



**FORTUNE
IAS ACADEMY**

**PTS 2025
COMPREHENSIVE
TEST 03 - PAPER II KEY**

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Comprehensive Test 03 - Paper II Key

1	b	21	d	41	c	61	d
2	d	22	b	42	a	62	b
3	d	23	a	43	b	63	b
4	c	24	a	44	c	64	d
5	a	25	c	45	d	65	a
6	a	26	c	46	c	66	d
7	a	27	a	47	b	67	c
8	a	28	b	48	a	68	d
9	b	29	b	49	a	69	a
10	b	30	a	50	a	70	c
11	b	31	d	51	d	71	c
12	c	32	d	52	a	72	b
13	a	33	c	53	b	73	c
14	c	34	c	54	c	74	a
15	a	35	c	55	c	75	b
16	c	36	c	56	c	76	c
17	b	37	c	57	a	77	b
18	d	38	d	58	d	78	d
19	b	39	b	59	c	79	c
20	a	40	b	60	d	80	b



1) **Answer: (b)**

Difficulty Level: Easy

- **Assumption 1 is CORRECT:** The passage states that the debate over reparations aims to address the "lasting economic impact of colonization." This implies that the economic damage caused by colonialism is significant and lasting, justifying the need for reparations.
- **Assumption 2 is INCORRECT:** The passage explicitly mentions that the movement gained "diplomatic significance" at the 2001 UN conference. This indicates that diplomatic engagement is a crucial aspect of the reparation's movement, not solely legal action.
- **Assumption 3 is INCORRECT:** While the passage highlights the focus on the "economic impact," it also mentions the return of cultural artifacts as a form of reparation. This suggests that reparations encompass various forms, including both financial and non-material aspects.

2) **Answer: (d)**

Difficulty Level: Easy

- **Option (a) is INCORRECT:** The passage explicitly states that quantifying the financial cost of colonization is complex.
- **Option (b) is INCORRECT:** The passage explicitly mentions that economic reparations, not just apologies or cultural restitution, are central to the debate.
- **Option (c) is INCORRECT:** The passage states that quantifying exploitation is complex, but it does not suggest that this complexity invalidates the case for reparations.
- **Option (d) is CORRECT:** The passage highlights how discussions on reparations have gained diplomatic traction and influenced legal and political debates.

3) **Answer: (d)**

Difficulty Level: Easy

- **Statement 1 is CORRECT:** The passage implies that labelling all genetically modified foods as unsafe hinders progress, suggesting a general ban could impede technological growth.
- **Statement 2 is CORRECT:** The passage mentions that transparency in safety studies can encourage investment and research, pointing to public trust as a factor in success.
- **Statement 3 is CORRECT:** The passage connects public perception of safety to the success and expansion of genetic modification technologies, indicating their relationship.

4) **Answer: (c)**

Difficulty Level: Easy

- **Option (a) is INCORRECT:** The passage does not advocate for universally endorsing genetically modified crops but stresses the importance of a case-by-case evaluation.
- **Option (b) is INCORRECT:** While transparency is important, the focus of the passage is more on encouraging a balanced approach, not just addressing public distrust.



- **Option (c) is CORRECT:** The passage emphasizes the need for supportive public policies and transparent safety data for the success of genetic modification technologies.
- **Option (d) is INCORRECT:** The passage advocates for a case-by-case evaluation of genetically modified crops, not a generalized approach.

5) **Answer: (a)**

Difficulty: Hard

Micro Topic: Divisibility

- If N is the three digit number and R is the remainder, $3630 - R$ and $5070 - R$ will be divisible by N.
- Also $5070 - R - (3630 - R)$ will be divisible by N. Implies 1440 will be divisible by N.
 - If both 'a' and 'b' are separately divisible by N, then $(a+b)$ and $(a-b)$ will also be divisible by N.
- Only 144 among the options suits this condition, hence it is the answer.

6) **Answer: (a)**

Difficulty: Hard

Micro Topic: Divisibility

- $180 = 9 \times 5 \times 4$.
- Since the number is divisible by 180, the number will have 4, 5 and 9 as factors.
- If 5 is a factor, then C should be either 0 or 5.
- If 4 is a factor, BC should be divisible by 4. Hence, C should be 0 as a number ending with 5 will not be divisible by 4.
- Now, B could either be 2, 4, 6, and 8.
- Similarly, if 9 is a factor, the sum of the numbers will be divisible by 9. Hence, $18 + A + B$ will be divisible by 9.
- The sum can only be 27, which makes $A + B = 9$.
- If $B = 2$, then $A = 7$. Not possible as 7 is already present.
- If $B = 4$, then $A = 5$. Possible
- If $B = 6$, then $A = 3$. Not possible as 6 is already present.
- If $B = 8$, then $A = 1$. Possible. But here the cube of the difference will be negative, which is not in the option.
- Hence, A is 5 and B is 4.
- Answer being 1.

7) **Answer: (a)**

Micro Topic: Series

Difficulty Level: Medium

Each term follows the rule:

Term = $2n^3 - n^2 + n$ where n represents the position in the sequence.

For $n = 1$: $2(1^3) - 1^2 + 1 = 2(1) - 1 + 1 = 2$

For $n = 2$: $2(2^3) - 2^2 + 2 = 2(8) - 4 + 2 = 14$

For $n = 3$: $2(3^3) - 3^2 + 3 = 2(27) - 9 + 3 = 48$



$$\text{For } n = 4: 2(4^3) - 4^2 + 4 = 2(64) - 16 + 4 = 116$$

$$\text{For } n = 5: 2(5^3) - 5^2 + 5 = 2(125) - 25 + 5 = 230$$

$$\text{For } n = 6: 2(6^3) - 6^2 + 6 = 2(216) - 36 + 6 = 402$$

Thus, the missing number is 230.

8) Answer: (a)

Difficulty Level: Medium

Micro Topic: Sequence and Series

Given series is **Fibonacci series**,

$$0 + 1 = 1$$

$$1 + 1 = 2$$

$$1 + 2 = 3$$

$$2 + 3 = 5$$

$$\text{Same way } x = 8 + 13 = 21$$

Answer is Option (A) 21.

9) Answer: (b)

Difficulty level: Moderate

Micro topic: Factorization

- After prime factorization, $2520 = 2^3 \times 3^2 \times 5^1 \times 7^1$
- To obtain those factors which are perfect squares, only even powers of the prime factors need to be considered.
- Hence, 2 can take powers 0 and 2, 3 can take powers 0 and 2, 5 can take the power 0 and 7 can take the power 0.
 - $(2^0, 2^2) \times (3^0, 3^2) \times (5^0) \times (7^0)$
- There will be 4 factors which are perfect squares. These are 1, 4, 9 and 36.

10) Answer: (b)

Difficulty: Hard

Micro Topic: Factorization

- The prime factorization of 7560 allows representing the number as $2^3 \times 3^3 \times 5^1 \times 7^1$
- For the number to be a perfect square, the powers of each prime number should be even. Hence, we need to multiply the number with 2, 3, 5, and 7 so that each power becomes even. So, A is 210. $(2 \times 3 \times 5 \times 7)$
- For a number to be a perfect cube, the powers of each prime number need to be 3. This could be achieved by dividing the number by 7 and 5 as already 2 and 3 has power 3. So, B is 35.
- $A/B = 6$

11) Answer: (b)

Difficulty Level: Hard

- **Statement 1 is INCORRECT:** The passage highlights that legal framework lag behind societal progress, but it does not claim they are the direct cause of human fragility, other crises like climate change and economic instability also contribute.



- **Statement 2 is CORRECT:** The passage states that prioritizing human welfare is a survival necessity due to climate and economic crises.
- **Statement 3 is CORRECT:** The passage implies that legal systems alone are not enough and emphasizes the need for broader human-focused interventions.

12) Answer: (c)

Difficulty Level: Medium

- **Option (a) is INCORRECT:** While the passage highlights the lag in legal systems, it does not argue that they are entirely ineffective, only that they struggle to keep pace.
- **Option (b) is INCORRECT:** Although climate change is emphasized, the passage presents it as one of several crises, not necessarily the most significant.
- **Option (c) is CORRECT:** The passage argues that legal systems lag behind societal advancements, exposing vulnerabilities, and that prioritizing human welfare is essential in the face of multiple crises.
- **Option (d) is INCORRECT:** The passage suggests that existing legal frameworks struggle to keep up with rapidly evolving crises.

13) Answer: (a)

Difficulty Level: Medium

- **Statement 1 is CORRECT:** The passage states that complete digital adoption is unrealistic due to the diverse realities of population.
- **Statement 2 is CORRECT:** The passage emphasizes that government services should remain available through physical offices to ensure inclusivity.
- **Statement 3 is INCORRECT:** The passage argues against the idea that simply expanding digital infrastructure will solve the problem, instead advocating for hybrid models.

14) Answer: (c)

Difficulty Level: Easy

- **Option (a) is INCORRECT:** The passage argues against the idea of complete digital adoption, stating that it is unrealistic.
- **Option (b) is INCORRECT:** The passage explicitly states that government services should not be limited to digital platforms.
- **Option (c) is CORRECT:** The passage emphasizes that hybrid models are necessary to ensure accessibility for all sections of society.
- **Option (d) is INCORRECT:** While government policies play a role, the passage focuses on diverse challenges beyond just government action.

15) Answer: (a)

Difficulty: Moderate

Micro Topic: Factorization

- $5x^2 + 7x + 180) / x = 5x + 7x + 180/x$
- For the expression to be divisible by x , 180 should be divisible by x . Implies, x must be a factor of 180.



- By prime factorization, $180 = 2^2 \times 3^2 \times 5$
- Number of factors = $3 \times 3 \times 2 = 18$
- Therefore, maximum number of values x can take = 18
- Highest possible value of $x = 180$
- Ratio = $1/10$

16) Answer: (c)

Difficulty: Hard

Micro Topic: Types of numbers.

- Digital root: The single digit you get by repeatedly adding the digits of a number until you have a single digit. For every perfect cube, it is either 1, 8, or 9.
- Property of prime number: The number will only have two factors and squares of the number will always have three factors.
- Another property associated with factorization is that if a number has 5 factors, then the number must be a fourth power of a natural number.
 - For instance, 16 has 5 factors (1, 2, 4, 8, 16). 625 has 5 factors (1, 5, 25, 125, 625)

17) Answer: (b)

Difficulty: Moderate

Micro Topic: Types of numbers

- Statement 1 uses the term should, which makes it easy to prove the statement wrong by finding an example where $\frac{c^2}{p^2}$ is odd. This could be attained by taking 9 as the composite number and 3 as the prime number. The expression gives $81/9 = 9$, which is odd. Hence statement 1 is wrong.
- Statement 2 uses the term can, which makes it easy to prove the statement right by finding an example where $\frac{pc}{2(p+c)}$ can be odd. This could be attained by assuming 3 as the prime number and 6 as the composite number. The expression gives $18/18 = 1$, which is odd. Hence, statement 2 is right.
- Similarly in statement 3, assume 3 as prime number and 4 as composite. The expression gives 7, which is a prime number. Hence, statement 3 is right.

18) Answer: (d)

Difficulty: Easy

Micro Topic: Types of numbers

- A perfect square will not have 2, 3, 7, or 8 as its unit digit. Hence the only possible perfect square is 66049.

19) Answer: (b)

Difficulty: Moderate

Micro Topic: Types of numbers

- In the first statement, x can take values ranging from -1 to infinity. For any negative value, x^3 will be less than x^2 , as the former will always be negative while the latter is



always positive. However, for values greater than 1, cube will always be greater than the square. Hence, statement 1 alone cannot answer the question.

- In the second statement, x can take values ranging from 1 to negative infinity. For any number between 0 and 1, x^3 will be less than x^2 . Also, for all numbers less than 0, the cube of the number will be less than the square as the former is negative and the latter is positive. Hence, statement 2 alone can answer the question.
- (b) is the correct option.

20) Answer: (a)

Difficulty: Easy

Micro Topic: Trailing zero

- The number of trailing zero depends on the number of 5's and 2's in the expression as every trailing 0 is formed by the multiplication of 2 and 5.
- Since every even number can contribute a 2, they will be present in abundance. Hence, mostly the number of 5's in the expression determines the trailing zero.
- One 5 gets contributed by multiples of 5. Two 5's get contributed by multiples of 25 and three 5's by multiples of 125.
- Applying this to $145!$, the number of 5's will be 35, where 24 fives are contributed by multiples of 5 which are neither multiples of 25 nor 125, 8 fives are contributed by multiples of 25 and 3 fives by 125.
- Hence, number of zero to the end is 35

21) Answer: (d)

Difficulty Level: Easy

- **Assumption 1 is CORRECT:** The passage states that traditional policies are focused on these things, and then contrasts this with evidence that work, volunteering, and social engagement improve health. This juxtaposition strongly implies that the traditional approach has had a negative impact, even if it does not explicitly state 'negatively impacted.'
- **Assumption 2 is CORRECT:** The passage explicitly states that work, volunteering, and social engagement can improve physical and mental health as people age, aligning with this assumption.
- **Assumption 3 is CORRECT:** The passage implies the need for policy reforms, such as flexible work arrangements and age-friendly workplaces, to leverage the potential of the silver workforce, making this assumption valid.

22) Answer: (b)

Difficulty Level: Medium

- **Option (a) is INCORRECT:** While the passage mentions traditional policies, it does not focus on their ineffectiveness but rather contrasts them with the emerging recognition of the silver workforce's potential.



- **Option (b) is CORRECT:** This statement captures the central idea of the passage, which emphasizes the value of the silver workforce in contributing to the economy and enhancing well-being through continued work, volunteering, and social engagement.
- **Option (c) is INCORRECT:** The passage highlights that work, volunteering, and social engagement improve health, not just medical interventions, making this statement inaccurate.
- **Option (d) is INCORRECT:** The passage references the WHO's definition of healthy ageing positively and does not suggest it is outdated or needs revision.

23) Answer: (a)

Difficulty Level: Easy

- **Option (a) is CORRECT:** The passage argues that the human mind is conditioned to quantify and compare, which affects perceptions and leads to conflict rather than true understanding.
- **Option (b) is INCORRECT:** The passage does not suggest that objectivity is superior; rather, it highlights the limitations of objectivity in a subjective world.
- **Option (c) is INCORRECT:** The passage critiques relativity as a conditioned response, not as a means to deeper understanding.
- **Option (d) is INCORRECT:** While conflict is mentioned, the passage focuses on comparison and conditioning rather than the failure to quantify emotions accurately.

24) Answer: (a)

Difficulty Level: Hard

Micro Topics: Number system

The highest power of a prime p in $n!$ can be found by repeatedly dividing n by p , then summing the integer results of each division.

For 7^n in $115!$

1. Divide 115 by 7: $115 \div 7 = 16.428$. Taking only the integer part, we get 16.
2. Divide 115 by $7^2=49$: $115 \div 49 = 2.346$. Taking only the integer part, we get 2.
3. Divide 115 by $7^3=343$: $115 \div 343 = 0.335$. The integer part is 0.

Summing these values:

$16 + 2 + 0 = 18$, so the highest power of 7 dividing $115!$ is $n = 18$.

Since $20 = 2^2 \times 5$, we must find the highest power of both 2 and 5 in $155!$ and take the minimum value.

Finding the highest power of 2:

1. Divide 155 by 2: $155 \div 2 = 77.5 \rightarrow \text{Integer part} = 77$.
2. Divide 155 by $2^2=4$: $155 \div 4 = 38.75 \rightarrow \text{Integer part} = 38$.
3. Divide 155 by $2^3=8$: $155 \div 8 = 19.375 \rightarrow \text{Integer part} = 19$.
4. Divide 155 by $2^4=16$: $155 \div 16 = 9.6875 \rightarrow \text{Integer part} = 9$.
5. Divide 155 by $2^5=32$: $155 \div 32 = 4.84375 \rightarrow \text{Integer part} = 4$.
6. Divide 155 by $2^6=64$: $155 \div 64 = 2.421875 \rightarrow \text{Integer part} = 2$.
7. Divide 155 by $2^7=128$: $155 \div 128 = 1.2109375 \rightarrow \text{Integer part} = 1$.
8. Since $2^8=256$ is greater than 155, further divisions contribute 0.



Summing these values:

$$77 + 38 + 19 + 9 + 4 + 2 + 1 = 150$$

Since $20 = 2^2 \times 5$, we need the highest power of 2^2 , so we divide by 2:

$$150 \div 2 = 75$$

Finding the highest power of 5:

1. Divide 155 by 5: $155 \div 5 = 31$.
2. Divide 155 by $5^2=25$: $155 \div 25 = 6.2 \rightarrow$ Integer part = 6.
3. Divide 155 by $5^3=125$: $155 \div 125 = 1.24 \rightarrow$ Integer part = 1.
4. Since $5^4=625$ is greater than 155, further divisions contribute 0.

Summing these values:

$$31 + 6 + 1 = 38.$$

Since $20=2^2 \times 5$ we take the minimum of 75 (from 2^2) and 38 (from 5), which is $p=38$.

$$n + p = 18 + 38 = 56$$

25) Answer: (c)

Difficulty: Easy

Micro Topic: BODMAS

- First expression: $52/13*22-43+11 = 4*22-43+11 = 88 - 43 + 11 = 56$
- Second expression: $32 - 20 + 36 / 24 * 52 = 32 - 20 + 3/2 * 52 = 32 - 20 + 78 = 90$
- Third expression: $21 + 12 * 78 / 13 - 31 = 21 + 12 * 6 - 31 = 21 + 72 - 31 = 62$
- Fourth expression: $15 * 16 - 30 / 30 + 23 = 240 - 1 + 23 = 262$

26) Answer: (c)

Difficulty: Easy

Micro Topic: Number system

- Let the numbers be $6x - 6$, $6x$ and $6x + 6$.
- Sum of these numbers gives 9000. Implies, $(6x - 6) + 6x + (6x + 6) = 9000$
- Thus, $x = 500$. Hence, the numbers are 2994, 3000, and 3006.
- Second digit of 2994 - Fourth digit of 3006 = $9 - 6 = 3$.

27) Answer: (a)

Difficulty: Moderate

Micro Topic: Number system

- $1/x = -1/0.25 = -4$
- $1/x^2 = 1 \div 1/16 = 16$
- $2^x = 2^{-0.25} = 1/2^{0.25} = 0.528$
- $2^{1/x} = 2^{1/-0.25} = 2^{-4} = 1/2^4 = 0.0625$.
- The smallest among them is $1/x$

28) Answer: (b)

Difficulty: Moderate

Micro Topic: Number system

- The first 9 digits of N will be 123...9
- The next 20 digits will be 10...19



- The next 20 digits will be 20...29
- The next number will be the 50th digit, which is 3. (As 30 is the next number to be written)

29) Answer: (b)

Difficulty Level : Moderate

Micro Topic : Law of divisibility

Explanation:

Given number is $A71B6$.

If it is divisible by 24, then it is divisible by 8 and 3

For a number to be divisible by 8, the last 3 digits of the number must be divisible by 8, or the last three digits of the number must be zeros.

Here for $1B6$ to be divisible by 8,

Possible values of $B = 3, 7$

Now a number is divisible by 3 if the sum of its digits are divisible by 3.

If $B = 3$,

Possible values of A so that $A71B6$ is divisible by 3 is 1,4,7

If $B = 7$,

Possible values of A so that $A71B6$ is divisible by 3 is 3,6,9

Total possible combinations = 6

30) Answer: (a)

Micro Topic: Series

Difficulty Level: Medium

Sequence Given: 1, 3, 1, 5, 3, 1, 7, 5, 3, 1, 9, 7, ...

The sequence is generated by forming groups where the n th group consists of the first n odd numbers written in reverse order. For example:

Group 1: 1

Group 2: 3, 1

Group 3: 5, 3, 1, and so on.

Group 1 has 1 term.

Group 2 has 2 terms.

Group 3 has 3 terms.

Group 4 has 4 terms.

Group 5 has 5 terms.

Group 6 has 6 terms.

Groups 1 to 5 yield: $1+2+3+4+5=15$ terms.

To reach 20 terms, we need 5 more terms from Group 6.

The sum of the first n odd numbers is n^2



Sum of first 5 groups = $1^2 + 2^2 + 3^2 + 4^2 + 5^2 = 1 + 4 + 9 + 16 + 25 = 55$

Partial sum from Group 6:

Group 6 consists of the first 6 odd numbers in reverse order: 11, 9, 7, 5, 3, 1.

Their sum is $6^2 - 1 = 35$.

Total sum of the first 20 terms:

$S = 55$ (from Groups 1–5) + 35 (first 5 terms of Group 6) = 90 .

31) Answer: (d)

Difficulty Level: Hard

- **Option (a) is INCORRECT:** The passage mentions steps to improve mineral security but does not claim complete self-sufficiency in a short time.
- **Option (b) is INCORRECT:** The mission includes securing overseas assets, not just focusing on domestic production.
- **Option (c) is INCORRECT:** The passage does not mention regulating mineral prices as a primary goal.
- **Option (d) is CORRECT:** The passage emphasizes India's historical under-exploration and explains how NCMM is addressing it through private participation and policy reforms.

32) Answer: (d)

Difficulty Level: Hard

- **Assumption 1 is CORRECT:** The passage states that only 10% of India's Obvious Geological Potential (OGP) has been explored, compared to 20-25% in advanced economies, indicating lower exploration efforts.
- **Assumption 2 is CORRECT:** The NCMM aims to enhance domestic production, secure overseas assets, and promote recycling, all of which contribute to reducing import dependency.
- **Assumption 3 is CORRECT:** The passage mentions that advanced economies have explored 20-25% of their mineral potential, compared to India's 10%, making this inference valid.

33) Answer: (c)

Difficulty Level: Easy

- **Statement 1 is CORRECT:** The passage highlights that a techno-centric approach risks marginalizing non-users.
- **Statement 2 is INCORRECT:** The passage explicitly states that digital exclusion arises from multiple factors, including economic barriers, gender norms, and lack of accessibility, not just personal choice.
- **Statement 3 is CORRECT:** The passage highlights that focusing only on technology users' risks marginalizing non-users, reinforcing existing inequalities.



34) Answer: (c)

Difficulty Level: Medium

- **Option (a) is INCORRECT:** The passage critiques the blind spot created by over-reliance on high-tech solutions, arguing that such an approach marginalizes non-users. It does not advocate for dominance of tech-centric policies.
- **Option (b) is INCORRECT:** While economic barriers are mentioned, it is not the crux of the passage.
- **Option (c) is CORRECT:** This encapsulates the passage's core argument: ethical and practical imperatives demand that technology policies address non-users, especially in India's context of diversity and inequality.
- **Option (d) is INCORRECT:** Patriarchal norms are cited as one factor restricting women's digital agency, but the passage's focus is broader, emphasizing systemic neglect of diverse non-user groups.

35) Answer: (c)

Difficulty Level: Hard

Micro Topic: Remainder Theorem

In the division

$$\frac{27 \times 40 \times 37 \times 77 \times 105}{91}$$

If we cancel 7 from the numerators 105 and the denominator 91 then we will get

$$\frac{27 \times 40 \times 37 \times 77 \times 15}{13}$$

Now, let's find the remainder of this division and then you must multiply the final remainder with the cancelled 7 to find the remainder of the original division.

Finding Remainder of

$$\frac{27 \times 40 \times 37 \times 77 \times 15}{13} \rightarrow \frac{27 \times 40 \times 37 \times 77 \times 15}{13} \xrightarrow{R} \frac{1 \times 1 \times (-2) \times (-1) \times (2)}{13} = \frac{4}{13}$$

Thus the remainder is 4.

Now let us multiply the cancelled 7 to get the final answer.

$$\text{Remainder} = 4 \times 7 = 28$$

Thus 28 will be the remainder when $27 \times 40 \times 37 \times 77 \times 105$ is divided by 91.

Note: When simplification is applied during division to find the remainder, the remainder obtained from the simplified division must be multiplied by all the factors that were cancelled during the simplification in order to get the correct remainder of the original division.



36) Answer: (c)

Explanation:

Statement 1 alone can't be used to fetch the answer as the variable z is missing.

Similarly Statement 2 will not be sufficient to find value of $x+y+z$.

But if we perform addition operation of 2 equations,

$$(2x + 3y) + (6x + 5y + 8z) = 30 + 42$$

$$8x + 8y + 8z = 72$$

$$8(x + y + z) = 72$$

$$x + y + z = 9$$

Hence both the statements together are sufficient but neither statement alone is sufficient.

37) Answer: (c)

Explanation

Let son's present age be x

Given, present age of father = 46 years.

According to the question, x years ago,

Father's age = Son's present age

$$\Rightarrow 46 - x = x$$

$$\Rightarrow 46 = 2x$$

$$\Rightarrow x = 23$$

Therefore, Son's age 3 years ago $23 - 3$
 $= 20\text{years}$

38) Answer: (d)

Difficulty Level: Medium

Micro Topic: LCM

Given that A, B and C change their positions after every 42min, 32min and 48min respectively.

Therefore, LCM of 42, 32 and 48

$$42 = 2 \times 3 \times 7$$

$$32 = 2 \times 2 \times 2 \times 2 \times 2$$

$$48 = 2 \times 2 \times 2 \times 2 \times 3$$

$$\text{Hence LCM of } 42, 32, 48 = 2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 7 = 672$$

They will change their positions again after 672 min = $11 \times 60 + 12$ min

To find the time at which they will change simultaneously again, we can add 11 hours and 12 minutes to the initial time of 6:00 AM:

$$6:00 \text{ AM} + 11 \text{ hours and } 12 \text{ minutes} = 5:12 \text{ PM}$$

Hence, the next simultaneous change takes place at 5: 12 PM.

Hence, option (d) is correct answer.



39) Answer: (b)

Difficulty Level: Medium

Micro Topic: HCF and LCM

Formula used- $a^2+b^2=(a+b)^2-2ab$, $a \times b = (\text{LCM of } a \text{ and } b) \times (\text{HCF of } a \text{ and } b)$

Given ; $a+b=17$

$\text{LCM} \times \text{HCF} = 60 \times 1 = 60 = a \times b$

So, $a^2+b^2 = 17^2 - 2 \times 60$.

$$a^2+b^2 = 289 - 120 = \mathbf{169}$$

Hence option (b) is the correct answer.

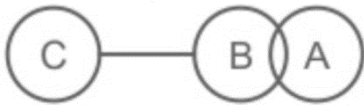
40) Answer: (b)

Difficulty Level: Easy

Micro Topic: Syllogism

The Venn diagram with least possible connection is:

Conclusion I : No C is A - **This is false as no definite relation is given between C and A , connection may exist.**



Conclusion II : No B is C - **This is true: if no C is B the no B can be C**

So only Conclusion II follows hence option (b) is correct.

41) Answer: (c)

Difficulty Level: Hard

- **Statement 1 is INCORRECT:** The passage mentions revenue generation for sewerage boards as a benefit of treated water, which contributes to the viability of treatment plants. However, it doesn't say that sustainable water management depends solely on this. It's a contributing factor, but not necessarily the defining factor.
- **Statement 2 is INCORRECT:** The passage suggests that treated water can be used for these purposes but does not claim they require it for sustainability.
- **Statement 3 is CORRECT:** The passage advocates for treated water as a way to conserve freshwater.

42) Answer: (a)

Difficulty Level: Easy

- **Option (a) is CORRECT:** The passage explicitly lists numerous uses for treated water, including urban parks, afforestation, industrial processes, and construction. This directly implies that treated water can replace freshwater in these applications. This is the most direct and logical implication.
- **Option (b) is INCORRECT:** While historical evidence strengthens the argument, its absence does not entirely undermine the need for sustainable water management in modern times.



- **Option (c) is INCORRECT:** While revenue generation is mentioned as a benefit of treated water utilization, the passage's primary focus is on the importance of water management and the uses of treated water. Revenue is a supporting point, not the central implication.
- **Option (d) is INCORRECT:** The passage argues for responsible water management and the use of treated water, implying that simply having potable water is not enough. The passage emphasizes a more comprehensive approach.

43) Answer: (b)

Difficulty Level: Easy

- **Assumption 1 is INCORRECT:** The passage does not explicitly state that formal employment is superior in all aspects. While it highlights the benefits of formal employment, it also acknowledges that informal employment provides flexibility and allows older adults to re-enter the workforce.
- **Assumption 2 is CORRECT:** The passage states that informal employment allows older adults to re-enter the labour force but comes with limited welfare benefits and lower wages, making this assumption valid.
- **Assumption 3 is INCORRECT:** The passage presents a clear duality in employment, showing that formal employment offers strong worker protections, while informal employment has limited welfare benefits, contradicting this assumption.

44) Answer: (c)

Difficulty Level: Easy

- **Option (a) is INCORRECT:** While the passage mentions the benefits of formal employment and its restrictions, this statement does not capture the broader duality or the central focus of the passage.
- **Option (b) is INCORRECT:** This statement highlights one aspect of informal employment but does not reflect the overarching theme of the dual employment landscape.
- **Option (c) is CORRECT:** This statement encapsulates the main idea of the passage, which emphasizes the contrast between formal and informal employment and the importance of exploring flexible work arrangements.
- **Option (d) is INCORRECT:** While mandatory retirement policies are mentioned, they are not the primary focus of the passage, making this statement incorrect.

45) Answer: (d)

Difficulty Level: Medium

Micro Topic: Time and Work

Formula used- $m_1d_1t_1/w_1 = m_2d_2t_2/w_2$ (Here; m = no of men, d = no of days, t = no of hours, w = work done)

Let's assume that each man does the same amount of work per day.

According to the problem statement, we can set up the following equation:

$$(x + 8)(x + 10) = (x - 10)(x + 40)$$



$$x^2 + 18x + 80 = x^2 + 30x - 400$$

$$12x = 480$$

$$x = 40$$

Hence, option (d) is correct.

46) Answer: (c)

Difficulty Level: Hard

Micro Topic: Time and Work

Given that Q alone can complete the task in 15 days

Q's one day's work = $1/15$.

Statement I: P and Q together can complete the task in 6 days.

Hence (P + Q)'s 1 day's work = $1/6$.

So, P's one day's work = $[1/6 - 1/15] = 3/30 = 1/10$.

Statement II: (Q + R)'s one day's work = $1/10$.

So, R's one day's work = $[1/10 - 1/15] = 1/30$.

Therefore (P + Q + R)'s one day's work = $1/10 + 1/15 + 1/30 = 6/30 = 1/5$.

Time taken by them together to finish the work = 5 days.

Hence, both statements I and II both are necessary to answer the question.

47) Answer: (b)

Difficulty Level: Medium

Micro Topic: Pipes and Cisterns

Given that A and B can fill cistern in 12 and 24 min respectively and C empties in 16 min.

Let the capacity of the cistern = LCM of 12, 24 and 16 = 48 units

The cistern filled by A in one minute = $48/12 = 4$ unit

The cistern filled by B in one minute = $48/24 = 2$ unit

The cistern emptied by C in one minute = $48/16 = 3$ unit

So, if all the three pipes are opened together then the cistern filled in one minute i.e. by (A + B + C) = $4 + 2 - 3 = 3$ unit

In 4 minutes filled cistern (A + B + C)'s = $4 \times 3 = 12$ unit

Remaining capacity = $48 - 12 = 36$ unit

A and B together fill the remaining tank in = $36/6 = 6$ min.

Hence, total time = $4 + 6 = 10$ min.

Hence, option (b) is correct answer

48) Answer: (a)

Difficulty Level: Easy

Micro Topic: Permutation and Combinations

Given that the first two places can only be filled by 9 and 1 respectively and there is only one way for doing this i.e. 91.

Given that no digit appears more than once. Hence, we have 8 digits remaining (0, 2, 3, 4, 5, 6, 7, 8)

So, the next 6 places can be filled with the remaining 8 digits in $8P_6$ ways.



\therefore Total number of ways = ${}^8P_6 = \frac{8!}{(8-6)!} = 8 \times 7 \times 6 \times 5 \times 4 \times 3 = 20160$

Hence, option (a) is the correct answer.

49) Answer: (a)

Difficulty Level: Easy

Micro Topic: Permutation and Combinations

The man can go from Delhi to Mumbai in 6 ways by any one of the 6 trains available.

Then he can return from Mumbai to Delhi in 5 ways by the remaining 5 trains, since he cannot return by the same train by which he goes to Mumbai from Delhi.

Thus the required number of ways = $6 \times 5 = 30$

Hence, statement I is correct.

Since the man can go from Delhi to Mumbai in 6 ways and he can also return from Mumbai to Delhi in 6 ways as there is no restriction on the train that he chooses to return back.

Hence the number of ways in which he can go from Delhi to Mumbai and return from Mumbai to Delhi = $6 \times 6 = 36$ ways.

Hence, statement II is not correct.

Hence, option (a) is the correct answer.

50) Answer: (a)

Difficulty Level: Medium

Micro Topic: Probability

Only statement II is correct.

Let E = the event that P is selected and F = the event that Q is selected

Thus, clearly, E and F are independent events.

$P(E) = 1/8$ and $P(F) = 1/7$

Statement I is incorrect : Probability of both of them getting selected
 $= 1/8 \times 1/7 = 1/56$

Statement II is correct : Probability of neither of them getting selected
 $= 7/8 \times 6/7 = 42/56 = 21/28$

Statement III is incorrect: Probability of only one of them getting selected
 $= (1/8 \times 6/7) + (7/8 \times 1/7)$
 $= 6/56 + 7/56$
 $= 13/56$

Hence option (a) is the correct answer.

51) Answer: (d)

Difficulty Level: Hard

- **Statement 1 is INCORRECT**: The passage argues that territorial greed persists, but justifications for conflict have evolved beyond medieval-style expansionism.
- **Statement 2 is INCORRECT**: The passage suggests that technological advancements have made war easier to wage, not more difficult or less appealing.



- **Statement 3 is INCORRECT:** The passage does not claim that economic disparities make war inevitable, only that economic downturns can contribute to militaristic narratives.

52) Answer: (a)

Difficulty Level: Easy

- **Option (a) is CORRECT:** The passage emphasizes creating a marketplace where farmers have options to sell at fair prices, and government support should be provided when needed.
- **Option (b) is INCORRECT:** The passage suggests that a government-run support system is not practical or sustainable.
- **Option (c) is INCORRECT:** The passage highlights that the current MSP and DPPS systems are inefficient, not recommending their expansion.
- **Option (d) is INCORRECT:** The passage argues against a fixed-price procurement system, proposing a market-based approach instead.

53) Answer: (b)

Difficulty Level: Medium

- **Option (a) is INCORRECT:** The passage does not advocate for ending tax exemptions for not-for-profit hospitals; it merely questions the assumption that only they can serve patient interests.
- **Option (b) is CORRECT:** The passage argues that reinvesting profits—regardless of whether a hospital is for-profit or not-for-profit—can contribute to a better healthcare system. This suggests that the focus should be on how earnings are used rather than whether a hospital is for-profit or not.
- **Option (c) is INCORRECT:** Nowhere does the passage claim that for-profit hospitals are inherently less concerned about patient care.
- **Option (d) is INCORRECT:** The passage does not argue that only not-for-profit hospitals should exist, but rather that reinvestment is key to quality healthcare.

54) Answer: (c)

Difficulty Level: Easy

Micro Topic: Average

What ever be the numbers, their sum should be '0' for the average to be '0'

Hence even if 29 numbers are greater than 0 , the 30th number could be sum of all the 29 numbers and negative .

Eg: let's consider 5 numbers with average zero

First 4 numbers can be 10, 20, 35, 6

Then the 5th number should be $-(10+20+35+6) = -71$

Thus $avg = (10+20+35+6-71)/5 = 0/5 = 0$

Hence option (c) is the right answer.



55) Answer: (c)

Difficulty Level: Medium

Micro Topic: Average

Average age of 2 children = 12

Sum of age of children = $2 \times 12 = 24$

Statement I: Average age of the family = $(\text{father} + \text{mother} + \text{children}) / 4 = 30$

Hence father + mother + children = $30 \times 4 = 120$

Sum of ages of children = 24

Hence father + mother + 24 = 120

Father + mother = 96

Statement II: father is 4 years elder than mother

Hence father = 50.

So statement I and statement II together are sufficient to answer the question.

56) Answer: (c)

Difficulty Level: Medium

Micro Topic: Time and Distance

Let two trains A and B travel the same distance starting at 8:00 pm and 10:00 pm, respectively.

According to the question, train B took 2 hours less than the first train.

Train A travelled for at least 8 hours, then train B must travel for at least 6 hrs.

$$V_1/V_2 = T_2/T_1$$

$$V_1/V_2 = 6/8$$

$$V_1/V_2 = 3/4$$

If $V_1 = 3$, then $V_2 = 4$

$$(V_2 - V_1)/V_1 \times 100 = (4 - 3)/3 \times 100 = 100/3 = 33.33\%$$

So, V_2 is greater than V_1 by 33.33%.

Hence, option (c) is the correct answer.

57) Answer: (a)

Difficulty Level: Hard

Micro Topic: Time and Distance

Time taken by car to travel from Bhopal to Delhi = 10 hours

Let the speed of X's car be x km/hr.

Distance covered in 10 hours with the speed of x km/hr. = $10x$ km

Reduction in the distance covered = 150 km.

So, distance covered after reduction in speed = $(10x - 150)$ km

When X travels by bus his speed reduces by 25%.

Then, Speed of X in bus = $3x/4$ km/hr.

Time = 10 hours

Now, Speed = Distance/Time

$$3x/4 = (10x - 150)/10$$

$$3x/4 = x - 15$$



$$3x = 4x - 60$$

$$X = 60 \text{ km/hr.}$$

∴ the speed of his car is 60km/hr.

Hence, option (a) is the correct answer.

58) Answer: (d)

Difficulty Level: Easy

Micro Topic: A.P and G.P

Given that, Pay scale= Rs. 25,000–85,000

This means that Rohan joins at a pay of Rs. 25,000 and there will be an increment of Rs. 1,500 per year till he reaches Rs.85,000. The difference between the highest and the lowest pay scale= Rs. 85,000-Rs. 25,000=Rs. 60,000

Now, if the increment is Rs. 1,500 per year, then, to get a total increment of Rs. 60,000, Rohan will have to work for: $60,000/1,500 = 40$ years.

Hence, option (d) is the correct answer.

59) Answer: (c)

Difficulty Level: Medium

Micro Topic: A.P and G.P

Given two A.P.'s : 4, 8, 12..... and 27, 30, 33.....

For the first AP;

$$\text{Sum of } n = n/2 \{2a+(n-1)d\}$$

$$=n/2 \{2 \times 4+(n-1) \times 4\}$$

$$=n/2 \{8+4n-4\}$$

$$=n/2 (4+4n)$$

$$= 2n(n+1)$$

For the Second AP;

$$\text{Sum of } n = n/2 \{2a+(n-1)d\}$$

$$=n/2 \{2 \times 27+(n-1) \times 3\}$$

$$=n/2 \{54+3n-3\}$$

$$=n/2(51+3n)$$

According to the question,

$$2n(n+1) = n/2 (51+3n)$$

$$4n(n+1) = n(51+3n)$$

$$4n + 4 = 51 + 3n$$

$$n = 47$$

Hence, option (c) is the correct answer.

60) Answer: (d)

Difficulty Level: Hard

Micro Topic: A.P and G.P

Let S = 100, then R = 80% of 100 = 80

Q = 70% of 80 = $70/100 \times 80 = 56$



$$P = 30\% \text{ of } 56 = 30/100 \times 56 = 16.8$$

Therefore, P is equal to 16.8% of S.

Hence, option (d) is correct answer.

61) Answer: (d)

Difficulty Level: Medium

- **Option (a) is INCORRECT:** While the passage acknowledges the unpredictability of outcomes, it does not suggest that moral choices are meaningless. Sartre's philosophy emphasizes individual freedom and responsibility in making choices, even with uncertain outcomes.
- **Option (b) is INCORRECT:** The passage explicitly states that Henri's sacrifice, despite being intended to protect his comrades, had unintended and tragic consequences. This highlights that judging the morality of an action solely based on its outcome is not always accurate.
- **Option (c) is INCORRECT:** Sartre believes that humans can and must make meaningful choices, despite the challenges they face.
- **Option (d) is CORRECT:** Sartre argues that people must accept the responsibility for their actions, even if they cannot foresee or control the consequences.

62) Answer: (b)

Difficulty Level: Medium

- **Option (a) is INCORRECT:** The passage does not focus solely on the benefits to wealthy nations but discusses the broader dual legacy of globalization.
- **Option (b) is CORRECT:** This statement accurately reflects the passage's central idea, which highlights both the positive and negative consequences of globalization, including inequality, populism, and systemic vulnerabilities.
- **Option (c) is INCORRECT:** While the passage mentions populism and nationalism, it does not attribute them solely to the failure of globalization.
- **Option (d) is INCORRECT:** The passage mentions that globalization has increased interconnectedness and made the world more vulnerable to crises. However, it does not solely focus on financial crises and pandemics. It also highlights other consequences like inequality, cultural erosion, and the rise of populist movements.

63) Answer: (b)

Difficulty Level: Easy

- **Assumption 1 is CORRECT:** The passage mentions that humans belong to the species Homo sapiens and are the only surviving members of the human tribe Homini. The reference to the development of humans from earlier hominins supports this statement.
- **Assumption 2 is CORRECT:** The passage states that Homo sapiens are the only surviving members of the human tribe Homini, indicating that they evolved independently.



- **Assumption 3 is INCORRECT:** The passage mentions that Homo sapiens coexisted with H. neanderthalensis (Neanderthals), but it does not state that Neanderthals are the only genus with which humans coexisted.

64) Answer: (d)

Difficulty Level: Hard

Micro Topic: Ratio and proportion

From Statement I and Statement II:

Total number of boys in the class = $3x$

Total number of girls in the class = $2x$

So, Total number of students in the class = $3x + 2x = 5x$

Number of science students in boys = $\{5/(5 + 4)\} \times 3x = (5/9) \times 3x$

Ratio of science students in boys to the total number of students in the class
= $(5/9) \times 3x : 5x = 1 : 3$

Thus, S1 and S2 together are sufficient to answer the question.

Hence, option (d) is the correct answer.

65) Answer: (a)

Difficulty Level: Hard

Micro Topic: Set theory

Percentage of students who like studying history = 49%

Percentage of students who like studying polity = 53%

Percentage of students who like studying geography = 62%

Percentage of students who like studying both history and polity = 27%

Percentage of students who like studying both geography and polity = 29%

Percentage of students who like studying both history and geography = 28%

Since 5% like studying none of the given subjects

So, percentages of students who like studying at least one subject = 95%.

Now applying the basic formula,

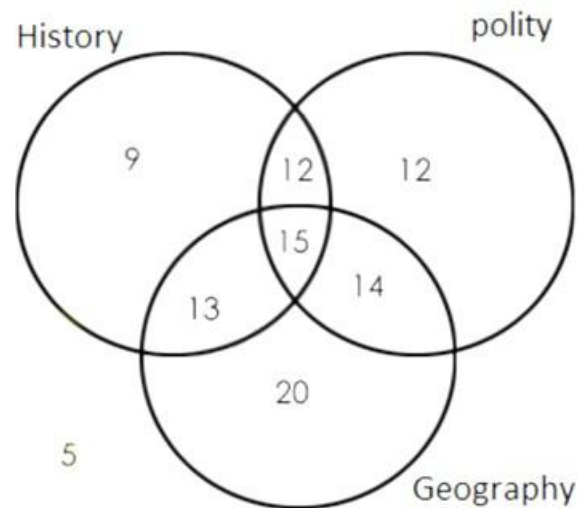
Percentages of students who like studying all three subjects = $95\% - 49\% - 53\% - 62\% + 27\% + 29\% + 28\% = 15\%$

Statement I:

Ratio of the number of students who like only history to those who like only polity = $(9\% \text{ of } 400)/(12\% \text{ of } 400) = 9/12 = 3:4$.

Hence, statement I is correct.

Statement II:





The number of students who like studying at least two of the given subjects = (number of students who like studying only two of the subjects) + (number of students who like studying all the three subjects) = $(12 + 13 + 14 + 15)\%$ i.e. 54% of $400 = 216$.

The number of students who like studying only one of the three given subjects = $(9\% + 12\% + 20\%)$ of $400 = 164$

Hence, statement II is incorrect.

Hence, option (a) is the correct answer.

66) Answer: (d)

Difficulty Level: Medium

Micro Topic: Profit and Loss

Let the Cost Price 1 litre pure milk be ₹1

∴ CP of 10 litres pure milk = ₹10

Now CP of 5 litres of water = 0

Therefore, CP of 15 litres mixed milk = ₹10

Given that, SP of 1 litre milk = ₹1.4

∴ SP of 15 litres mixed milk = $15 \times 1.4 = ₹21$

Thus, the profit = $21 - 10 = ₹11$

Thus, Profit % = $\frac{\text{profit}}{\text{cp}} \times 100 = \frac{11}{10} \times 100 = 110\%$

Hence, option (d) is the correct answer.

67) Answer: (c)

Difficulty Level: Medium

Micro Topic: Simple and Compound Interest.

Statement 1: Simple interest earned per year is ₹350.

SI = 350

$(P \times R \times 1) / 100 = 350$

$P \times R = 35000$ (i)

Statement 2: The difference in compound and simple interest earned on a certain amount of money over two years is 105.

D = 105 and time = 2 years

$D = (P \times R \times R) / 100 \times 100 = 105$

$(35000 \times R) / 100 \times 100 = 105$

R = 30%

Statement 3: At the rate of simple interest, a sum of money doubles in

$3 \frac{1}{3}$ years = $\frac{10}{3}$

Amount = 2P,

then SI = 2P - P = P

$P = (P \times R \times \frac{10}{3}) / 100$

R = 30%

Hence, option (c) is the correct answer.



68) Answer: (d)

Difficulty Level: Medium

Micro Topic: Geometry

Shape of football ground is a rectangle with length (X1) and breadth (X2).

Perimeter of the ground = 180 meters

$$2(X1 + X2) = 180 \text{ meters}$$

$$X1 + X2 = 90 \text{ meters}$$

Maximum possible value which X1 & X2 can have = 90 meters

Minimum possible value which X1 & X2 can have = 1 meter

But we have to find maximum possible area of the ground. For this to happen, their values should be as close as possible, which in our case is 45 meters each (as $X1 + X2 = 90$).

$$\therefore \text{Maximum area of the ground} = X1 \times X2 = 45 \times 45 = 2025 \text{ square meters}$$

Therefore, the area of the ground will not exceed 2025 square meters.

Hence, option (d) is the correct answer.

69) Answer: (a)

Difficulty Level: Medium

Micro Topic: Partnership

Given,

$$B = A + 100000$$

$$C = B - 50000$$

$$C = A + 50000$$

According to the question,

$$A + B + C = 600000$$

$$A + A + 100000 + A + 50000 = 600000$$

$$A = 150000$$

$$B = A + 100000 = 250000$$

$$C = A + 50000 = 200000$$

$$A : B : C = 150000 : 250000 : 200000$$

$$A : B : C = 3 : 5 : 4$$

$$C's \text{ profit share} = \frac{4}{12} \times 15600 = \text{Rs. } 5200$$

Hence, option (a) is the correct answer.

70) Answer: (c)

Difficulty Level: Medium

Micro Topic: Mensuration

Statement I: Total surface area = 576π

$$4\pi r^2 = 576\pi$$

$$r^2 = 144$$

$$r = 12 \text{ cm}$$



$$\text{Volume} = \frac{4}{3}\pi r^3 = \frac{4}{3}\pi \times 12 \times 12 \times 12 = 2304\pi \text{ cm}^3$$

Statement II: Diameter = 24 cm

Radius = 12 cm

$$\text{So, Volume} = \frac{4}{3}\pi r^3 = \frac{4}{3}\pi \times 12 \times 12 \times 12 = 2304\pi \text{ cm}^3$$

Hence, either statement 1 or 2 is sufficient to answer the question. Option (c)

71) Answer: (c)

Difficulty Level: Easy

- **Option (a) is INCORRECT:** This option is more focused on the need for assessing the value of ecosystem services rather than the direct comparison made in the passage between conservation benefits and exploitation profits.
- **Option (b) is INCORRECT:** This option discusses green accounting but is not the central point of the passage.
- **Option (c) is CORRECT:** This statement best captures the core message of the passage, which highlights that the economic benefits from natural services, such as flood protection and greenhouse gas regulation, far outweigh the short-term profits from activities like agriculture or logging.
- **Option (d) is INCORRECT:** Though related to conservation, this option doesn't reflect the main point about the economic comparison between nature's services and human activities like agriculture.

72) Answer: (b)

Difficulty Level: Easy

- **Option (a) is INCORRECT:** This statement partially captures the essence of the passage, as it describes some characteristics of the traditional masculine model, but it is too narrow to represent the full message of the passage.
- **Option (b) is CORRECT:** This is the best answer, as it accurately reflects the core message of the passage: that both masculine and feminine gender stereotypes are outdated, harmful, and lead to mental and physical health issues.
- **Option (c) is INCORRECT:** While this is mentioned in the passage, it focuses only on the feminine model and does not fully capture the broader critique of both masculine and feminine gender norms.
- **Option (d) is INCORRECT:** The passage discusses new guidelines being introduced to challenge outdated gender norms, so it does not suggest that psychological practices have always been centred around them.

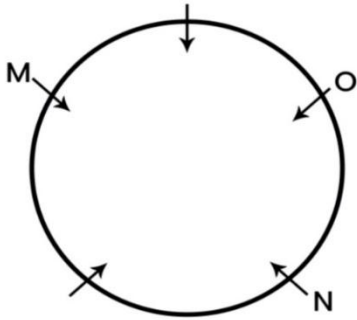
73) Answer: (c)

Difficulty Level: Medium

Micro Topic: General Mental Ability

Statement I:

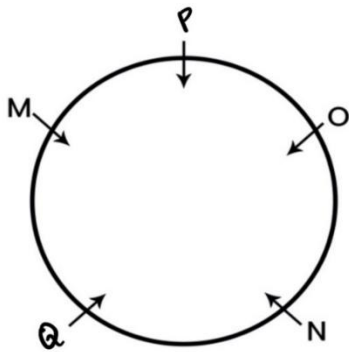
M is second to the left of N and second to the right of O. Thus statement I is not sufficient.



Statement II:

P is not an immediate neighbour of N. Thus, statement II is not sufficient.

Both statement I and II together: P is not an immediate neighbour of N.



Thus, Q is second to the left of O.

Hence, both statement I and II together are sufficient to answer the question.

Hence, option (c) is correct.

74) Answer: (a)

Difficulty Level: Medium

Micro Topic: Directions

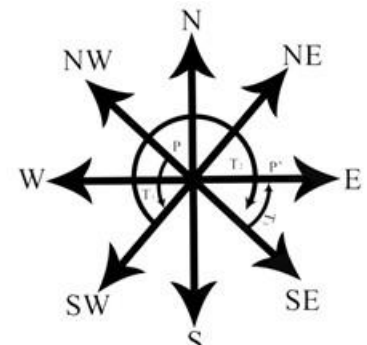
Given that, P is facing in North-West direction and rotates 90 degrees anticlockwise, so P's new direction will be South-West.

P then again turns 270 clockwise, so new position of P will be in South-East direction.

P then again turn 45 degrees clockwise, thus new position of P is P', which is in East direction.

Thus, P is now facing East direction.

Hence option (a) is the correct answer .





75) Answer: (b)

Difficulty Level: Medium

Micro Topic: Directions

Given that,

M # Z = Z is at 10m to the right of M.

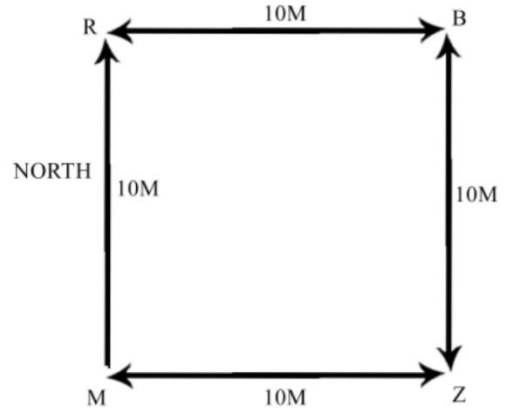
Z \$ B = B is at 10m to the North of Z.

B * R = R is at 10m to the left of B.

According to M # Z \$ B * R,

Thus, R is in North direction with respect to M.

Hence, option (b) is correct answer.



76) Answer: (c)

Difficulty Level: Hard

Micro Topic: Age problems

Statement I: X is as much younger than Y as he is older than Z.

Thus, difference of age between Y and X = the difference of age between X and Z.

$$Y - X = X - Z$$

Statement II: Sum of age of Y and Z is 68 years

$$Y + Z = 68$$

From statement I and II,

$$Y - X = X - Z$$

$$Y + Z = 2X$$

$$2X = 68$$

$$X = 34$$

Here we know the age of X which is 34 years, but we cannot determine the age of Y.

Hence, both statements I and II together are insufficient to answer the question.

Hence, option (c) is the correct answer.

77) Answer: (b)

Difficulty Level: Easy

Micro Topic: Calendar

Jan 1 2010 -Monday

Total year = 2024 - 2010 = 14 years

Leap years between = 2012, 2016, 2020 = 3 years

Total odd days = total years + leap years = 14 + 3 = 17 = 2 weeks + 3 odd days.

So, Jan 1 2024 → Monday + 3 days = Thursday

Hence, option (b) is correct.

78) Answer: (d)

Difficulty Level: Easy

Micro Topic: Coding decoding

Given that,

'Too many goals scored' = 2357..... (i)



'Many lost matches' = 514..... (ii)

'I scored six' = 893.... (iii)

From (i) and (ii) we get,

5 = many

From (i) and (iii) we get,

3 = scored

However goals can be represented by 2 and 7

Hence data is insufficient , **hence option (d) is correct**

79) Answer: (c)

Difficulty Level: Hard

Micro Topic: Cubes

Given that, a larger cube of side 1.56 m = 156 cm is divided into smaller cubes of side 12 cm.

Total number of small cubes = $\text{side of large cube} / \text{side of small cube} = 156 / 12 = 13$

Statement I: cubes painted with three surfaces = number of corner cubes.

Corner cube are always 8. Hence, **statement I is correct.**

Statement II: Total number of cubes painted with only two surfaces = number of middle cubes in edges

$$= 12 \times (n-2)$$

$$= 12 \times (13-2)$$

$$= 132$$

Hence, **statement II is incorrect.**

Statement III: Total number of cubes painted with only one surface = number of central cubes

$$= 6 \times (n-2)^2$$

$$= 6 \times (13-2)^2$$

$$= 6 \times 121$$

$$= 726$$

Hence, statement III is incorrect.

Hence, option (c) is correct answer.

80) Answer: (b)

Difficulty Level: Easy

Micro Topic: Data interpretation

The total production of bike X = (50 + 40 + 55 + 45 + 60 + 50) thousands = 300 thousand bikes,

So average production of bike X = $300 / 6 = 50$ thousand bikes

The total production of bike Y = (55 + 60 + 50 + 55 + 50 + 55) thousand bikes = 325 thousand bikes.

So average production of bike Y = $1/6 \times 325 = 54.17$ thousand bikes (approx)

Therefore Difference = $54.17 - 50 = 4.17$ thousand bikes

Percentage required = $(4.17 / 50) \times 100 = 8.3\%$

Hence, option (b) is the correct answer.