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Test Booklet Series

C

परीक्षण पुस्तिका अनुक्रम

anubhav-2025

ALL INDIA OPEN MOCK TEST

GENERAL STUDIES PAPER-II

(23rd March, 2025)

Answer Key

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

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1. (b)

Option (a) is incorrect: While AI is discussed in terms of its potential to affect industries, the passage does not suggest a complete overhaul or the obsolescence of all industries.

Option (b) is correct: The passage focuses on the dual nature of AI's impact, mentioning both job creation and concerns over job displacement and privacy.

Option (c) is incorrect: The passage acknowledges job displacement concerns but also suggests that AI may create new jobs in other sectors, rather than making the workforce redundant.

Option (d) is incorrect: The passage stresses that the future of AI is uncertain, with both benefits and drawbacks, implying that universal acceptance is may not be a given.

2. (b)

Option (a) is incorrect: The passage acknowledges both positive and negative effects of social media, suggesting it should be regulated to address its harms.

Option (b) is correct: The passage highlights the positive impacts of social media but states 'there is still a lack of consensus on how to strike the right balance between freedom of speech and preventing harm.'

Option (c) is incorrect: The passage notes that efforts to regulate social media have been introduced, but we cannot state that they have failed.

Option (d) is incorrect: The passage identifies multiple problems with social media, including misinformation, but does not compare with print media.

3. (d)

Statement (1) is correct: Passage states 'renewable energy offers significant environmental benefits, including a reduction in greenhouse gas emissions'. This means other benefits exist.

Statement (2) is correct: The passage highlights 'there are concerns about the environmental impact of large-scale renewable energy infrastructure, such as the disruption of ecosystems'.

Statement (3) incorrect: The passage does mention that 'they are not yet reliable enough to meet all energy demands' so 'cannot use' is invalid.

4. (b)

Option (a) is incorrect: The passage highlights the negative effects of global trade like increasing emission but we cannot state 'has caused climate change '. We can state that it 'may have contributed to climate change' but not caused.

Option (b) is correct: The passage presents both the benefits global trade economic growth but it also emphasizes the negative effects like exploitation, inequality, and environmental harm.

Option (c) and (d) are incorrect: MNCs competing with each other or targeting local businesses is not discussed.

5. (b)

The total number of ways to choose 2 stations from x stations: ${}^{x}C_{2} = x(x-1)/2$ = Total number of buses.

Diesel buses connect the nearest neighbouring stations. Since the stations are arranged in a circular path, each station is connected to two nearest stations, and there are x such pairs of nearest neighbouring stations. Therefore, the total number of diesel buses = x.

The remaining buses connect all other pairs of stations. These are the pairs that are not nearest neighbours. To find the number of electric buses, subtract the number of diesel buses from the total number of buses:

No. of electric buses = ${}^{x}C_{2} - x = x(x-1)/2 - x$

Hence, $x(x-1)/2 - x = 36x$, solving this we get, $x = 75$

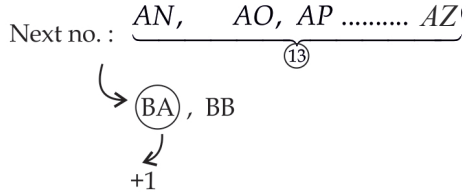
6. (a)

Statement 1

UP60AM0005

UP60BB005

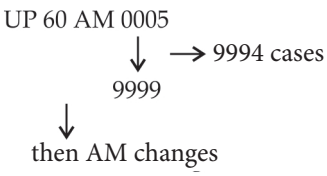
Only these 2 are varying:



So beetween these two cars, there will be 14 (13+1) total registrations.

Statement 1 is correct.

Statement 2



So, next we have these possibilities:

UP 60 BB 0001

UP 60 BB 0002 → 4 cases

UP 60 BB 0003

UP 60 BB 0004

Hence, total number of cars with the same pair of alphabats (AM or BB) is = 9998 (9994 + 4)

So statement 2 is incorrect

Hence, option (a) is correct.

7. (d)

Total no 1-digit numbers possible = 4 (allowed digits 2, 4, 6, 9)

Total no 2 digit numbers possible = 4×5 = 20

Total no 3 digit numbers possible = 4×5×5 = 100

Total no 4 digit numbers possible = 3×5×5×5 = 375

So the number of natural numbers less than 9,000 possible are = 4 + 20 + 100 + 375 = 499

8. (a)

P(A) - 0.4

P(B) = 0.3

P(C) = 0.3

Let D → Event that space part is defective

So, P(D/A) = 2/100

P(D/B) = 3/100

P(D/C) = 4/100

$$\text{So, } P(B/D) = \frac{P\left(\frac{D}{B}\right)\times P(B)}{P\left(\frac{D}{A}\right)\times P(A)+P\left(\frac{D}{B}\right)\times P(B)+P\left(\frac{D}{C}\right)\times P(C)}$$

$$= \frac{\frac{3}{100}\times 0.3}{\frac{2}{100}\times 0.4+\frac{3}{100}\times 0.3+\frac{4}{100}\times 0.3}$$

$$= \frac{\frac{9}{1000}}{\frac{8}{1000}+\frac{9}{1000}+\frac{12}{1000}}$$

$$= \frac{9}{8+9+12} = \frac{9}{29} = 0.3$$

Hence, option (a) is correct.

9. (c)

Minimum Attempts = 6(left hand red glove) +6(right hand red glove) +8(left/right hand blue gloves)+1(right/left blue glove) = 21

10. (c)

	P(6 Friends)		Q(6 Friends)	
	4 Ladies	2 Men	2 Ladies	4 Men
Case 1	2	0	0	2
Case 2	0	2	2	0
Case 3	1	1	1	1

In Case 1, Case 2, Case 3, total 4 friends are present and 2 from P and 2 from Q and among those 4 friend 2 are ladies and 2 are men in every case.

∴ No of ways in which 4 friends can be invited

$=({}^4C_2\times{}^2C_0\times{}^2C_0\times{}^4C_2)+({}^4C_0\times{}^2C_2\times{}^2C_2\times{}^4C_0)+({}^4C_1\times{}^2C_1\times{}^2C_1\times{}^4C_1)$

$= 36 + 1 + 64 = 101$

11. (b)

The passage highlights two main concerns: the future of employment due to automation and the lack of regulation, which allows large corporations to dominate AI development. It concludes by emphasizing the urgent need for thoughtful regulation, making option (b) the most accurate choice.

Why the others are incorrect:

(a) Incorrect—the passage does not argue that AI will improve workers' quality of life; rather, it raises concerns about automation and control.

(c) Incorrect—the passage does not claim that regulation will eliminate AI's impact on employment, only that it is necessary.

(d) Incorrect—the passage argues that ethical concerns are real and require regulation, not that they are overstated.

12. (c)

The passage discusses both the positive and negative effects of globalization. While it acknowledges economic growth, it also highlights job displacement due to outsourcing and inequality, which have led to backlash. This makes (c) the most accurate choice.

Why the others are incorrect:

(a) Incorrect—the passage states that globalization has contributed to economic growth but does not claim it has benefited most globalized economies.

(b) Incorrect—the passage does not specify that developing countries face more challenges; rather, it focuses on workers affected by outsourcing, which can include developed nations.

(d) Incorrect—the passage states that outsourced industries are a major concern, implying a strong impact on affected workers, not less.

13. (b)

The passage emphasizes both the promise and the risks of genetic engineering, particularly focusing on unintended con-sequences and ethical dilemmas. It suggests that balancing scientific progress with ethical considerations will be a major challenge.

Why the other options are incorrect:

(a) Incorrect—the passage does not suggest that the potential to eradicate diseases is being overlooked.

(c) Partially correct, but too narrow—while designer babies are mentioned, the broader issue is the ethics of genetic engineering as a whole.

(d) Incorrect—it implies that ethical concerns can be fully resolved by scientific progress, whereas the passage presents them as an ongoing challenge.

14. (a)

Let total income of A is X and B is Y, then we have to find out whether $3X > 4Y$ i.e. $X > 1.33Y$.

Statement 1: $X/5 > Y/4$ Hence, $X > 1.25$ Y but whether $X > 1.33Y$ can't be surely said.

Statement 2: $13Y > 10X$, Hence, $X < 1.3Y$ So, X is definitely not greater than 1.3Y. Hence the question can be answered using 2 alone.

Hence **question can be answered using 2 alone but not using 1 alone.**

15. (d)

Statement 1: let b = 4

Then, $2^{66} < 4^{22}$ i.e. $2^{66} < 2^{44}$ which is false.

Let b = 16, then $2^{66} < 2^{88}$ which is true. Hence question cannot be answered using 1 alone.

Statement 2: Given, b > 6, let b = 8, then Is

$2^{66} < 8^{22}$ i.e. $2^{66} < 2^{66}$ which is wrong.

Let b = 16, then $2^{66} < 2^{88}$ which is true. Hence question cannot be answered using 2 alone.

Question cannot be answered using both the statements together also.

16. (c)

Statement I: a(c+d) + b(c+d) = 36, hence (a+ b)(c+d) = 36

Statement II: c + d = 12, hence a + b = 3

Hence, question can be answered using both the statements together.

17. (c)

Let's decode the given statement first:

1. **Dog 2 Cat**: This means **Only a few Dogs are Cats** (because **P2Q** means "Only a few P is Q").
2. **Cat 4 Rabbit**: This means **A little Cat are Rabbits** (because **P4Q** means "A little P are Q").
3. **Rabbit 0 Tiger**: This means **No Rabbit is Tiger** (because **P0Q** means "All P are Q").
4. **Dog-Tiger 8 Lion**: This means **Neither Dog nor Tiger is Lion** (because **P-Q8R** means "Neither P nor Q is R").

Now, let's analyze the conclusions:

Conclusion I: Some Dogs are Tigers

- The statement **Dog-Tiger 8 Lion** indicates that **neither Dog nor Tiger is Lion**, but this doesn't provide any direct relationship between Dogs and Tigers. There's no information suggesting that some Dogs are Tigers.
- **Conclusion I does not follow**.

Conclusion II: No Rabbit is Lion

- From the statement **Rabbit 0 Tiger**, we know that **no Rabbit is Tiger**, and **Dog-Tiger 8 Lion** tells us that neither Dog nor Tiger is Lion. All rabbits are tigers, Hence, no rabbit can be lion
- **Conclusion III: All Cats are Rabbits**
- From the statement **Cat 4 Rabbit**, we know that **a little Cat are Rabbits**, but it doesn't imply that **all Cats are Rabbits**. So, **Conclusion III does not follow**.

Hence, option (c) is correct.

18. (b)

Let X be the cost price of object X and Y be the cost price of object Y. The person sells two objects X and Y at the same price such that he makes a profit of 20% on object X and a loss of 10% on object Y.

Therefore, $1.2 \times X = 0.9 \times Y$

$4X = 3Y$

$Y = 4/3X$

To sell object Y at a profit of 10%, the selling price of Y must be 1.1 Y or 11/10 Y Object X is sold at the same price as object Y, that is, $11/10\ Y = 11/10 \times 4/3\ X = 1.466\ X$ The profit obtained on object X in such a trade will be 46.66% or nearly 47%.

19. (d)

Statement (I): For 5 Sundays in the month of August, first day can be Sunday, and hence, last day of the month can be Tuesday.

Hence, 1st September could be Wednesday.

Hence, September can have 5 Wednesday and 5 Thursdays.

Hence Statement I is wrong.

Statement II: Feb 16 to Mar 16: odd days = 0 or 1

Mar 17 to Apr 16: odd days = 3

Apr 17 to May 16: odd days = 2

Hence total odd days = 5 or 6. Hence, 16 May can be Friday or Saturday.

Hence II is also wrong.

20. (a)

Given, $n + 1 + n + 3 + n + 5 + \ldots\ldots + n + 35 = 1800$

This is an A.P with first term = $n + 1$, common

difference = 2 and last term = $n + 35$

Let T no. of terms are there in this A.P, then

Hence, $n + 35 = n + 1 + (T - 1)2$

T = 18.

Sum of T terms in A.P = $18/2\ [n+1+n+35]$ = $9 \times 2[n + 18] = 1800$, hence $n = 82$

Hence, $1 + 2 + 3 \ldots\ldots + n = 1 + 2 + 3 + \ldots. + 82$ = $82 \times 83/2 = 41 \times 83 = 3403$.

21. (c)

The passage emphasizes the need for a comprehensive approach, including sustainable farming, reduced waste, and equitable resource access. Therefore, (c) is correct.

22. (b)

The passage focuses on the displacement of workers and the widening gap between high-skill and low-skill jobs due to automation.

(a) is incorrect because automation does not have this 'inability' based on the passage.

(c) is incorrect because automation may cause this disturbance it is not yet a problem, also we cannot state if it can be reversed.

(d) is incorrect because automation does not have this 'overemphasis' based on the passage.

Hence, (b) is the correct answer.

23. (c)

Option (a) is incorrect: The passage mentions both the potential benefits and controversies surrounding GMOs, but does not suggest that they are a time-tested solution to food insecurity.

Option (b) is incorrect: While ethical concerns are mentioned, the passage does not mention their ability to be sustainable.

Option (c) is correct: The passage emphasizes the need for careful consideration of both the benefits and drawbacks of technological advancements in food production, including environmental and ethical concerns.

Option (d) is incorrect: The passage mentions scalability issues with organic farming and its inability to meet global demands, making it an impractical solution for the world's food needs.

24. (a)

$42 = 2 \times 3 \times 7$

Now, $28 = 2^2 \times 7$, 41 is prime, $49 = 7^2$, $57 = 3 \times 19$, $63 = 3^2 \times 7$, $69 = 3 \times 23$, $250 = 2 \times 5^3$, $243 = 3^5$, $343 = 7^3$, $490 = 2 \times 5 \times 7^2$, $91 = 7 \times 13$

Total power of 2 = 4, Total power of 3 = 9,

Total power of 7 = 10

We need to find maximum value of n in $42^n = (2 \times 3 \times 7)^n$ which divided the given product.

Total power of 2 is the lowest i.e. 4 Hence, maximum value of n such that 42^n divides the product is 4.

25. (c)

Ajay has two separate investments:

1. **Investment 1**: Rs 16,000 at 9% interest, compounded annually for one year.
2. **Investment 2**: Rs 5,000 at 8% interest, compounded semi-annually for one year.

Investment 1: Rs 16,000 at 9% Compounded Annually

$A = P\ (1 + r/100)^n$, $A = 16000\ (1+9/100)^1 = 16000 \times 1.09 = 17440$

Hence, interest earned = 17440 – 16000 = 1440

Investment 2: Compounded half yearly, $A = P(1 + r/200)^{2n}$, here $r = 8$, $n = 1$,

Hence, $A = 5000\ (1 + 8/200)^2$, hence A = 5408.

Hence, interest earned = 5408-5000 = 408

Total interest earned by Ajay = 1440 + 408 = 1848

Vijay's investment: - $I = (P \times r \times t)/100$,

Hence, $1848 = (P \times 7.5 \times 1)/100$,

Hence P = 24640

Hence amount invested by Vijay = Rs 24640.

26. (c)

The area of the first square would be 4096 sq cm. and of second square would be 2048, then 1024, then 512 and so on. The infinite sum of the geometric progression 4096 + 2048 + 1024 + 512 + 256 + 128…. Hence, the sum of all the areas = 4096/(1 – 1/2) = 8192 sq cm.

27. (a)

R V S T U facing North

P O M Q N facing South

28. (d)

P, R and U are sitting at corners but not Q.

R V S T U facing North

P O M Q N facing South

29. (a)

Statement I: 28 families have a car and hence 10 families must have both. We don't know how many families neither have car nor have bike. Hence question cannot be answered using I alone.

Statement II: Given that, the number of families in the neighbourhood who have a bike and a car is the same as the number of families who have neither a car nor a bike. Hence, no of families who have a bike = 60 – 38 = 22.

Hence, question can be answered using II alone.

30. (b)

Statement I: Let total words be W. Then time to type the letter at 80 words per minute = W/80 and time to type the letter at 80 words per minute = W/60. Given, W/60 -W/80 = 2.

Hence, W = 480.

Hence, question can be answered using I alone.

Statement II: It will take 6 minutes to type the first half of the letter at an average speed of 40 words per minute.

This statement gives us information about the time it takes to type the first half of the letter. If the total number of words is W, then the first half of the letter contains W/2 words.

At a speed of 40 words per minute, the time to type W/2 words is: W/2/40 = W/80 which is equal to 6. Hence, W = 480.

Hence, question can be answered using II alone.

Hence, **each statement alone is sufficient to answer the question.**

31. (c)

The passage highlights that climate change policies are contentious, and socio-economic impacts are tied to political will and global cooperation. It doesn't imply that technological advancements will reverse climate shifts. Therefore, (c) is correct.

32. (c)

The passage focuses on the negative impact of rapid urbanization on the environment and the increasing disconnection between urban dwellers and nature. It also highlights the tension between progress and preservation. While technological advancements are discussed, the central concern is the environmental degradation that accompanies rapid urban expansion.

33. (c)

The passage states that the demand for efficient infrastructure often leads to a disjointed approach to urban planning, which overlooks long-term effects on ecosystems and biodiversity. This suggests that urban planning has not always accounted for the environmental consequences.

34. (d)

Option (a) is incorrect: The passage discusses this as a challenge and not as a near impossibility.

Option (b) is correct: The passage does not

state that we cannot do this sustainably.

Option (c) is incorrect: The passage mentions 'Cities that', this phrase means that some cities did this and not all cities as the option suggests.

Option (d) is correct: The passage states 'The loss of green spaces have led to deteriorating environmental conditions. Urban dwellers, who once had a closer connection to nature, now find themselves increasingly disconnected'.

35. (c)

According to the given information, the following arrangement is possible: -

Packet	No. of Pencils
Q	62
S	30
T	25
U	22
P	83
R	34

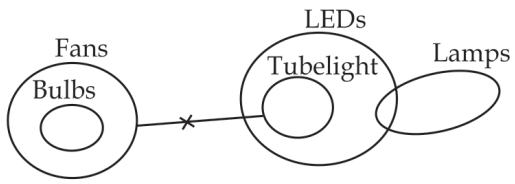
36. (c)

Combining both statements, Total number of persons = 18 +10 – 1 = 27.

Hence, number of persons other than Rahul and Sonal are 25.

Hence, Question can be answered using both the statements together.

37. (d)



38. (c)

Weight of P can be anything between weight of T and U. The arrangement is as follows:

$$Q > T > P > U > R > S$$
$$\downarrow \qquad \downarrow$$
$$96kg \qquad 88kg$$

39. (a)

Given rules:

D- Not on Monday

A(Monday) then D(Friday)

D(Tuesday) then B (Monday)

E-C

Hence, C cannot be delivered on Monday as C has to be delivered after E.

40. (a)

Parcel B is delivered on Wednesday.

Monday Tuesday Wednesday Thursday Friday

Now, E will be delivered on either Monday or Thursday.

Monday Tuesday Wednesday Thursday Friday (1)

E C B

OR

Monday Tuesday Wednesday Thursday Friday (2)

B E C

We can see that (2) is not possible, because A has to be delivered on Monday (D cannot be delivered on Monday) and in that case D should be delivered on Friday, which is not possible.

So, (1) has to be true. A and D can be interchangeably delivered on Thursday or Friday without violating any condition.

So, option (a) is definitely true.

41. (b)

Option (a) is incorrect: The passage presents both benefits and concerns about UBI, not universal acceptance.

Option (b) is correct: The passage discusses both the potential benefits and challenges of UBI, suggesting the need for careful evaluation.

Option (c) is incorrect: The passage does not advocate for immediate implementation but rather discusses the debate surrounding UBI.

Option (d) is incorrect: The passage does not reject UBI outright, but discusses concerns such as cost and inflation alongside its potential benefits.

42. (b)

Option (a) is incorrect: While climate change is mentioned as a factor, the passage emphasizes multiple causes of water scarcity and the need for sustainable management.

Option (b) is correct: The passage identifies the multifaceted causes of the water crisis and stresses the need for urgent, sustainable management of water resources.

Option (c) is incorrect: The passage implies that water scarcity is a global issue, not just confined to developing countries.

Option (d) is incorrect: The passage highlights that desalination and water conservation programs are expensive and may not be sustainable in the long term.

43. (c)

Option (a) is incorrect: The passage mentions that many students are struggling with online learning, indicating that the long-term effectiveness of online education remains uncertain.

Option (b) is incorrect: The passage does not suggest that online learning will replace all other methods of education.

Option (c) is correct: The passage highlights the digital divide and the challenges that students and teachers face in adapting to online learning, leading to disparities in educational opportunities.

Option (d) is incorrect: The passage states that many teachers feel unprepared to deliver effective online lessons, indicating that challenges exist.

44. (c)

Statement (1) is incorrect: Passage states the discipline of students is a factor and does not associate it with teachers and others.

Statement (2) is correct: The passage 'Teachers also face difficulties in adapting their teaching methods to a digital format, and many report feeling unprepared to deliver effective online lessons.'

Statement (3) correct: The passage mentions that 'digital learning has been accelerated by the COVID-19 pandemic' and that 'students in low-income areas may lack the necessary technology or internet access to participate in online classes'.

45. (d)

Let the total capacity of the tank be 180 litres:

Efficiency of A = 15 litre/hr.

Efficiency of B = 12 litre/hr.

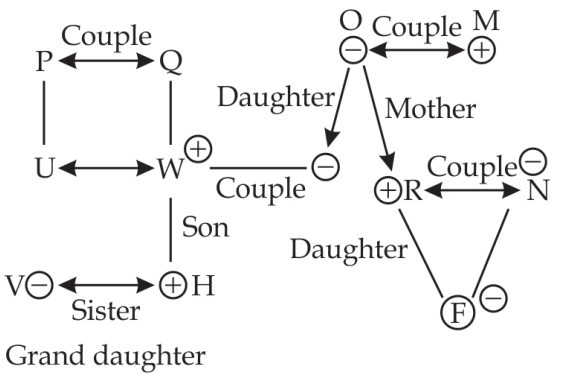
Efficiency of C = –18 litre/hr.

Time taken to fill the tank to 40% of its capacity (i.e., 72 litres) = 72/27 = 2 hours 40 minutes. After 2 hours 40 minutes, Z starts working. The rate at which the tank would be filled after this would be: 15 + 12 – 18 = 9 litres per hour. The total quantity to be filled in order to fill up the tank = 180 – 72 = 108 litres. This will take 108/9 = 12 hours to complete.

Hence, the supervisor comes back after: 12 hours + 2 hours 40 minutes = 14 hours 40 minutes.

Hence, he is supposed to come back at: 4:40 a.m. (the next day).

46. (a)



47. (c)

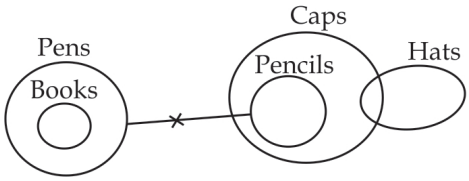
Each letter is coded with its right and left letter.

GOD → HF PN EC → 86 1614 53

SKY → TR LJ ZX → 2018 1210 2624

FUN → GE VT OM → 75 2220 1513

48. (c)



49. (c)

For S1: Boys = 3/11 × 88 = 24

and Girls = 8/11 × 88 = 64

For S2: Boys = 2/5 × 55 = 22

and Girls = 3/5 × 55 = 33

For S3: Boys = 8/19 × 76 = 32

and Girls = 11/19 × 76 = 44

For S4: Boys = 16/41 × 82 = 32

and Girls = 25/41 × 82 = 50

For S5: Boys = 3/7 × 63 = 27

and Girls = 4/7 × 63 = 36.

Hence, P = 32, Q = 36, V = 33 and W = 24, then Q>V>P>W.

Hence only I is correct remaining are wrong.

50. (d)

Tank	Net Inflow/Outflow (In Litre/Minute)
T1	Inflow(20)
T2	Inflow(40)
T3	Outflow(10)
T4	Outflow(50)

So, tank T4 would get emptied first and it would take 2000/50 = 40 minutes.

Hence, option (d) is correct.

51. (a)

The passage highlights that industries, especially in developing countries, resist cleaner technologies due to economic viability concerns, which aligns perfectly with option (a).

Why the others are incorrect:

(b) Incorrect—cost is explicitly mentioned as a key concern.

(c) Incorrect—industries globally impact climate strategies, not just in developing countries.

(d) Incorrect—the passage states the benefits are clear; there's no mention of scientific skepticism.

52. (b)

The passage highlights that while there is strong support for banning single-use plastics, industries face financial difficulties in transitioning to sustainable alternatives because plastic is cheap and convenient. This creates a conflict between environmental goals and economic interests, making it the central dilemma.

Why the others are incorrect:

(a) **Incorrect—**the passage mentions enforce-ment challenges but focuses more on the economic vs. environmental debate.

(c) **Incorrect—** it doesn't argue that banning plastics results in missed economic benefits, only that industries struggle to transition.

(d) **Incorrect—** it doesn't discuss how to make plastic bags eco-friendly, just the difficulty in replacing them.

53. (b)

The passage clearly states that transitioning to a low-carbon economy requires systemic change and substantial investment. It also mentions that this shift will likely entail significant short-term costs, particularly for industries dependent on

fossil fuels. This directly supports option (b).

Why the others are incorrect:

(a) **Incorrect**—the passage says technological advancements are promising but not a panacea, meaning they are not sufficient on their own.

(c) **Incorrect**— the passage explicitly states that rethinking the global economic system is necessary.

(d) **Incorrect**—the passage highlights fossil fuel industries but does not compare their impact to agriculture.

54. (c)

Lemons, carrots, onions and potatoes are distributed in the ratio of their weights 2:3:4:5

Rate of lemons = 3 x rate of carrots = 3 × 40 = Rs. 120 per kg

Rate of potatoes = Rate of onions/2 = 60/2 = Rs 30 per kg

Statement I: Average expenditure = (2 × 120 + 3 × 40 + 4 × 60 + 5 × 30)/(2 + 3 + 4 + 5) = (240 + 120 + 240 + 150) / 14 = Rs. 53.57/kg.

Hence statement I is wrong.

Statement II: Expenditure on Lemons and Potatoes = 240 + 150 = 390 and Expenditure on Carrots and Onions = 120+240 = 360. Hence statement II is correct.

Statement III: Ratio of expenditure on lemons to Onions = 2 × 120/4 × 60 = 1,

Hence statement III is wrong.

55. (b)

Let there be n students in the class. The number of pencils distributed in the class would be: $1 + 2 + 3 + \ldots + n = n(n + 1)/2$

Let the student with roll no. 'a' got twice as many pencils as compared to his entitlement.

Then, $n(n+1)/2 + a = 1500$, hence $n(n+1) + 2a = 3000$. We can identify, that n should be 54, since 54 × 55 = 2970, is the last product of two consecutive integers below 3000.

2a + 2970 = 3000 or 2a = 30 or a = 15.

56. (b)

1. HCF(x, y) = 3 and x + y = 63, let x = 3m and y = 3n, 3m + 3n = 63, hence m + n = 21, i.e. (1,20), (2,19), (4,17), (5,16), (8,13), (10,11).
   Hence, there are more than 5 solutions.
2. If HCF(x,y) = 1 and HCF (x,z) = 1 then x and y are coprime also x and z are coprime.

If two numbers are coprime, their product with another coprime number will also be coprime.

Let x = 4, y = 3, z = 9, then HCF (4,3) = 1 & HCF (4,9) = 1 and HCF (12, 3) = 3

Hence the given statement is correct.

Hence, option (b) is correct.

Solution for Q.57-Q.58:

Person	City	Profession
Ganesh	Kolhapur	Freelancer
Harry	Gangtok	Clerk
Jani	Bhilai	Palmist
Kuldeep	Aligarh	Plumber
Lovely	Chennai	Banker
Monty	Dehradun	Analyst
Nutan	Ludhiana	Technician

57. (b)

58. (b)

59. (c)

Statement 1: The last digit of 54892 is 2. Therefore, we need to find the last digit of $2^{175!}$, Cyclicity for 2 is 2,4,6,8. Now 175! is divisible by 4 since it includes multiples of 4. Hence $!175 \equiv 0 \pmod 4$. This means 175! corresponds to the 4th position in the cycle 2,4,8,6 which has the last digit 6. Thus, the last digit of $2^{175!}$ is 6.

Now, cyclicity for 7 is: 7,9,3,1 (repeating every 4 terms). 92! is also divisible by 4, so:

92! ≡ 0 (mod4). This means 92! corresponds to the 4th position in the cycle 7,9,3,1 which has the last digit 1.

Thus, the last digit of $7^{92!}$ is 1.

Hence, last digit = 6 x 1 = 6

Statement 2: Logic: Multiplication of prime numbers: 2×3 =6, 3×5 =15, 5×7 =35, 7×11 =77, 11×13 = 143, 13×17 = 221, hence 17×19 = 323

Hence, option (c) is correct.

60. (c)

Let the production cost be Rs 100.

Contribution of C1 = Rs 15 & Contribution of C2 = Rs 18. Selling price = Rs 125.

Now, cost of C1 = 15 + 20% of 15 = Rs 18 and cost of C2 = Rs 18 + 50% of 18 = Rs 27.

New production cost = Rs 112,

New selling price = 1.2 x 125 = Rs 150. Profit percentage = [150 – 112/112] × 100 = 33.9%.

61. (b)

The passage highlights concerns about the negative impact of social media on self-esteem, particularly among adolescents, due to constant comparison to idealized online images. It also addresses the rise in polarization, making option (b) the most accurate answer.

62. (b)

The passage discusses how algorithms on social media platforms are designed to keep users engaged, often by reinforcing their existing beliefs and limiting exposure to diverse viewpoints. This is consistent with option (b).

63. (d)

Option (a) is incorrect: The passage does not suggest the obvious need for clear regulations. This implies existing regulations are unclear which is invalid.

Option (b) is incorrect: We cannot conclude that it is most effective for educating the electorate.

Option (c) is incorrect: 'The only issue' cannot be inferred.

Option (d) is correct: The passage mentions the 'The echo chamber effect' which makes this conclusion valid.

64. (c)

Ranking is as below:

1. (Richest) Armaan >Arjun > Anil > Amol > Ajay > Abhay
2. (Weight) Anil> Armaan> Abhay> Arjun> Amol> Ajay

65. (a)

1. Let price of B be Rs 100. Then price of A = 80. Price of A = C+25% of C.

Hence, 80 = 5C/4, hence C = Rs 64, hence C is 100 – 64 = 36 cheaper than B.

2. Let B = 100, then A= 115, hence A-B/A x 100 = 15/115 x 100 = 13.04%

66. (c)

Let S.P be 100, then C.P1 = 100/0.75 = 133.33, C.P2 = 100/1.1 = 90.90 and CP.3 = 100/0.8 = 125. Hence Average C.P = (133.33 + 90.90 +125) / 3 = 116.41, Then required percentage = (average C.P – average S.P)/ average S.P = (116.41 -100)/100 = 16.41%

67. (a)

Container X: The total capacity of container X is 3k, and the ratio of alcohol to water is 2:5. Then alcohol = 2/7 x 3k = 6k/7 and water = 5/7 x 3k = 15k/7

Container Y: The total capacity of container Y is 4k, and the ratio of alcohol to water is 3:5. Then alcohol = 3/8 x 4k = 3k/2 and water = 5/8 x 4k = 5k/2

Container Z: The total capacity of container Z is 9k, and the ratio of alcohol to water is

4:5. Then alcohol = 4/9 x 9k = 4k and water = 5/9 x 9k = 5k

Total Alcohol = 6k/7 + 3k/2 + 4k = 89k/14

Total Water = 15k/7 + 5k/2 + 5k = 135k/14

Hence, ratio of alcohol to water = 89/135

68. (d)

I. Suppose he uses x litres every day and now he is using 1.2 x litre petrol every day and let this will last for y days, then, x X 12 = 1.2x X y hence y = 10 days.

II. A is twice fast as B therefore B can complete the job in 6 days. Similarly, C can complete the job in 12 days. Therefore, together they can complete the job in 1/[1/3 +1/6 +1/12] days = 12/7 = 1.71 days.

69. (d)

Given Data:

1. India's last 15 ODIs (all lost tosses)
   - Won: 10, Lost: 4, Tied: 1
   - Probability of winning given a lost toss = 10/15 = 2/3
2. India under Rohit Sharma (12 ODIs, all lost tosses)
   - Won: 8, Lost: 3, Tied: 1
   - Probability of winning given Rohit lost the toss = 8/12 = 2/3
3. India in 2025 (8 ODIs played, all won)
   - If Rohit was the captain in all 8 matches and lost the toss (based on the pattern),

     then India's probability of winning when Rohit loses the toss in 2025 is 100% = (8/8).

Evaluating the Statements:

1. **Statement 1:** If India loses the toss in its next ODI, the probability that it will win is 2/3.
   - From the first dataset (15 matches), the probability of India winning when losing the toss is 10/15 = 2/3.
2. **Statement 2:** If Rohit Sharma loses the toss in India's next ODI, the probability that India will win is 2/3.
   - From the second dataset (12 matches under Rohit), the probability of winning when he loses the toss is 8/12 = 2/3.
3. **Statement 3:** Based on India's performance in 2025, the probability that Rohit Sharma loses the toss and India wins its next ODI is 100%.
   - In 2025, India played 8 ODIs and won all 8.
   - Given the trend of losing tosses, it is reasonable to assume Rohit lost the toss in all 8 matches.
   - If India wins all such matches, then the probability of winning when Rohit loses the toss in 2025 is 100% (8/8 = 1 or 100%).

70. (d)

Statement 1: Let's assume that 100 students gave exam and 50 students scored 90, 50 students scored 20, then average = (50 x 90 + 50 x 20)/100 = 55, hence average is 55.

Let 50 students scored 39.5 and 50 students scored 40.5, average = (50 x 39.5 + 50 x 40.5)/100 = 40. Hence question cannot be answered using I alone.

Statement 2: Only extremes are given and overall distribution of marks are not given.

Hence, **Question cannot be answered using both the statements together also.**

71. (b)

The passage outlines several challenges in democratic systems, such as inefficiency, political polarization, and the undue influence of money and interest groups.

72. (c)

Despite its challenges, democracy is valued for allowing greater political participation, accountability, and the protection of individual freedoms, which are central to the system.

73. (a)

The passage states that while education is often seen as a solution, its impact depends on implementation. It specifically argues that simply increasing access is not enough if education does not align with local and global needs. This directly supports option (a).

Why the others are incorrect:

(b) Partially correct, but it misrepresents the passage, which emphasizes both local and global alignment, not just regional goals.

(c) Too broad—the passage discusses education's importance but also highlights its limitations in solving global challenges alone.

(d) Incorrect—the passage does not claim that quality education alone will solve poverty and inequality.

74. (c)

The total man-days of work (for engineering students) = 1 + 3 + 6 + 10 + 15 + 21 + 28 + 36 + 45 + 55 + 66 + 78 + 91 + 105 + 120 + 136 + 153 + 171 = 1140 man-days for engineering students.

Given that a medical student is twice as efficient as an Engineering student, the number of man-days required for medical students to complete the same task would be 1140/2 = 570 man-days. With 15 medical students working at it, the number of days required to complete the job would be: 570/15 = 38 days.

75. (a)

Area of S1 = 1, Area between S1 and S2 = 3/2 – 1 = 1/2

Area between S2 and S3 = 7/4 – 3/2 = 1/4 and so on.

Hence, it will form am infinite G.P with a = 1 and r = 1/4, hence Sum of infinite G.P = 1/(1 – 1/2) = 2.

Hence, option (a) is correct.

76. (a)

Statement I: Set S consists of 30 integers. If every third multiple of 14 is a multiple of 21, then there would be 10 multiples of 21 in Set S. This statement is sufficient alone.

Statement II: The smallest integer in Set S is a multiple of 21. This statement is not sufficient alone since it does not indicate the number of members of the set.

77. (a)

Statement 1: Every factor of b is also a factor of a. This means that whatever factors are in the denominator, those same factors are also in the numerator. So, if b = 30 (with factors of 2 • 3 • 5) then a will have at least these factors. In other words, a will be a multiple of 30. If a has all of the factors of b then a/b will always be an integer. This statement is sufficient.

Statement 2: Every factor of a is also a factor of b. This statement may seem to be identical to Statement 1, but it is not! All of the factors of a will also be present in b, but b could contain other factors. For instance, a could be 30 and b could be 60, meeting all the conditions in this statement. Or they could each be equal to 30. This statement allows for a/b to be the integer 1 but also many non-integers, so it is not sufficient.

Hence statement I alone is sufficient to answer the question.

78. (c)

Statement I: Sum of multiples of 5 between 100 and 500:

Multiples of 5 between 100 and 500 start from 100 and go up to 500. These form an arithmetic sequence with:

- First term a=100, Common difference d=5 and Last term l=500.

Number of terms:

l = a+(n−1) × d, hence 500 = 100 + (n-1) × 5, hence n = 81

The sum of these terms is:

S=n/2×(a+l) = 81/2 x (100+500) = 24300. Hence, I is correct.

Statement II: Multiples of 7 between 100 and 500 start from 105 and go up to 497. These form an arithmetic sequence with:

- First term a = 105, Common difference d = 7 and Last term l = 497
- Hence, l = a+(n-1) × d, hence n = 57. Sum of these terms = n/2 × (a+l) = 57/2 × (105 + 497) = 17157.

Hence II is also correct.

79. (b)

Statement I: 2^{100} leaves a remainder of 2 when divided by 7, and 5^{100} also leaves a remainder of 2 when divided by 7. Hence, $2^{100}+5^{100}$ = 2+2 = 4 mod 7, which is not divisible by 7.

Statement II: The number of trailing zeros in 100! is calculated by counting how many times 5 is a factor in the numbers from 1 to 100, hence no of zeros = [100/5] + [100/25] = 24.

Hence II is correct

80. (b)

Statement I: No. of leap years = 8 and no. of normal years = 22. So odd days = 22 +16 = 38 Hence 38/7 =3. Hence required day = Saturday – 3 = Wednesday.

So, on 9th December, it will be Thursday. Hence, statement I is incorrect.

Statement II: The time difference between 9 a.m. and 3 p.m. is:

3p.m. − 9a.m. = 6 hours = 360 minutes.

The clock loses **4 seconds every 5 minutes**. Hence, total loss in seconds over 360 minutes: = 360/5 × 4 = 288 seconds = 4 minutes 48 seconds. So clock will show 2:55:12 p.m. at 3 p.m. on same day.

■■■■