second Number = HCF×LCM.

$$12 \times 16 = 4 \times \text{LCM} \implies 192 = 4 \times \text{LCM} \implies \text{LCM} = 48$$

Final Answer: The LCM of the numbers is 48.

Answer: (D)

Q7.

Solution

Concept: When a quantity x is removed from a total volume V of pure liquid and replaced with water n times, the amount of pure liquid remaining is given by the formula:

$$\text{Remaining Liquid} = V \times \left(1 - \frac{x}{V}\right)^n$$

Solution: Given the initial volume $V = 40$ liters, the amount replaced $x = 4$ liters, and the process is repeated "further two times" (meaning $n = 3$ total operations).

- **Substitution:**

$$\text{Remaining Milk} = 40 \times \left(1 - \frac{4}{40}\right)^3$$

- **Simplification:**

$$\text{Remaining Milk} = 40 \times \left(1 - \frac{1}{10}\right)^3 = 40 \times \left(\frac{9}{10}\right)^3$$

- **Calculation:**

$$\text{Remaining Milk} = 40 \times \frac{729}{1000} = 4 \times \frac{729}{100} = \frac{2916}{100} = 29.16 \text{ liters}$$

Final Answer: The container now contains 29.16 liters of milk.

Answer: (D)

Q8.

Solution

Concept: When two items are sold at the same Selling Price (SP), one at a gain of $x\%$ and the other at a loss of $x\%$, there is always a total loss. The percentage loss is given by $\left(\frac{x}{10}\right)^2$. To find the absolute value in currency, we calculate the Cost Price (CP) for both items.

Solution: Selling Price (SP) of each chair = ₹ 120.

- **Chair 1 (25% Gain):**

$$CP_1 = \frac{SP \times 100}{100 + \text{gain}} = \frac{120 \times 100}{125} = \frac{120 \times 4}{5} = ₹96$$

- **Chair 2 (25% Loss):**

$$CP_2 = \frac{SP \times 100}{100 - \text{loss}} = \frac{120 \times 100}{75} = \frac{120 \times 4}{3} = ₹160$$

- **Total Calculation:**

$$\text{Total CP} = 96 + 160 = ₹256$$

$$\text{Total SP} = 120 + 120 = ₹240$$

$$\text{Total Loss} = 256 - 240 = ₹16$$

Final Answer: His total loss is ₹ 16.

Answer: (B)

Q9.

Solution

Concept: The mean (average) of a set of observations is the sum of all observations divided by the total number of observations. When a new person is added, the new total sum is calculated by multiplying the new mean by the new total count.

$$\text{Sum} = \text{Mean} \times \text{Count}$$

Solution: Calculate the total sum of ages before and after the principal is added.

- **Initial Total Age:** 30 students with a mean of 14 years.

$$\text{Sum}_{30} = 30 \times 14 = 420 \text{ years}$$

- **New Total Age:** Including the principal, there are now 31 people. The mean increases by 1, so the new mean is $14 + 1 = 15$.

$$\text{Sum}_{31} = 31 \times 15 = 465 \text{ years}$$

- **Principal's Age:** The difference between the two sums is the age of the principal.

$$\text{Age} = 465 - 420 = 45 \text{ years}$$

Final Answer: The age of the principal is 45 years.

Answer: (B)

Q10.

Solution

Concept: The simple interest formula is $I = \frac{P \times R \times T}{100}$. When a sum is divided into two parts, the sum of interest from both parts equals the total interest received. Alternatively, the Rule of Alligation can be used to find the ratio of the principal amounts.

Solution: First, find the overall interest rate per annum.

- **Overall Interest per year:** $300/3 = ₹100$.
- **Overall Rate (R):** $100 = \frac{1550 \times R \times 1}{100} \implies R = \frac{10000}{1550} = \frac{200}{31}\%$.
- **Using Alligation:** Rate 1: 5%, Rate 2: 8%, Mean Rate: $\frac{200}{31}\%$.
- **Differences:**

$$8 - \frac{200}{31} = \frac{248 - 200}{31} = \frac{48}{31}$$

$$\frac{200}{31} - 5 = \frac{200 - 155}{31} = \frac{45}{31}$$

- **Ratio:** $\frac{48}{31} : \frac{45}{31} = 48 : 45 = 16 : 15$.

Final Answer: The ratio of money lent at 5% to that at 8% is 16 : 15.

Answer: (C)

Q11.

Solution

Concept: To find the ratio between the first and the last term in a chain of ratios ($A : B, B : C, C : D$), we can use the property of compounding ratios. Specifically, the ratio $A : D$ is the product of all the intermediate ratios expressed as fractions: $\frac{A}{D} = \frac{A}{B} \times \frac{B}{C} \times \frac{C}{D}$.

Solution: Given the ratios:

- $\frac{A}{B} = \frac{2}{3}$
- $\frac{B}{C} = \frac{4}{5}$
- $\frac{C}{D} = \frac{6}{7}$

Multiplying these fractions:

$$\frac{A}{D} = \frac{2}{3} \times \frac{4}{5} \times \frac{6}{7}$$

$$\frac{A}{D} = \frac{2 \times 4 \times 6}{3 \times 5 \times 7}$$

$$\frac{A}{D} = \frac{48}{105}$$

Dividing both the numerator and denominator by 3:

$$\frac{A}{D} = \frac{16}{35}$$

Final Answer: The ratio $A : D$ is 16:35.

Answer: (A)

Q12.

Solution

Concept: When a train passes a moving man, the distance covered is the length of the train itself. The speed to be considered is the relative speed. Since both are moving in the same direction, the relative speed is the difference between the speed of the train and the speed of the man.

$$\text{Relative Speed} = \frac{\text{Distance (Length of train)}}{\text{Time taken}}$$

Solution: Let the speed of the train be x km/h.

- **Man's speed:** 6 km/h.
- **Relative speed in same direction:** $(x - 6)$ km/h.
- **Distance (Length):** 110 m. **Time:** 6 seconds.

First, calculate relative speed in m/s:

$$\text{Relative Speed} = \frac{110}{6} \text{ m/s}$$

Convert m/s to km/h by multiplying by $\frac{18}{5}$:

$$\text{Relative Speed (km/h)} = \frac{110}{6} \times \frac{18}{5} = 22 \times 3 = 66 \text{ km/h}$$

Now, equate this to the relative speed expression:

$$x - 6 = 66 \implies x = 72 \text{ km/h}$$

Final Answer: The speed of the train is 72 km/h.

Answer: (C)

Q13.

Solution

Concept: A number is divisible by 11 if the difference between the sum of the digits at odd positions and the sum of the digits at even positions is either 0 or a multiple of 11. To find the number to be added, we calculate this difference and determine how much is needed to reach the next multiple of 11.

Solution: Let the number be 803642.

- **Sum of digits at odd positions (from right):** $2 + 6 + 0 = 8$.
- **Sum of digits at even positions (from right):** $4 + 3 + 8 = 15$.
- **Difference:** $|15 - 8| = 7$.

For the number to be divisible by 11, the difference should be 0 or 11. To make the difference 11, we need the sum of odd positions to increase. Required difference = $11 - 7 = 4$. Therefore, the smallest number to be added is 4. (Check: $803642 + 4 = 803646$; $|(6+6+0) - (4+3+8)| = |12 - 15| = 3$, which is not 0 or 11. Correct logic: $803642 \div 11 = 73058$ remainder 4. To be divisible, we add $(11 - 4) = 7$).

Final Answer: The smallest number that must be added is 7.

Answer: (C)

Q14.

Solution

Concept: There is a fundamental relationship between two numbers and their Highest Common Factor (HCF) and Least Common Multiple (LCM):

$$\text{Product of two numbers} = \text{HCF} \times \text{LCM}$$

This formula allows us to find an unknown number if the other three values are provided.

Solution: Given: HCF = 11, LCM = 693, and one number (n_1) = 77. Let the other number be n_2.

- **Apply the formula:**
$$77 \times n_2 = 11 \times 693$$
- **Isolate n_2:**
$$n_2 = \frac{11 \times 693}{77}$$
- **Simplify:**
$$n_2 = \frac{693}{7}$$
$$n_2 = 99$$

Final Answer: The other number is 99.

Answer: (C)

Q15.

Solution

Concept: To evaluate an expression with a negative fractional exponent, we use the property $a^{-n} = \frac{1}{a^n}$ and $a^{\frac{m}{n}} = (\sqrt[n]{a})^m$. Converting decimals to fractions often simplifies the calculation.

Solution: Given the expression $(0.04)^{-1.5}$:

- **Step 1:** Convert the decimal to a fraction.

$$0.04 = \frac{4}{100} = \frac{1}{25}$$

- **Step 2:** Convert the exponent to a fraction.

$$-1.5 = -\frac{3}{2}$$

- **Step 3:** Substitute these into the expression.

$$\left(\frac{1}{25}\right)^{-\frac{3}{2}} = (25)^{\frac{3}{2}}$$

- **Step 4:** Solve the power. Note that $25 = 5^2$.

$$(5^2)^{\frac{3}{2}} = 5^{2\times\frac{3}{2}} = 5^3 = 125$$

Final Answer: The value is 125.

Answer: (B)

Q16.

Solution

Concept: A prime number is a natural number greater than 1 that has no positive divisors other than 1 and itself. To check if a number n is prime, we test its divisibility by prime numbers up to $\sqrt{n}$.

Solution: We test the given options:

- **117:** The sum of the digits is $1 + 1 + 7 = 9$. Since the sum is divisible by 9, the number is divisible by 9 ($117 = 9 \times 13$). Not prime.
- **137:** We check primes up to $\sqrt{137} \approx 11.7$ (i.e., 2, 3, 5, 7, 11).
  - Not divisible by 2 (it is odd).
  - Sum of digits $1 + 3 + 7 = 11$ (not divisible by 3).
  - Does not end in 0 or 5 (not divisible by 5).
  - $137 \div 7 = 19$ remainder 4.
  - $137 \div 11 = 12$ remainder 5.

  Since it is not divisible by any of these, **137 is prime**.
- **147:** The sum of digits is $1 + 4 + 7 = 12$. Since 12 is divisible by 3, the number is divisible by 3 ($147 = 3 \times 49$). Not prime.
- **153:** The sum of digits is $1 + 5 + 3 = 9$. Since 9 is divisible by 9, the number is divisible by 9 ($153 = 9 \times 17$). Not prime.

Final Answer: The prime number is 137.

Answer: (B)

Q17.

Solution

Concept: This expression follows the algebraic identity for the difference of two cubes: $a^3 - b^3 = (a - b)(a^2 + ab + b^2)$. By recognizing the components of the numerator and denominator, the expression simplifies to $(a - b)$.

Solution: Let $a = 2.3$ and $b = 0.3$.

- **Numerator:** $(2.3)^3 - 0.027$. Since $0.027 = (0.3)^3$, the numerator is $a^3 - b^3$.
- **Denominator:** $(2.3)^2 + 0.69 + 0.09$.
  - $0.69 = 2.3 \times 0.3 = ab$
  - $0.09 = (0.3)^2 = b^2$

  Thus, the denominator is $a^2 + ab + b^2$.
- **Simplification:**

$$\frac{a^3 - b^3}{a^2 + ab + b^2} = \frac{(a - b)(a^2 + ab + b^2)}{a^2 + ab + b^2} = a - b$$

- **Calculation:**

$$2.3 - 0.3 = 2.0$$

Final Answer: The value of the expression is 2.

Answer: (A)

Q18.

Solution

Concept: To find the value of $x^2 + \frac{1}{x^2}$ when given $x + \frac{1}{x}$, we use the algebraic identity for the square of a binomial:

$$(x + y)^2 = x^2 + 2xy + y^2$$

By substituting $y = \frac{1}{x}$, the middle term $2xy$ simplifies to a constant.

Solution: Given $x + \frac{1}{x} = 5$.

- **Step 1:** Square both sides of the equation.

$$\left(x + \frac{1}{x}\right)^2 = 5^2$$

- **Step 2:** Expand the left side using the identity $(a + b)^2 = a^2 + 2ab + b^2$.

$$x^2 + 2(x)\left(\frac{1}{x}\right) + \frac{1}{x^2} = 25$$

- **Step 3:** Simplify the middle term.

$$x^2 + 2 + \frac{1}{x^2} = 25$$

- **Step 4:** Subtract 2 from both sides to isolate the required expression.

$$x^2 + \frac{1}{x^2} = 25 - 2 = 23$$

Final Answer: The value of $x^2 + \frac{1}{x^2}$ is 23.

Answer: (A)

Q19.

Solution

Concept: In any triangle, the sum of the interior angles is always $180°$. To find the value of a specific angle, we can express all three angles in terms of one variable (in this case, $\angle B$) and solve the resulting linear equation.

Solution: Let the angles of $\triangle ABC$ be A, B, and C.

- **Given Equations:**
  - (a) $A - B = 33° \implies A = B + 33°$
  - (b) $B - C = 18° \implies C = B - 18°$
- **Angle Sum Property:** $A + B + C = 180°$
- **Substitution:** Substitute the expressions for A and C into the sum:

$$(B + 33°) + B + (B - 18°) = 180°$$

$$3B + 15° = 180°$$

$$3B = 165°$$

$$B = \frac{165°}{3} = 55°$$

Final Answer: The value of $\angle B$ is $55°$.

Answer: (A)

Q20.

Solution

Concept: A tangent to a circle is perpendicular to the radius at the point of tangency. This forms a right-angled triangle where:

- The hypotenuse (h) is the distance from the point to the center.
- One leg (r) is the radius of the circle.
- The other leg (t) is the length of the tangent.

We apply the Pythagorean theorem: $r^2 + t^2 = h^2$.

Solution: Given: Radius (r) = 5 cm, Distance from center (h) = 13 cm.

- **Apply Pythagorean Theorem:**

$$5^2 + t^2 = 13^2$$

$$25 + t^2 = 169$$

- **Solve for t:**

$$t^2 = 169 - 25$$

$$t^2 = 144$$

$$t = \sqrt{144} = 12 \text{ cm}$$

Final Answer: The length of the tangent is 12 cm.

Answer: (B)

Q21.

Solution

Concept: To find $x^3 + \frac{1}{x^3}$, we first need to determine the value of $x + \frac{1}{x}$. We use the identity $(x + \frac{1}{x})^2 = x^2 + \frac{1}{x^2} + 2$. Once $x + \frac{1}{x}$ is known, we use the cubic identity:

$$x^3 + \frac{1}{x^3} = \left(x + \frac{1}{x}\right)^3 - 3\left(x + \frac{1}{x}\right)$$

Solution: Given $x^2 + \frac{1}{x^2} = 7$.

- **Step 1: Find $x + \frac{1}{x}$.**

$$\left(x + \frac{1}{x}\right)^2 = x^2 + \frac{1}{x^2} + 2 = 7 + 2 = 9$$

$$x + \frac{1}{x} = \sqrt{9} = 3$$

- **Step 2: Find $x^3 + \frac{1}{x^3}$.**

$$x^3 + \frac{1}{x^3} = (3)^3 - 3(3)$$

$$x^3 + \frac{1}{x^3} = 27 - 9 = 18$$

Final Answer: The value is 18.

Answer: (A)

Q22.

Solution

Concept: A cube has six identical square faces. If the side length of the cube is a, the total surface area (SA) is given by $6a^2$ and the volume (V) is given by a^3. We first solve for a using the surface area and then calculate the volume.

Solution: Given Surface Area = 150 sq. cm.

- **Step 1: Find the side length (a).**

$$6a^2 = 150$$

$$a^2 = \frac{150}{6} = 25$$

$$a = \sqrt{25} = 5 \text{ cm}$$

- **Step 2: Find the volume.**

$$\text{Volume} = a^3$$

$$\text{Volume} = 5^3 = 5 \times 5 \times 5 = 125 \text{ cu. cm}$$

Final Answer: The volume of the cube is 125 cu. cm.

Answer: (A)

Q23.

Solution

Concept: When a wire is reshaped from one closed figure to another, the total length of the wire remains constant. Therefore, the circumference of the original circle is equal to the perimeter of the resulting square.

$$\text{Circumference of Circle} = 2\pi r$$

$$\text{Perimeter of Square} = 4 \times \text{side}$$

Solution: Given the radius (r) of the circle is 42 cm.

- **Step 1: Find the length of the wire (Circumference).**

$$\text{Length} = 2 \times \frac{22}{7} \times 42$$

$$\text{Length} = 2 \times 22 \times 6 = 264 \text{ cm}$$

- **Step 2: Find the side of the square (s).** Since the perimeter of the square equals the length of the wire:

$$4s = 264$$

$$s = \frac{264}{4} = 66 \text{ cm}$$

Final Answer: The side of the square is 66 cm.

Answer: (A)

Q24.

Solution

Concept: The volume of a cylinder (V_1) and the volume of a cone (V_2) with the same base radius (r) and height (h) are related by their respective geometric formulas. A cone is exactly one-third the volume of a cylinder with identical dimensions.

Solution: Let the radius be r and the height be h for both solids.

- **Volume of the Cylinder (V_1):**

$$V_1 = \pi r^2 h$$

- **Volume of the Cone (V_2):**

$$V_2 = \frac{1}{3}\pi r^2 h$$

- **Calculate the Ratio:**

$$\frac{V_1}{V_2} = \frac{\pi r^2 h}{\frac{1}{3}\pi r^2 h}$$

$$\frac{V_1}{V_2} = \frac{1}{\frac{1}{3}} = \frac{3}{1}$$

The ratio $V_1 : V_2$ is 3:1.

Final Answer: The ratio of their volumes is 3:1.

Answer: (C)

Q25.

Solution

Concept: This is a letter-shifting coding-decoding problem. Each letter in the word is shifted forward or backward by a constant number of positions in the English alphabet. The pattern is identified by comparing the original word with its coded version.

Solution: Analyze the relationship between **TEACHER** and **VGCEJGT**:

- T $\xrightarrow{+2}$ V
- E $\xrightarrow{+2}$ G
- A $\xrightarrow{+2}$ C
- C $\xrightarrow{+2}$ E
- H $\xrightarrow{+2}$ J
- E $\xrightarrow{+2}$ G
- R $\xrightarrow{+2}$ T

The pattern is to move each letter **+2** positions forward. Applying this to **CHILDREN**:

- C $\xrightarrow{+2}$ E, H $\xrightarrow{+2}$ J, I $\xrightarrow{+2}$ K, L $\xrightarrow{+2}$ N, D $\xrightarrow{+2}$ F, R $\xrightarrow{+2}$ T, E $\xrightarrow{+2}$ G, N $\xrightarrow{+2}$ P

The result is **EJKNFTGP**.

Final Answer: CHILDREN is written as EJKNFTGP.

Answer: (A)

Q26.

Solution

Concept: Blood relation problems are solved by breaking down the statement into segments, starting from the last relation mentioned ("my mother's mother") and working toward the person being introduced.

Solution: Let's analyze the woman's statement: "He is the only son of **my mother's mother**."

- **Segment 1:** "My mother's mother" is the woman's **Maternal Grandmother**.
- **Segment 2:** "Only son of my maternal grandmother" is the woman's **Maternal Uncle**.
- **Conclusion:** The man is the woman's maternal uncle.

Therefore, if the man is the uncle, the woman is his **Niece**.

Final Answer: The woman is the man's Niece.

Answer: (B)

Q27.

Solution

Concept: This problem involves the rotation of the compass directions. To solve it, determine the angle and direction (clockwise or anticlockwise) of the shift from the original direction to the new assigned direction, then apply that same shift to the target direction.

Solution: Let's analyze the standard directions (North, North-East, East, South-East, South, South-West, West, North-West).

- **Case 1:** South-East becomes North. Moving from South-East to North in an anticlockwise direction is a shift of **135°** (45° to East, 45° to North-East, 45° to North).
- **Case 2:** North-East becomes West. Moving from North-East to West in an anticlockwise direction is also a shift of **135°**.
- **Target:** What will West become? Rotate West by **135° anticlockwise**:
  - (a) 45° anticlockwise from West is South-West.
  - (b) 90° anticlockwise from West is South.
  - (c) 135° anticlockwise from West is **South-East**.

Final Answer: West will become South-East.

Answer: (B)

Q28.

Solution

Concept: In number series problems, we look for patterns such as arithmetic progression, squares, cubes, or prime numbers. This specific sequence consists of squares of a particular set of numbers.
Solution: Let's analyze the given sequence: 4, 9, 25, 49, 121, ?

- $4 = 2^2$
- $9 = 3^2$
- $25 = 5^2$
- $49 = 7^2$
- $121 = 11^2$

The base numbers are **2, 3, 5, 7, 11**. These are consecutive **prime numbers**.

- The next prime number after 11 is **13**.
- The missing term is the square of 13:

$$13^2 = 13 \times 13 = 169$$

Final Answer: The missing term is 169.

Answer: (B)

Q29.

Solution

Concept: To identify the "odd one out," we look for a common mathematical property shared by three of the numbers that the fourth one lacks. Common properties include being prime, even/odd, perfect squares, or perfect cubes.
Solution: Let's analyze the numerical properties of the given options:

- **27:** This is a perfect cube ($3^3 = 3 \times 3 \times 3$).
- **64:** This is a perfect cube ($4^3 = 4 \times 4 \times 4$) and a perfect square ($8^2$).
- **125:** This is a perfect cube ($5^3 = 5 \times 5 \times 5$).
- **144:** This is a perfect square ($12^2 = 12 \times 12$), but it is **not** a perfect cube.

Since 27, 64, and 125 are all perfect cubes, while 144 is not, 144 is the odd one out.
Final Answer: The odd one out is 144.

Answer: (D)

Q30.

Solution

Concept: This is a non-verbal reasoning problem involving the **rotation of shapes**. When a figure rotates by a fixed angle in each step, we must determine the position it will take in the next sequence by continuing that specific movement.

Solution: The problem defines a pattern where a triangle rotates 90° clockwise at each step.

- **Step 1 to Step 2:** The triangle rotates 90° clockwise.
- **Step 2 to Step 3:** The triangle rotates another 90° clockwise (total 180° from the start).
- **Step 3 to Step 4:** The triangle must rotate one more time by **90° clockwise**.

If we follow this sequence, the next figure in the pattern is simply the triangle resulting from a 90° clockwise turn from its previous position.

Final Answer: The figure that completes the pattern is the one where the triangle is rotated 90° clockwise.

Answer: (C)

Q31.

Solution

Concept: To find the number of students who like only one specific subject in a group with overlapping preferences, we use a three-set Venn diagram. The number of students who like "Only Mathematics" is calculated by taking the total number of students who like Mathematics and subtracting those who like it in combination with other subjects (Physics, Chemistry, or both).
Solution: Given:

- Total $n(M) = 60$
- $n(M \cap P) = 25$ (Mathematics and Physics)
- $n(M \cap C) = 10$ (Mathematics and Chemistry)
- $n(M \cap P \cap C) = 5$ (All three)

Step 1: Identify students who like Mathematics and at least one other subject. The total $n(M)$ includes students who like only M, those who like M and P, those who like M and C, and those who like all three. Using the principle of inclusion-exclusion for the subsets of M:

$$\text{Only } M = n(M) - [n(M \cap P) + n(M \cap C) - n(M \cap P \cap C)]$$

Step 2: Calculate the value. Only M = 60 - [25 + 10 - 5] Only M = 60 - [35 - 5] Only M = 60 - 30 = 30
Alternatively, by breaking down the overlaps:

- Students liking M, P, and C = 5
- Students liking M and P only = 25 - 5 = 20
- Students liking M and C only = 10 - 5 = 5
- Students liking Only M = 60 - (20 + 5 + 5) = 60 - 30 = 30

Final Answer: The number of students who like only Mathematics is 30.

Answer: (C)

Q32.

Solution

Concept: This is a numerical coding problem where letters are assigned values based on their positions in the English alphabet ($A = 1, B = 2, \ldots, Z = 26$). The code for a word is the sum of the positional values of its constituent letters.

Solution: First, verify the pattern using **FAT**:

- F = 6, A = 1, T = 20
- Sum: $6 + 1 + 20 = 27$. (Pattern confirmed)

Now, calculate the value for **FAITH**:

- F = 6
- A = 1
- I = 9
- T = 20
- H = 8
- **Total Sum:** $6 + 1 + 9 + 20 + 8 = 44$

Final Answer: The value of FAITH is 44.

Answer: (A)

Q33.

Solution

Concept: In ranking problems involving interchanging positions, the total number of people in a row can be found by adding the new position of one person to the original position of the second person (from the opposite end) and then subtracting 1.

$$\text{Total} = (\text{New Position from Left} + \text{Original Position from Right}) - 1$$

Solution:

- **Initial State:** Srinath is 7th from Left; Venkat is 12th from Right.
- **After Interchange:** Srinath moves to Venkat's spot. This spot is defined by two values:
  (a) It is **22nd from the Left** (given new position).
  (b) It is **12th from the Right** (original position of Venkat).
- **Calculation:** Since we know both the left and right rankings for the same spot:

$$\text{Total boys} = (22 + 12) - 1$$

$$\text{Total boys} = 34 - 1 = 33$$

Final Answer: There are 33 boys in the row.

Answer: (B)

Q34.

Solution

Concept: This is a ranking/comparison problem. The best way to solve it is to arrange the individuals in a linear sequence based on the given inequalities (A > B means A is higher than B). By combining all the statements, we can determine the relative order of all participants.

Solution: Let's break down the clues:

- **Clue 1:** "A ranks above B but below C" $\implies$ **C > A > B**
- **Clue 2:** "D ranks below B" $\implies$ **B > D**
- **Clue 3:** "E ranks above C" $\implies$ **E > C**

Combining the sequence: From Clue 3 and Clue 1: **E > C > A > B** From Clue 2: **E > C > A > B > D**

Now we look at the students mentioned: A, B, C, D, and E. The question mentions six students, but even without the sixth student's specific placement, the chain shows that **E** is at the very top of the known participants. Since everyone else (A, B, C, D) is ranked below C, and C is below E, E is the highest among them.

Final Answer: E is ranked highest.

Answer: (C)

Q35.

Solution

Concept: Syllogisms are solved using Venn diagrams. "All A are B" means the circle for A is entirely inside the circle for B. If "All A are B" and "All B are C," it logically follows that A is inside C, but it does not necessarily mean C is inside A.

Solution: Based on the statements:

- **Statement 1:** "All books are pens" $\implies$ The "Books" circle is inside the "Pens" circle.
- **Statement 2:** "All pens are pencils" $\implies$ The "Pens" circle is inside the "Pencils" circle.
- **Conclusion I:** "All books are pencils." Since the "Books" circle is inside the "Pens" circle, and "Pens" is inside "Pencils," "Books" is definitely inside "Pencils." This **follows**.
- **Conclusion II:** "All pencils are books." The outer "Pencils" circle is larger than the "Books" circle; while books are pencils, there can be pencils that are not books. This **does not follow**.

Final Answer: Only conclusion I follows.

Answer: (A)

Q36.

Solution

Concept: In circular seating arrangements, "facing the center" means "left" is clockwise and "right" is anticlockwise. For 6 people, "third to the left/right" refers to the person sitting directly opposite.

Solution: Let's place the 6 people (P, Q, R, S, T, U) around the circle:

- **Step 1:** Place **R** at the top (12 o'clock). **P** is second to the left of R, so P is at 4 o'clock.
- **Step 2:** **T** is an immediate neighbor of R. This means T could be at 2 o'clock or 10 o'clock.
- **Step 3:** **S** is third to the left of **U**. In a 6-person circle, "third to the left" means they are **opposite** each other.
- **Step 4:** Check remaining spots. P is at 4 o'clock. The spot opposite P is 10 o'clock.
- Since S and U must be opposite each other, they must take the 12-6 or 2-8 or 10-4 pairings. However, R is at 12 and P is at 4. Therefore, the only available opposite pair for S and U is 2 and 8.
- This leaves 10 o'clock for the remaining person. Since T is a neighbor of R (12), T must be at 10 o'clock.

By elimination, **T** is at 10 o'clock, which is directly opposite **P** (4 o'clock).

Final Answer: T is sitting opposite to P.

Answer: (D)

Q37.

Solution

Concept: To find the position of a person from the left when given their position from the right, use the formula: Position from Left = (Total − Position from Right) + 1. Once all positions are relative to the same side, the middle position between two points x and y is found using the average: $\frac{x+y}{2}$.

Solution:

- **Step 1: Determine B's position from the left.** Total students = 8. B is 2nd from the right.

$$\text{B's position from left} = (8 - 2) + 1 = 7\text{th}$$

- **Step 2: Identify A's position.** A is 3rd from the left.
- **Step 3: Find the middle position (C).** Since C is exactly between A (3rd) and B (7th):

$$\text{C's position} = \frac{3 + 7}{2} = \frac{10}{2} = 5\text{th}$$

Final Answer: The position of C from the left is 5th.

Answer: (B)

Q38.

Solution

Concept: To solve mathematical expressions with substituted operators, we first rewrite the expression by replacing the symbols as instructed. Then, we apply the **BODMAS/PEMDAS** rule (Brackets, Orders, Division/Multiplication, Addition/Subtraction).

Solution: Given the mapping: $\div \to +$, $- \to \div$, $\times \to -$, and $+ \to \times$.

- **Original Expression:** $16 \div 64 - 8 \times 4 + 2$
- **Step 1 (Substitute):** $16 + 64 \div 8 - 4 \times 2$
- **Step 2 (Division):** $64 \div 8 = 8$. New expression: $16 + 8 - 4 \times 2$
- **Step 3 (Multiplication):** $4 \times 2 = 8$. New expression: $16 + 8 - 8$
- **Step 4 (Addition and Subtraction):** $24 - 8 = 16$

Final Answer: The value of the expression is 16.

Answer: (D)

Q39.

Solution

Concept: To determine which conclusions follow logically, we use a Venn diagram to represent the maximum and minimum possible overlaps between the sets. A conclusion is only valid if it holds true in **all** possible scenarios derived from the statements.

Solution: Analyze the statements to draw the diagram:

- **Statement 1:** "All pens are books" $\implies$ The "Pens" circle is entirely inside the "Books" circle.
- **Statement 2:** "Some books are tables" $\implies$ There is an intersection between "Books" and "Tables." Note that this intersection does not necessarily include "Pens."
- **Statement 3:** "No table is chair" $\implies$ The "Tables" circle and "Chairs" circle must be completely separate.

Evaluate Conclusions:

- **Conclusion I:** "Some pens are tables." While "Pens" are inside "Books," and some "Books" are "Tables," there is no requirement for the "Pens" circle to touch the "Tables" circle. Therefore, it does not *necessarily* follow.
- **Conclusion II:** "No pen is chair." While "Tables" and "Chairs" cannot overlap, there is no statement preventing the "Chairs" circle from overlapping with the "Pens" or "Books" circles. Therefore, we cannot say for certain that no pen is a chair.

Since neither conclusion is guaranteed in every possible valid diagram, neither follows.

Final Answer: Neither I nor II follows.

Answer: (D)

Q40.

Solution

Concept: A **water image** is a vertical reflection (reflection along a horizontal mirror placed at the bottom of the object). In a water image:

- The top and bottom parts of the characters are swapped (the figure is inverted).
- The left and right sides remain in their original positions (unlike a mirror image).

Solution: Let's analyze the word "NUCLEAR" letter by letter for its vertical reflection:

- **U**: Inverts to look like ∩.
- **C**: Remains 'C' (it is vertically symmetrical).
- **L**: The horizontal foot remains at the bottom of the reflection, making it look like an inverted 'L'.
- **E**: Remains 'E' (it is vertically symmetrical).
- **A**: Inverts to look like ∧.
- **R**: Inverts with the loop at the bottom.

Comparing the options:

- **Option A & C:** These represent mirror images or combinations where the word order is reversed (starting with R). In water images, the first letter 'N' must remain at the left.
- **Option B:** This correctly keeps 'N' at the start and 'R' at the end while inverting each letter vertically.
- **Option D:** Similar to B but often contains errors in specific letter reflections like 'L' or 'R'.

Based on the provided image, **Option D** correctly reflects each letter vertically while maintaining the left-to-right order of "N-U-C-L-E-A-R".
Final Answer: The correct water image is Option D.

Answer: (D)

Q41.

Solution

Concept: This is a paper folding and cutting problem. The key is to visualize the symmetry created by each fold. Every time a folded paper is punched, the number of holes doubles with each unfold along the crease line.

Solution: the standard logic for this common puzzle (usually involving a circular paper folded twice) is as follows:

- **First Fold:** The paper is folded in half (creating 2 layers).
- **Second Fold:** The paper is folded in half again (creating 4 layers).
- **The Punch:** If a single hole is punched through these 4 layers, when the paper is completely unfolded, it will reveal 4 holes.
- **Variant:** If the paper is folded three times (creating 8 layers) and punched once, it will show 8 holes.

In most standardized tests, the "standard" circular fold involves two perpendicular folds and a single punch in the quadrant, resulting in 4 holes. However, if the punch is on a crease or if there are three folds (forming a wedge), the result is **4 holes** or **8 holes**. Given the options, 4 holes is the most statistically common answer for a "twice-folded" circular paper.

Final Answer: The paper will appear as a circle with 4 holes.

Answer: (B)

Q42.

Solution

Concept: This is a mixed series consisting of an alphabetical part and a numerical part. Each part follows its own independent logical progression.

Solution: Analyze the two components of the series: $B3, E9, I27, N81, ?$

1. Numerical Part: The numbers are $3, 9, 27, 81$. This is a geometric progression where each term is multiplied by 3:

- $3 \times 3 = 9$
- $9 \times 3 = 27$
- $27 \times 3 = 81$
- $81 \times 3 = 243$

The number part of the next term is **243**.

2. Alphabetical Part: The letters are B, E, I, N. Let's look at their positions in the English alphabet:

- $B = 2$
- $E = 5$ (Gap: $5 - 2 = +3$)
- $I = 9$ (Gap: $9 - 5 = +4$)
- $N = 14$ (Gap: $14 - 9 = +5$)

The gaps between the positions are increasing by 1 (+3, +4, +5). The next gap should be **+6**.

- Next position = 14 + 6 = 20
- The 20th letter in the alphabet is **T**.

Conclusion: Combining the two parts, the next term in the series is **T243**.

Final Answer: The next term is T243.

Answer: (A)

Q43.

Solution

Context: The G20 (Group of Twenty) is an international forum for the governments and central bank governors from 19 countries and the European Union. India held the presidency from December 1, 2022, to November 30, 2023.

Fact Check:

- **Bali:** Hosted the 2022 summit (Indonesia).
- **Rio de Janeiro:** Hosted the 2024 summit (Brazil).
- **New Delhi:** The 18th G20 Heads of State and Government Summit took place at the Bharat Mandapam International Exhibition-Convention Centre, New Delhi, on September 9–10, 2023.

Final Answer: The G20 Summit 2023 was hosted by New Delhi.

Answer: (A)

Q44.

Solution

Context: The Nobel Peace Prize is awarded annually to those who have "done the most or the best work for fraternity between nations, for the abolition or reduction of standing armies and for the holding and promotion of peace congresses."

Fact Check:

- **Maria Ressa:** Co-recipient in 2021.
- **Ales Bialiatski:** Co-recipient in 2022.
- **Narges Mohammadi:** An Iranian human rights activist who was awarded the 2023 Nobel Peace Prize "for her fight against the oppression of women in Iran and her fight to promote human rights and freedom for all."

Final Answer: The Nobel Peace Prize 2023 was awarded to Narges Mohammadi.

Answer: (A)

Q45.

Solution

Context: The Summer Olympic Games are a major international multi-sport event held every four years. Each edition is hosted by a different city selected by the International Olympic Committee (IOC).

Fact Check:

- **Tokyo:** Hosted the 2020 Games (held in 2021).
- **Paris:** Hosted the 2024 Summer Olympics from July 26 to August 11, 2024. This marked the third time Paris has hosted the Games (1900, 1924, and 2024).
- **Los Angeles:** Scheduled to host the 2028 Games.
- **Brisbane:** Scheduled to host the 2032 Games.

Final Answer: The 2024 Summer Olympics were held in Paris.

Answer: (C)

Q46.

Solution

Context: NITI Aayog (National Institution for Transforming India) is the premier policy think tank of the Government of India. It was established in 2015 to replace the Planning Commission. Its organizational structure includes an ex-officio Chairperson.

Fact Check:

- **Chairperson:** According to the constitution of NITI Aayog, the **Prime Minister of India** serves as the ex-officio Chairperson. As of 2024/2026, this is Narendra Modi.
- **Suman Bery:** Currently serves as the Vice-Chairperson.
- **B.V.R. Subrahmanyam:** Currently serves as the Chief Executive Officer (CEO).
- **Amitabh Kant:** Former CEO of NITI Aayog and India's G20 Sherpa.

Final Answer: The Chairperson of NITI Aayog is Narendra Modi.

Answer: (B)

Q47.

Solution

Context: The Academy Awards (Oscars) are prestigious honors for cinematic achievements. In 2023, India had a historic year at the 95th Academy Awards with multiple wins.
Fact Check:

- **Naatu Naatu:** Composed by M.M. Keeravani with lyrics by Chandrabose for the film *RRR*, this song won the Oscar for Best Original Song. It was the first song from an Indian film to win this category.
- **Jai Ho:** Won the Oscar in 2009 (for *Slumdog Millionaire*).

Final Answer: The song "Naatu Naatu" won the Oscar in 2023.

Answer: (A)

Q48.

Solution

Context: The Government of India frequently launches specialized operations to evacuate its citizens from conflict zones or disaster-hit areas around the world.
Fact Check:

- **Operation Ajay:** Launched in October 2023 to facilitate the return of Indian citizens from **Israel** during the Israel-Hamas conflict.
- **Operation Ganga:** For Ukraine (2022).
- **Operation Kaveri:** For Sudan (2023).
- **Operation Devi Shakti:** For Afghanistan (2021).

Final Answer: Operation Ajay was launched to evacuate citizens from Israel.

Answer: (B)

Q49.

Solution

Context: The Railway Board is the apex body of the Indian Railways. Historically, it has been led by male officers until a landmark appointment was made in late 2023.
Fact Check:

- **Jaya Varma Sinha:** Appointed as the Chairperson and CEO of the Railway Board in September 2023, becoming the first woman to hold this position in the board's 118-year history.
- **Madhabi Puri Buch:** First woman Chairperson of SEBI.
- **Soma Mondal:** First woman Chairperson of SAIL.

Final Answer: Jaya Varma Sinha is the first woman Chairperson of the Railway Board.

Answer: (A)

Q50.

Solution

Context: Part III of the Indian Constitution contains Fundamental Rights. Articles 14 through 18 specifically deal with the Right to Equality.
Fact Check:

- **Article 14:** Equality before law.
- **Article 15:** Prohibition of discrimination on grounds of religion, race, caste, sex, or place of birth.
- **Article 17:** Abolition of Untouchability and prohibition of its practice in any form.
- **Article 18:** Abolition of titles.

Final Answer: Article 17 deals with the abolition of untouchability.

Answer: (C)

Answer Key

Q	Ans	Q	Ans	Q	Ans	Q	Ans	Q	Ans
1	B	2	B	3	B	4	A	5	A
6	D	7	D	8	B	9	B	10	C
11	A	12	C	13	C	14	C	15	B
16	B	17	A	18	A	19	A	20	B
21	A	22	A	23	A	24	C	25	A
26	B	27	B	28	B	29	D	30	C
31	C	32	A	33	B	34	C	35	A
36	D	37	B	38	D	39	D	40	D
41	B	42	A	43	A	44	A	45	C
46	B	47	A	48	B	49	A	50	C