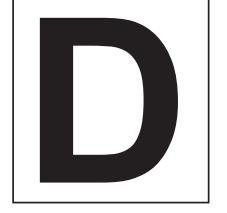


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Test Booklet Series



परीक्षण पुस्तिका अनुक्रम

# अनुप्रेषण-2024

## ALL INDIA OPEN MOCK TEST-3

### CSAT (Paper-II)

#### Answer Key

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

## EXPLANATIONS (CSAT : SET-D)

1. (a)

**Statement 1 is correct** as the passage mentions, "However, given the complexity of climate risk modelling, the biggest challenge for a bank would be to measure the impact of climate risk while undertaking lending and investment decisions and further integrate that risk into the existing risk and valuation frameworks." This signifies that existing risk assessment does not include the impact of climate risk. Also, "According to a recent Bloomberg survey for European banks, most banks reported that they could only confine themselves to a qualitative assessment of climate risks during the loan approval processes, which could at best be considered as subjective." This implies that if traditional approaches were sufficient to include climate risk, there would not have been the need of qualitative assessment, which is subjective in nature

**Statement 2 is incorrect** as, though the statement may be individually true, it is not implied in the passage. Mitigation-related regulatory policies include a carbon tax or cap on fossil fuel usage or banning of diesel cars. Such an argument is beyond the scope of the passage. The passage deals with the need to internalise climate risk in the current risk management framework and the challenges therein.

2. (d)

The passage deals with the need to internalise climate risk in the current risk management framework and the challenges therein. The passage does not define or give any implicit definition of climate risk. Further, there could be several dimensions to the definition of climate risk - as captured in options (a), (b) and (c).

However, they are beyond the scope of this passage. In the context of this passage, option (c) is the most appropriate answer.

3. (b)

**Option (a) is incorrect.** This option is beyond the scope of the passage because there is no discussion on the supply chain of agricultural produce. So, it is not the central idea.

**Option (b) is correct.** The lines "The benefits of automating traditional farming processes are monumental by tackling issues from consumer preferences, labour shortages, and the environmental footprint of farming", show that technology will help address the social (rising global population), economic (farm labour shortages) and environmental issues. So, this captures the essence of the passage.

**Option (c) is incorrect.** This statement, in general, would be correct but the passage does not mention India. So, to extrapolate the benefits of agricultural technology to India without any such clear indication in the passage would be incorrect.

**Option (d) is incorrect.** This statement seems to be correct as it would increase the input cost due to the application of technology. However, this consequence of increased cost due to technology is not covered in the passage. So, this is not the correct central idea.

4. (c)

Let the jaggery type is A, B and C

$$A : B : C = 1 : 1 : 2$$

Let the ratio volume =  $x$

So,  $A = x$ ,  $B = x$  and  $C = 2x$

$$A + B + C = x + x + 2x = 4x$$

As per question, since the rate of mixture = 90 Rs

$$\text{So, } 4x = 4 \times 90 = 360 \text{ Rs}$$

Value of  $A = 70$  Rs,  $B = 80$  Rs

$$C = 360 - (70 + 80) = 210$$

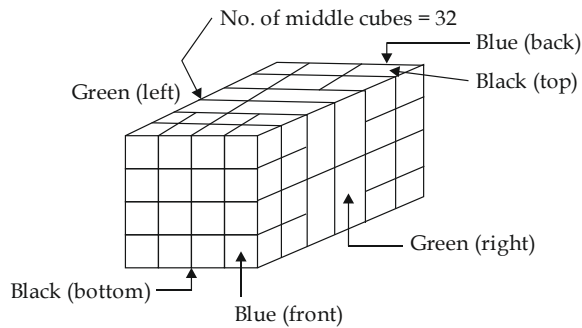
$$2x = 210 \Rightarrow x = 105$$

Thus, the rate of 3<sup>rd</sup> type of jaggery = 105 Rs

Hence, option (c) is correct.

5. (d)

No. of cubes having only two face painted =



6. (a)

Let the original average speed be  $x$  km/h

Then time taken to cover distance of

$$36 \text{ km} = \frac{36}{x} \text{ h}$$

When the average speed is reduced by 1 km/h.

The time required to cover the distance

$$\text{by the reduced average speed} = \frac{36}{x-1} \text{ h}$$

$$\text{Hence, } \frac{36}{x-1} - \frac{36}{x} = \frac{30}{60}$$

Solving this,  $x = 9$  km/h

Hence, option (a) is correct.

7. (d)

Middle number = (1st number - last number)  $\times$  (first number + last number)

$$= (15 - 12)(15 + 12)$$

$$= 3 \times 27 = 81$$

$$\text{Also, } (13 - 9)(13 + 9) = 4 \times 22 = 88$$

$$\text{Hence, } (19 - 11)(19 + 11)$$

$$= 8 \times 30 = 240$$

8. (c)

Triangular pattern series.

$$3 \quad 10 \quad 29 \quad 66 \quad 127$$

$$7 \quad 19 \quad 37 \quad 61$$

$$12 \quad 18 \quad 24$$

$$6 \quad 6$$

$$\text{So, missing term} = 127 + 61 + 24 + 6$$

$$= 127 + 91 = 218$$

Hence, option (c) is correct.

9. (c)

% decrease in surface area

$$= \left[ 2 \times (-20) + \frac{(-20) \times (-20)}{100} \right] x$$

$$= (-40 + 4)\% = -36\%$$

$$= 36\% \text{ decrease}$$

10. (c)

Karan rank  $\rightarrow 30^{\text{th}}$  from top.

Karan rank  $\rightarrow 51^{\text{st}}$  from bottom.

then no. of students who passed the exam =  $29 + 1 + 50 = 80$

Let total number of students be  $x$ .

$$\text{then } \frac{8x}{11} = 80$$

$$\Rightarrow x = 110$$

11. (d)

**Statement 1 is incorrect.** We have to restrict the context based on the information in the passage. The lines "In other words, people in different social groups may endorse the same values but associate different behaviours with them. For example, the value of equality may be linked to comparisons between men and women in countries where gender equality is promoted, but not in countries where gender equality is not part of the political agenda", show that the value of equality is society dependent and not universal. Whereas, this answer option talks just the opposite - gender equality should be universal and independent of societies. Thus, it is an incorrect assumption.

**Statement 2 is incorrect.** The passage mentions "People may perceive differences between social groups because of the differences between groups in the specific behaviours that are seen as exemplars of different values, even if other behaviours that are exemplars of the values do not differ". This shows that behaviour is influenced by values and not vice versa (as this is not mentioned in the passage). So, this assumption is not correct.

12. (c)

**Statement 1 is correct.** The passage mentions, "People may perceive differences between social groups because of the differences between groups in the specific behaviours that are seen as exemplars of different values, even if other behaviours that are exemplars of the values do not differ". The part "specific behaviours that are seen as exemplars of different values" is of special importance here. It clearly means that a specific type of behaviour is an example of a certain type of value. Therefore, this statement is correct.

**Statement 2 is correct.** The passage mentions, "In other words, people in different social groups may endorse the same values but associate different behaviours with them". So, different behaviours may stem out of the same set of group values.

13. (a)

**Statement 1 is correct.** Refer to the line, "In other words, people in different social groups may endorse the same values but associate different behaviours with them." It is likely that people of different groups support a common value system. At the same time, it is possible that with the same value system people from different groups showcase different behaviours. In such cases, group behaviour may not help in understanding their values.

**Statement 2 is incorrect.** The passage mentions specific behaviour in the lines "People may perceive differences between social groups because of the differences between groups in the specific behaviours that are seen as exemplars of different values, even if other behaviours that are exemplars of the values do not differ. Thus, by thinking about groups in terms of concrete instances, differences may be stronger than similarities". From this it is clear that the relationship between group values and behaviour is not simple and linear to say the least. So, this statement is an incorrect inference.

14. (a)

**From statement 1:**  $x^3 + y^3 + 3x^2y + 3xy^2 < x^3 - y^3 - 3x^2y + 3xy^2$

$$\Rightarrow 2y^3 + 6x^2y < 0$$

$$\Rightarrow 2y(y^2 + 3x^2) < 0$$

$$\Rightarrow y < 0$$

but no information about  $x$  is given,  $x$  can be +ve or -ve both.

Hence, whether  $xy$  is +ve or not cannot be determined.

**From statement 2:**

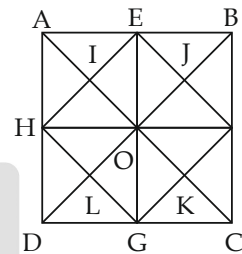
$$x^2 + y^2 + 2xy < x^2 + y^2 - 2xy$$

$$4xy < 0$$

$$\Rightarrow xy < 0$$

Hence, statement 2 alone can answer the question.

15. (b)



**Squares:-**

**2 components:** total 4

LOIH, OJEL, OKFJ, OLGK

**4 components =** total 4

HOEA, OFBE, CGFO, DGOH

**8 components:** total 1

EFGH

**16 components:** total 1

ABCD

Total no. of squares =  $4 + 4 + 1 + 1$

= 10.

**Triangles:-**

**Simplest triangles:** total 16

AEI, EOI, OHI, HAI, EBJ, BFJ, FOJ, OEJ, HOL, OGL, GOL, DHL, OFK, FCK, CGK, GOK

**Triangles with 2 components:** total 16

EAH, OEA, HOE, AHO, BEO, FBE, OFB, EOF, OHD, GOH, DGO, HDG, FOG, CFO, GCF, CGO.

**Triangles with 4 components:** Total B.

FEH, EFG, HGF, GHE, ABO, OCB, CDO, DAD

**Triangles with 8 components:** total 4.

DAB, ABC, BCD, ADC

Total no. of triangles =  $16 + 16 + 8 + 4$   
= 44

16. (b)

Let Ram alone completes the work in  $x$  days and Shyam alone completes the work in  $y$  days.

$$\text{Then, } \frac{1}{x} + \frac{1}{y} = \frac{1}{6} \quad \dots(i)$$

$$\text{and } \frac{2}{x} + \frac{1}{4y} = \frac{1}{4} \quad \dots(ii)$$

$\therefore$  More efficient means less time required to complete the work and vice-versa.

Solving equation (i) and (ii),

$$x = \frac{42}{5} = 8\frac{2}{5} \text{ days}$$

17. (b)

Let  $x$  = no. of students in the class

$$\text{then, } \frac{20x + 8 \times 16}{x + 8} = 20 - \frac{20 \times 10}{100}$$

$$\frac{20x + 128}{x + 8} = 18$$

$$\Rightarrow 20x - 18x = 144 - 128$$

$$\Rightarrow 2x = 16$$

$$\Rightarrow x = 8$$

18. (b)

Remaining days in 2011 =  $365 - 12 = 353$ .

2012 is a leap year.

Hence, no. of days in January 2012 = 31

No. of days in February 2012 = 29

No. of days in March 2012 = 31

No. of days from 1<sup>st</sup> April to 19<sup>th</sup> April, 2012

Total no. of days =  $353 + 31 + 29 + 31 + 19 = 463$

$$\text{Hence, } \begin{array}{r} 66 \\ 7 \overline{)463} \\ \underline{42} \\ 43 \\ \underline{42} \\ 1 \end{array}$$

$$\Rightarrow 463 = 7 \times 66 + 1$$

$$= 66 \text{ weeks} + 1 \text{ odd day}$$

Hence, day on 19<sup>th</sup> April 2012

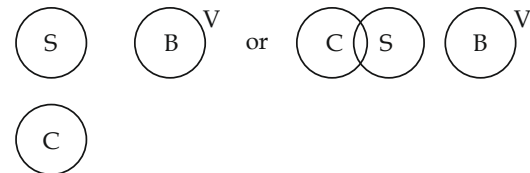
$$= \text{Wednesday} + 1 = \text{Thursday}$$

19. (c)

ACDB | DACB | CDAB | ACDB | DA

3<sup>rd</sup> letter of every group becomes the first letter in the following sequence.

20. (b)



Hence conclusion-III is wrong.

21. (c)

**Statement 1 is correct.** Refer to the lines "Three factors that largely determine the efficacy of any system of governance are the quality of leadership, the characteristics of the governed, and the nature of the structures and processes employed to exercise authority and meet human needs". The characteristics of the governed is reflecting the citizens of the country. Thus, the given assumption in the statement is correct because governance depends on three factors: the quality of leadership, the characteristics of the governed, and the nature of the structures and processes employed to exercise authority and meet human needs. So, citizens are also responsible for efficient outcomes of governance.

**Statement 2 is correct.** The passage mentions, "The capacity of any institution to effect and manage change, and to respond creatively to challenges that lie before it, increases the development of several critical skills. These include the ability to maintain a clear perception of social reality and the forces operating in it; to properly assess the resources of the community; and to implement decisions with an openness and flexibility that avoid all traces of dictatorial behaviour, among others". So, the capacity of the institution increases if the implementation of decisions is done with openness and flexibility.

Therefore, it would be correct to say that capacity will reduce if the implementation is done in a rigid and closed manner. So, this is the correct assumption.

22. (a)

**Assumption 1 is correct.** The passage mentions, "Despite abundant low-skilled labour, our growth trajectory has mostly skipped manufacturing." It clearly implies that availability of low-skilled labours would encourage the growth of manufacturing sector.

**Assumption 2 is correct.** The passage mentions, "Growing instead on the back of a far smaller, high- skilled services sector." It implies that the service sector is thriving on a small workforce.

**Assumption 3 is incorrect.** The passage mentions, "Growing instead on the back of a far smaller, high- skilled services sector. Consequently, the bulk of jobs our economy generated even in its peak growth years was in the largely informal, low value add construction sector." It implies that the economy post-1991 is growing on the back of the service sector. But the passage does not mention the peak growth years, so we cannot assume whether it was the period from 2005-2012 or not.

23. (b)

**Statement 1 is incorrect.** The given option is not correct because the statement is extreme.

**Statement 2 is correct.** The passage mentions "Thus, education is not merely learning of facts but is to train our mind to think. Education systems must provide opportunities to every individual to learn through experience and should help to develop critical thinking and problem-solving skills" and "Instead of focusing on critical thinking, expressing new ideas and debating and writing critically on any issue, our students are forced to learn through the rote route". These lines show that to develop critical thinking (outcome of education) one should resort to experienced-based learning and reduce rote learning.

24. (b)

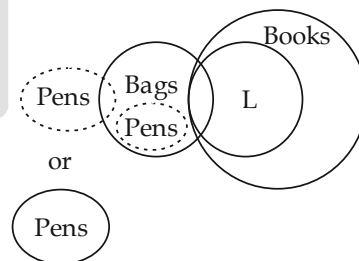
**Souvenir:** a thing that is kept as a reminder of a person, place, or event.

**Statement 1 is incorrect.** The passage does not limit its scope to a section of people suffering from memory loss.

**Statement 2 is incorrect** as the passage nowhere says that these souvenirs serve no purpose. The passage in the last sentence just says that they "have been OCCUPYING THE SPACE for years". Also, the tone of this passage is not against the practice of keeping such things. Author quotes potential advantages of such souvenirs like their role in helping us use the past to fuel our present and future.

**Statement 3 is correct.** The passage in the 1<sup>st</sup> sentence says that "it all depends on your relationship to memory." and "to how much you feel the need to live in the past". Hence, it is likely that people desirous of reliving their pasts keep such things.

25. (a)



Hence, conclusion-III always follows and conclusion-I.

26. (b)

Let I be the set of Indian people,  $F \rightarrow$  Set of Foreigners.

$W \rightarrow$  Women,  $M \rightarrow$  Men,  $E \rightarrow$  Engineers.

then  $I = W \cup M$

$$n(I) = n(W \cup M)$$

$$= n(W) + n(M) - n(W \cap M)$$

$$n(I) = 50 + 40 - 0$$

Since man cannot be a woman.

$$\text{Foreigners} = \text{Total} - \text{Indians}$$

$$= 200 - 90 = 110$$



$$\text{Also, } n(M \cup E) = 42$$

$$\Rightarrow n(E) + n(M) - n(M \cap E) = 42$$

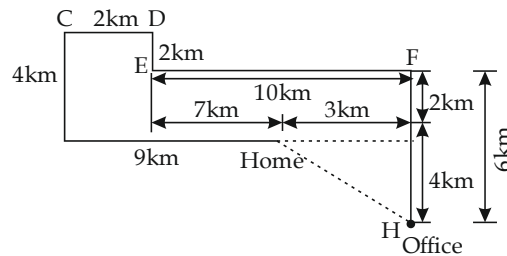
$$\Rightarrow 8 + 40 - n(M \cap E) = 42$$

$$\Rightarrow n(M \cap E) = 6$$

Hence, among the set of men, There are 6 Engineers.

Hence, out of total 8 Engineers, 2 Women Engineers are there.

27. (d)



Shortest distance between Office and Home = AH.

$$AH^2 = AG^2 + GH^2$$

$$AH^2 = 3^2 + 4^2$$

$$\Rightarrow AH = 5 \text{ km.}$$

And office is in South-East direction with respect to home.

28. (b)

Let Gautam's capital be Rs. 100

Then Virat's capital = Rs. 250

then,

$$100 \left( 1 + \frac{50}{100} \right)^3 = \left[ 250 + \frac{250 \times R \times 3}{100} \right]$$

$$\Rightarrow R = 11.66\%$$

29. (c)

Distance travelled by wheel P in 1 revolution =  $2\pi r = 2\pi \times 30 = 60\pi$

Distance travelled by wheel Q in 1 revolution =  $2\pi \times 40 = 80\pi$

For the same distance P requires 5000 revolutions,

Let the revolution taken by Q = n

then revolution taken by P = (n + 5000)

$$80\pi \times n = 60\pi(n + 5000)$$

$$\Rightarrow 80\pi n = 60\pi n + 60\pi \times 5000$$

$$\Rightarrow 20\pi n = 60\pi \times 5000$$

$$n = 15000$$

So distance travelled by B

$$= 15000 \times 80\pi$$

$$= 1200000\pi \text{ cm}$$

$$= 1200\pi \text{ km}$$

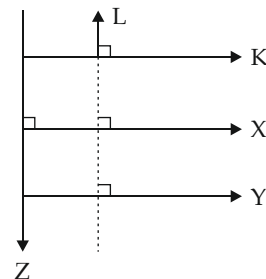
$$\text{Speed} = \frac{\text{Distance}}{\text{Time}} = \frac{12\pi}{3/4}$$

$$= \frac{12\pi \times 4}{3}$$

$$= 16\pi \text{ km/h}$$

30. (c)

Considering the question,



Hence, bed X, K and Y all are perpendicular to bed Z.

31. (a)

**Assumption (1) is correct.** The passage mentions, "Freebies" distributed to the public as work given under NREGA. So, this assumption is correct.

**Assumption (2) is correct.** The passage suggests that Freebies are a burden on stressed fiscal resources.

**Assumption (3) is not correct.** The passage does not mention what happens in the case of adequate resources.

32. (b)

**Assumption 1 is invalid.** The given assumption is incorrect because the following line "Violations of the right to education may occur through the direct action of States parties (the act of commission) or through their failure to take steps required by law (the act of omission)", illustrates that violations can happen through an act of omission as well, which means that even after integrating the

right in national laws there is no surety that violations will not happen. So, to assume that integration will end violations is not correct.

**Assumption 2 is valid.** As per the passage, "Violations of the right to education may occur through the direct action of States parties (the act of commission) or through their failure to take steps required by law (the act of omission)", the state through an act of commission or omission can violate the right to education. So, this assumption is correct.

33. (c)

**Statement 1 is correct.** The passage mentions "In recent years, the significant rise of private cryptocurrencies such as Bitcoin and Ether has spooked central banks throughout the world and pushed the case for official digital currencies." Central banks across the world are considering the case of official digital currencies. So, it is correct to assume that the Indian central bank also needs to launch its official digital currency. Moreover, the word "spooked" carries a negative connotation.

**Statement 2 is correct.** The passage mentions, "A 2021 BIS survey of central banks, which found that 86% were actively researching the potential for such currencies, 60% were experimenting with the technology, and 14% were deploying pilot projects." The very fact that 60% of the central banks across the world are already experimenting with the technology of cryptocurrency clearly indicates that the technology behind the cryptocurrency is no longer monopolised by private entities. It is now accessible to government bodies like central banks also. Thus, it is a correct assumption.

**Statement 3 is incorrect.** This option is beyond the scope of the passage because the passage nowhere discusses the need for India to compete against China in the digital currency sector. So, this is not the correct inference.

34. (d)

As per statement,

I. Square area =  $64 \text{ cm}^2 = a^2$

Side = 8 cm

Perimeter =  $4 \times \text{side} = 4 \times 8 = 32 \text{ cm}$

II. Side of equilateral triangle = 8 cm

Perimeter =  $8 \times 3 = 24 \text{ cm}$

III. Perimeter of rectangle =  $2(l + b)$

Area =  $l \times b = 60 \text{ cm}^2$

$\Rightarrow 15 \times b = 60 \text{ cm}^2 \Rightarrow b = 4 \text{ cm}$

Perimeter =  $2(15 + 4) = 2 \times 19 = 38 \text{ cm}$

IV. Radius of circle = 7 cm

Perimeter =  $2\pi r = 2 \times \frac{22}{7} \times 7 = 44 \text{ cm}$

Hence, (d) is correct.

35. (c)

$(x^n - a^n)$  is divisible by  $(x - a)$  &  $(x + a)$  when  $n$  is even

hence  $(128)^{90} - (54)^{90}$  is divisible by  $(128 - 54)$  &  $(128 + 54)$

i.e., by 74 & 182

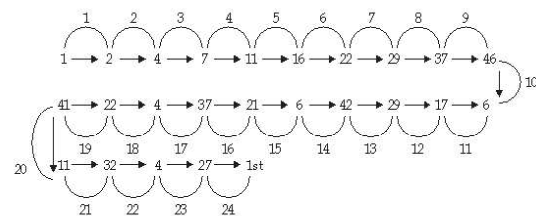
i.e., by  $2 \times 37$  &  $2 \times 91$

i.e., by 37 & 91.

Hence, option (c) is correct.

36. (b)

The bag shifts between  $m$  students No. 1 and 50 as following manner:



So after 24<sup>th</sup> shift in the no. of students the bag will be in the hand of the 1<sup>st</sup> student.

Hence (b) is correct.

37. (a)

**Statement 1:**

Hence, Question can be answered using 1 alone

P Physics

Q Chemistry

R Hindi

S Science

T Geography

**Statement 2:**

Question cannot be answered using statement 2 alone.

P Chemistry

Q

R Mathematics

S

T Hindi



38. (c)

**Statement 1:**

Between 6:58 pm and 6:59 pm the minute-hand and second-hand will differently coincide.

**Statement 2:**

Between 5:25 pm and 5:30 pm, both hour coincide.

At 5pm, the minute hand is 26 minutes space apart from hour hand. To be coincident, it must/gain 25 minutes spaces.

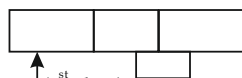
We know that 55 minutes are gained in 60 minutes.

$$\text{So, 25 minutes are gained in} = \left( \frac{60}{55} \times 25 \right)$$

$$= \frac{30}{11} = 27 \frac{3}{11} \text{ min.}$$

39. (d)

Any 3-digit number between 300 and 900 cannot start with 0 or 2. then,



this place can be occupied by any of 3, 4, 5, 6, 7, 8

so, no. of ways in which hundredth place can be filled = 6 ... (A)

then remaining two places can be filled by remaining 7 digits since, out of total 8 digits, remaining two places can be filled by 7 digit since 1 digit will occupy the 1<sup>st</sup> place.

Hence, no. of ways to fill remaining two places =  ${}^7P_2$  ... (B)

So, required numbers =  $A \times B = 6 \times {}^7P_2$

$$= 6 \times \frac{7!}{5!} = 6 \times 7 \times 6 = 252$$

Hence, option (d) is correct.

40. (d)

Using Statement I:

$$\frac{A}{B} = \frac{2}{3}$$

Using Statement II:

A is 40% of total, so B is 60% of total amount invested,

$$\text{Hence, } \frac{A}{B} = \frac{40}{60} = \frac{2}{3}$$

Using statement III:

$$A = 45,000.$$

Putting the value of statement III in any of the I or II, we can find the amount invested in scheme B.

41. (a)

**Option (a) is correct.** The passage mentions, "striking a deal to remunerate its women cricketers the same as their male counterparts is a major landmark in the fight to close the gender pay gap in sports." "But it would be prudent to focus on the factors that are holding women back - unequal opportunities, curtailed playing time and lack of investment. Historically, men taking to sport and following sport have been organic exercises, largely because of social conditioning." It implies achieving gender pay parity is an important step towards gender equality. But the social conditioning is still holding them back. So, this option is correct.

**Option (b) is incorrect.** The statement only talks about improving the social condition of women. It does not bring about the issue of the gender pay gap. So, this option does not best capture the essence of the passage in its entirety. Therefore, this option is incorrect.

**Option (c) is incorrect.** The statement only recognizes the change brought about by a reduced gender pay gap. It does not incorporate social conditioning facets of women. So, this statement is incorrect.

**Option (d) is incorrect.** This statement only talks about pay parity. The passage is more holistic in nature when it comes to gender-gap issue.

42. (a)

**Assumption (1) is correct.** The passage mentions, "In cricket, any move to narrow the monetary gap between men and women, especially in India, is dithered over by citing lower market ratings for the ladies' game. But it

would be prudent to focus on the factors that are holding women back - unequal opportunities, curtailed playing time and lack of investment. **Historically, men taking to sport and following sport have been organic exercises, largely because of social conditioning.** It implies, through social conditioning, women have been strained to internalize that sporting participation is not that significant an activity for them. So, this assumption is correct.

**Assumption (2) is incorrect.** The passage mentions, *"It's great to be recognized in the same agreement, alongside the men."* It highlights the importance of placing men and women at the same pedestal. As "trivial" signifies something of little value, this assumption is incorrect.

43. (b)

**Assumption 1 is incorrect.** The passage nowhere discusses how to change into a knowledge based society. Hence, this assumption is not correct.

**Assumption 2 is correct.** The lines *"It is suggested that the digital divide may cause technological, social, and educational types of inequality"* and *"Digital media usage is a strong predictor of political participation which implies that a digital divide may result in political alienation of those who lack digital media access"* suggest that since digital divide causes technological inequality and results in political alienation, therefore, bridging it (the digital divide) will lead to technological and political empowerment.

44. (b)

We have to choose six digits out of digits 1, 2 & 3 whose sum is 9. It can be done in following ways:

1<sup>st</sup> : | 2 2 2 1 | → Sum is 9 → No. of different

$$\text{integers formed} = \frac{|6|}{|3|3|} = 20$$

2<sup>nd</sup> : | 3 2 1 1 1 1 | → Sum is 9 → No. of

$$\text{different integers formed} = \frac{|6|}{|4|} = 30$$

Hence, total number of digits = 20 + 30 = 50

45. (d)

Total 10 persons.

1	2	3	4	5	6	7	8	9	10
↓	↓							↓	↓
S	S							S	S

Seat no. 1, 2, 9, 10 are to be occupied by sons  
 $\Rightarrow 4! = 24$  ways

Now grandmother cannot occupy seat no. 3 or seat no. 8 because she does not want to have a Son by her side. Hence, she can choose any of 4, 5, 6, 7 no. seat i.e. she can sit in 4 ways.

Now, total 5 seats are left on which 5 adults can be arranged in  ${}^5P_5 = 5! = 120$  ways.

Hence, total no. of seating arrangements  
 $= 24 \times 4 \times 120 = 11520$

46. (d)

Efficiency of work of person in a day  
 $= 60/4 = 15\text{m}$

Efficiency of work of person in a day  
 $= 15/6 = 2.5\text{m}$

The final/actual depth at the end of day 1  
 $= 15\text{m} - 3\text{m} = 12\text{m}$

Thus it takes 5 days in digging the depth of 60m, Hence conclusion I is correct.

Now the depth at the end of 2<sup>nd</sup> day  
 $= 12\text{m} + 15\text{m} = 27\text{m}$

and filled by mud  $= 27/5 = 5.4\text{m}$

Thus actual depth at the end of day 2  
 $= 27 - 5.40 = 21.6\text{m}$

Hence, conclusion I and II are incorrect.

47. (c)

Number is divisible by 3 if sum of its digits is divisible by 3.

Hence,  $8 + 7 + 6 + x + 1 + y + 2 = 3p$

or  $24 + (x + y) = 3p$

Hence,  $x + y$  is also a multiple of 3.

Given that, all 7 digits have to be distinct.

Hence,  $x$  &  $y$  must be chosen from 0, 3, 4, 5, 9 such that  $(x + y)$  is a multiple of 3.

Hence possible set of values of  $x, y$ .

$x$	$y$
0	3
0	9
3	9
9	3
4	5
5	4
9	0
3	0

Hence possible (x, y) pairs are (0, 3), (0, 9), (3, 9), (4, 5), (5, 4), (9, 0), (3, 0)

Hence, 7 pairs.

48. (b)

ALPHABET contain three vowels A, A, E (A is at two places)

Hence, arranging the vowels together  
A, A, E LPHBT

Consider the bundle of vowels as one letter, then total letters = 6

Number of ways of arranging these letters =  $6! = 72$

Further 'AAE' can be arranged in 3 ways  
i.e. AAE, AEA, EAA

$$\frac{3!}{2!} = \frac{3! \times 2!}{2!} = 3$$

Hence, maximum number of arrangements =  $720 \times 3 = 2160$

49. (a)

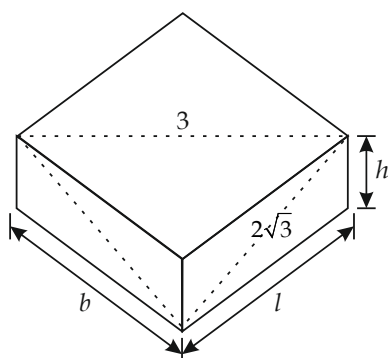
$$(1) \quad 3 \text{ non-official \& 3 official} \rightarrow {}^5C_3 \times {}^{10}C_3 \\ = 10 \times 120 = 1200$$

$$(2) \quad 4 \text{ non-official \& 2 official} \rightarrow {}^5C_4 \times {}^{10}C_2 \\ = 5 \times 45 = 225$$

$$(3) \quad 5 \text{ non-official \& 1 official} \rightarrow {}^5C_5 \times {}^{10}C_1 \\ = 1 \times 10 = 10$$

Hence, total =  $1200 + 225 + 10 = 1435$

50. (c)



Let the edges of brick be  $l$ ,  $b$  and  $h$  such that  $(l^2 + b^2)^{1/2}$ ;  $(l^2 + h^2)^{1/2}$  and  $(h^2 + b^2)^{1/2}$

Thus, the diagonal be  $(l^2 + b^2)^{1/2}$ ;  $(l^2 + h^2)^{1/2}$ ;  $(h^2 + b^2)^{1/2}$

$$(3)^2 : (2\sqrt{3})^2 : (h)^2 = 9 : 12 : 9$$

We can write as;

$$(3 + 6) : (9 + 3) : (3 + 6)$$

By comparing we can say that;

$$l^2 = 3$$

$$h^2 = 6$$

$$b^2 = 6$$

$$\therefore \text{Shortest edge} = \sqrt{3}$$

$$\therefore \text{Longest edge} = \sqrt{6}$$

$$\therefore \sqrt{3} : \sqrt{6} \Rightarrow 1 : \sqrt{2}$$

51. (b)

**Assumption 1 is invalid.** The given statement is extreme. As per the lines "This approach includes educating people about dietary changes and helping them achieve optimum levels of nutrition. An important part of this is educating children at schools and people in shared spaces such as workplaces. The main aim of this approach is preventive", community nutrition is preventive but to assume that it is not possible to overcome malnutrition by obesity would not be correct because there is no such relation being discussed in the passage.

**Assumption 2 is invalid.** The lines "We currently have no significant programmes that target malnutrition affected by obesity", merely show that there are no significant programmes to tackle malnutrition by obesity, but to assume that the absence of programmes is the primary cause of malnutrition would not be correct. Also, the primary cause of malnutrition is not discussed in the passage. So, this assumption is not correct.

**Assumption 3 is valid.** The given statement is about replacing packaged and high-salt food with water-rich live foods because the

lines "With the rise of packaged food, food with high salt and sugar content in food obesity-related malnutrition is on the rise. India is now facing a double whammy of malnutrition, with the younger population being affected by undernutrition and the older population affected by malnutrition related to obesity", show that packaged or high-salt foods are the cause of malnutrition. Therefore, consuming fresh and nutrition rich food will help fight malnutrition.

52. (b)

**Option (a) is incorrect.** The given option states that community nutrition is the best approach. However, such a conclusion can only be made when two approaches are compared which is not done in the passage. So, to conclude that the community nutrition approach is the best would not be correct.

**Option (b) is correct.** The passage is mainly based on the theme of the use of a community nutrition approach to fight malnutrition by obesity. The lines "We currently have no significant programmes that target malnutrition affected by obesity. As a country, we could take the community nutrition approach where nutrition is improved at the community level", show that India needs to focus on handling malnutrition by obesity and the community nutrition approach is a promising way to do it.

**Option (c) is incorrect.** The option talks about a change of government approach in fighting malnutrition by obesity. However, the main theme of the passage is not about issues with government programmes but the use of a community nutrition approach in fighting malnutrition by obesity. So, this option is not the best message of the author.

**Option (d) is incorrect.** The given option is beyond the scope of the passage because there is no mention of companies producing packaged foods, and also what needs to be done on their behalf. There is no discussion about the regulation of such companies. So, this is not the best message of the author.

53. (c)

**Statement 1 is correct.** The passage mentions, "But technology and its addiction among children are a hindrance in attaining high EQ level and this leads to many of them not being able to manage their emotions well". This line confirms statement 1, that technology acts as a hindrance to the development of EQ in children.

**Statement 2 is correct.** The passage mentions, "Relating to others and relationship management is an important element that nurtures a high EQ in an individual. But technology and its addiction among children are a hindrance in attaining high EQ level and this leads to many of them not being able to manage their emotions well". This line also is in line with the given option statement that human relations have a positive effect on EQ as compared to technology. So, this is the correct assumption.

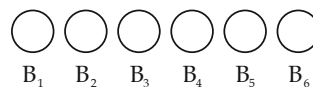
54. (d)

Data is insufficient, since two unknowns and only one information is present. Information present in the 2<sup>nd</sup> statement is not exact as it was 'more than'.

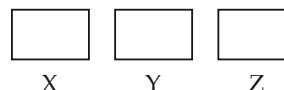
55. (d)

Six balls of different colours .....

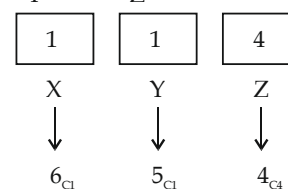
**Six balls**



**Three Box**



**Case 1:**



$$= {}^6C_1 \times {}^5C_1 \times {}^4C_1$$

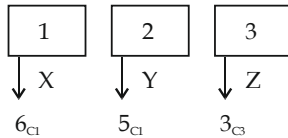
$$= 5 \times 5 \times 1 = 30$$

Now these can further be arranged in  $\frac{3!}{2!} = 3$  way

Hence, total number of ways for case 1

$$= 30 \times 3 = 90$$

Case 2:



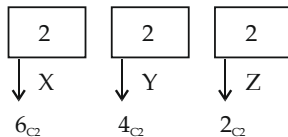
$$= 6 \times 10 \times 1 = 60$$

Now these can further be arranged in  $\underline{3}$  ways.

Hence, total number of ways for case 2

$$= 60 \times 6 = 360 \text{ ways.}$$

Case3:



$$= 15 \times 6 \times 1 = 90$$

This case can be represented by only 1 way since all are same.

Hence, total number of ways =  $90 + 360 + 90$

$$= 540$$

56. (a)

Find the remainder where the individual term is divided by 5 i.e.

$$\text{Rem} \left[ \frac{7^1}{5} \right] \rightarrow 2$$

$$\text{Rem} \left[ \frac{7^2}{5} \right] = \text{Rem} \left[ \frac{49}{5} \right] \rightarrow 4$$

Similarly, find the remainder for all terms

$$\text{Rem} \left[ \frac{7^3}{5} \right] = \text{Rem} \left[ \frac{7 \times 7 \times 7}{5} \right] = 2 \times 2 \times 2 = 8$$

(when 8 is divided by 5 the remainder will be 3)

Hence,

$$\text{Rem} \left[ \frac{7^1}{5} \right] \rightarrow 2 \quad \text{Rem} \left[ \frac{7^2}{5} \right] \rightarrow 4 \quad \text{Rem} \left[ \frac{7^3}{5} \right] \rightarrow 3$$

$$\text{Rem} \left[ \frac{7^4}{5} \right] \rightarrow 1 \quad \text{Rem} \left[ \frac{7^5}{5} \right] \rightarrow 2 \quad \text{Rem} \left[ \frac{7^6}{5} \right] \rightarrow 4$$

$$\text{Rem} \left[ \frac{7^7}{5} \right] \rightarrow 3 \quad \text{Rem} \left[ \frac{7^8}{5} \right] \rightarrow 1 \quad \text{Rem} \left[ \frac{7^9}{5} \right] \rightarrow 2$$

$$\text{Rem} \left[ \frac{7^{10}}{5} \right] \rightarrow 4$$

By adding all the remainders, we get

$$2 + 4 + 3 + 1 + 2 + 4 + 3 + 1 + 2 + 4 = 26$$

Divide final remainder by 5 i.e.  $26/5$  we get remainder 1.

57. (d)

Number of 4-digit numbers which are

$$\text{formed with } 1, 2, 3, 4, 5, \& 6 = {}^6P_4 = \frac{6!}{6-4}$$

$$= \frac{6!}{2} = 6 \times 5 \times 4 \times 3 = 360$$

Number of 4-digit numbers which are formed with 1, 2, 3, 4, 5 & 6 and divisible by

$$5 = {}^5P_3 = \frac{5!}{2} = 5 \times 4 \times 3 = 60$$

$$\text{Hence probability} = \frac{60}{360} = \frac{1}{6}$$

58. (c)

**Statement-I:**

$$(S(n)) = n^3 + (n+1)^3 + (n+2)^3 + \dots$$

Let us take any 3 consecutive numbers

For example, 5, 6, 7

$$S = 5^3 + 6^3 + 7^3 = 125 + 216 + 343 = 684$$

$$\text{Sum of these numbers} = 5 + 6 + 7 = 18$$

$$\text{Hence, } \frac{684}{18} \Big|_{\text{Rem}=0}$$

Take any 4 consecutive numbers

$$S = 6^3 + 7^3 + 8^3 + 9^3$$

$$S = 216 + 343 + 512 + 729 = 1800$$

$$\text{Sum of these numbers} = 6 + 7 + 8 + 9 = 30$$

$$\text{Hence } \frac{1800}{30} \Big|_{\text{Rem}=0}$$

Hence, true.

**Statement II:**

Let three consecutive even numbers

$$n, (n+2), (n+4)$$

Multiplication or product of these numbers

$$= n(n+2)(n+4) = n(n^2 + 6n + 8)$$

Take  $n = 2 \rightarrow \text{product} = 48 \rightarrow \text{divisible by } 48$

Take  $n = 4 \rightarrow \text{product} = 384 \rightarrow \text{divisible by } 48$

Hence, statement 2 is true.



59. (b)

**Term 1<sup>st</sup>:**

Unit digit of  $4^{87} = 4$

Cyclicity of 4 = 4, 6

**Term 2<sup>nd</sup>:**

Unit digit of  $3^{56} = (3^4)^{14} = 1$

Cyclicity of 3 = 3, 9, 7, 1

**Term 3<sup>rd</sup>:**

$7^{43} = (7^4)^{10} \cdot 7^3 = 3$

Cyclicity of 7 = 7, 9, 3, 1

**Term 4<sup>th</sup>:**

$2^{23} = (2^4)^5 \cdot 2^3 = 8$

Cyclicity of 2 = 2, 4, 8, 6

**Term 5<sup>th</sup>:**

$9^{35} = 1$

Cyclicity of 9 = 9, 1

Hence, Product of unit digit of each term

$= 4 \times 1 \times 3 \times 8 \times 9 = 4$  (Unit of final product of all individual unit digits of each term)

60. (c)

AD4

$\times E$

A206

At unit digit

$4 \times E = \text{either } 16 \text{ or } 36$

M 16,  $E = 4$  but

$D \times E \neq 9 \text{ or } 17$  to fulfill the term of unit digit of 0.

if  $E = 4$ ,

$A + D + E = 13$

Hence, of  $A = 3$

$D = 6 \Rightarrow 3 + 6 + 4 = 13$

Hence, Statement II is true.

61. (b)

**Inference 1 is incorrect.** The given statement is partially correct. The assertion about being dangerous to the environment is correct. However, to say that it has some potential benefits is not correct because it is not based on any information in the passage. So, on whole, the inference is not correct.

**Inference 2 is correct.** The lines “/nvasive mammalian predators are therefore important

drivers of irreversible loss of phylogenetic diversity worldwide. That **most impacted species are insular indicates that management of invasive predators on islands should be a global conservation priority**”, illustrating that the island being an insular habitat contains species which are most impacted by invasive predators.

Therefore, island species are most vulnerable and need conservation on a priority basis.

62. (d)

**Option (a) is incorrect.** The given option is beyond the scope of the passage because there is no relation drawn between the survival of the human race and the conservation of biodiversity which is being discussed in the passage.

**Option (b) is incorrect.** The given option is not correct because there is no discussion about the funding of islands for conserving biodiversity there or fighting invasive species. So, this option is beyond the scope of the passage.

**Option (c) is incorrect.** This given statement is not based on the information in the passage. Also, it is extreme because to conclude that invasive species can grow anywhere would not be correct without any supporting information. Therefore, this option is beyond the scope of the passage.

**Option (d) is correct.** The lines “*Invasive predators are implicated in 87 bird, 45 mammals, and 10 reptile species extinctions - 58% of these groups' contemporary extinctions worldwide. These figures are likely underestimated because 23 critically endangered species that were assessed are classed as “possibly extinct”, show that invasive predators are the cause of extinction for many species. Extinction of any species from the ecosystem alters its species diversity. Therefore, the given assertion in the statement is correct and it is the best crux of the passage.*

63. (c)

**Statement 1 is correct.** The lines “*Crop pollination is commonly cited as an example of an endangered ecosystem service as detailed*



studies of the crop pollination systems are incomplete or out of date', show that due to incomplete or out of date studies of crop pollination systems this ecosystem service is endangered. Therefore, the inference given in the statement is correct.

**Statement 2 is correct.** The passage mentions "Animal pollination is important to the sexual reproduction of many crops and the majority of wild plants, which can also be important for providing calories and micronutrients for humans. Furthermore, the decline of pollinating species can lead to a parallel decline of plant species'. These lines show that pollination of plants has a direct bearing on human nutrition in terms of the calories and micronutrients available for human beings. If the pollinator species decline, it will also lead to a reduction in the number of plant species, which in turn provide nutrition to humans. Hence, this inference is correct.

64. (c)

If number 1 comes in first dice, then the chance for higher number on another dice is 5 (2, 3, 4, 5 and 6)

If number 2 comes in first dice, then the chance for higher number on another dice is 4 (3, 4, 5 and 6)

If number 3 comes in first dice, then the chance for higher number on another dice is 3 (4, 5 and 6)

If number 4 comes in first dice, then the chance for higher number on another dice is 2 (5 and 6)

If number 5 comes in the first dice, then the chance for higher number on another dice is 1 (Only 6)

Hence, we get total number of required event i.e.  $n(E) = 5 + 4 + 3 + 2 + 1$

and total event to be happened for rolling the dice twice i.e. sample space =  $6 \times 6 = 36$

Hence, the probability i.e.

$P(E) = n(E)/\text{Sample space}$

$$= \frac{5 + 4 + 3 + 2 + 1}{36} = \frac{5}{12}$$

65. (d)

$$5^3 + 4^2 - 1 = 140$$

$$8^3 + 7^2 - 1 = 560$$

$$\text{Hence, } 6^3 + 5^2 - 1 = 240$$

66. (d)

$$26x + 91y = 13(2x + 7y)$$

For  $13(2x + 7y)$  to be divisible by 130

$$\frac{13(2x + 7y)}{130} = \frac{2x + 7y}{10}$$

Hence, at  $x = 5, y = 0$

$$(2x + 7y) = 2 \times 5 + 7 \times 0 = 10 \text{ (divisible by 10)}$$

Also at  $x = 3, y = 2$

$$(2x + 7y) = 2 \times 3 + 7 \times 2 = 20 \text{ (divisible by 10)}$$

Hence, minimum value of  $(x + y) = (5 + 0)$  or  $(3 + 2) = 5$

67. (d)

Let four pens be  $P_1, P_2, P_3, P_4$  and notebooks be  $N_1, N_2, N_3, N_4$  of the corresponding colours.

Now,  $P_1$  is not be placed inside  $N_1$ . It can be placed inside  $N_2, N_3$  or  $N_4$ . Thus,  $P_1$  can be placed in 3 ways.

$N_2$	$N_1$	$N_3$	$N_4$
$P_1$	$P_4$	$P_2$	$P_3$
$P_1$	$P_3$	$P_4$	$P_2$
$P_1$	$P_2$	$P_4$	$P_3$

This gives us 3 ways of  $P_1$  being placed inside  $N_2$ .

Similarly, 3 ways of  $P_1$  being placed inside  $N_3$  and 3 ways of  $P_1$  being placed inside  $N_4$ .

Hence, total number of ways

$$= 3 \times 3 = 9 \text{ ways}$$

68. (a)

**Statement-I:**

$(x^3 - 1) = \text{even} \rightarrow \text{possible only when } x = \text{odd}$

$$\text{ex. } 3^3 - 1 = 26 = \text{even}$$

$$2^3 - 1 = 7 = \text{odd}$$

Hence, statement I alone is sufficient to answer the question.

**Statement-II:**

$$(4x^2 - 3) = \text{odd}$$

$4x^2 \rightarrow$  always even irrespective of value of  $x$ , and hence  $(4x^2 - 3)$  will be always odd.

Hence, statement 2 alone is not sufficient to answer the question.

69. (a)

$$a + b = ab$$

$$\Rightarrow ab - a - b = 0$$

$$\Rightarrow ab - a - b + 1 = 1$$

$$\Rightarrow a(b - 1) - 1(b - 1) = 1$$

$$(a - b)(b - 1) = 1$$

Both  $a - 1$  and  $b - 1$  have to be equal to 1 or -1.

So, values taken by  $(a, b)$  are  $(2, 2)$  and  $(0, 0)$

Hence, 2 solutions.

70. (c)

$S > Q > P$  (taller) - from statement-1

$Q > R$  - from statement-2

Considering both statements,

$S > Q > R > P$  or  $S > Q > P > R$

In any case, S is the tallest

Hence, the given question can be answered using both the statements only.

71. (b)

**Statement 1 is incorrect.** According to the passage, a census or survey is the best approach to determine whether the majority of Indian families are still considered "joint families", and if one wants to compare the situation of women in nuclear and combined families, participant observation, case studies, and interviews may all be useful techniques. Hence it is not a correct statement.

**Statement 2 is correct.** As mentioned in the passage there are numerous methodologies in sociology given the multiplicity of perspectives and truths. The path to social truth is not one and the same. Hence, it is a correct statement.

72. (b)

**Option (a) is incorrect.** According to the passage, it is a partially incorrect statement.

It is only a part of the central argument which says that multiple truths exist in sociology, simultaneously. Hence, it is not a correct statement.

**Option (b) is correct.** It is the most important implication of the passage. The passage says that there are numerous methodologies in sociology given the multiplicity of perspectives and truths. The path to social truth is not one and the same. The passage revolves around this central argument. Hence, it is the correct statement.

**Option (c) is incorrect.** It is not mentioned anywhere in the passage. Hence, it is not a correct statement.

**Option (d) is incorrect.** In the sociological study, quantitative and qualitative methods are used. But among the two which one is more useful and used more is not mentioned. Hence, it is not a correct statement.

73. (d)

**Option (a) is incorrect.** Refer to the line: "While the Keynesian theories hugely propagate substantial government spending in times of crisis to kick-start consumption." The author does highlight the need for substantial government spending during crisis as recommended by Keynesian approach. However, the passage nowhere mentions that the approach failed due to insufficient financial resources of the government. In fact, there is no analysis of the availability of govt. finances in the passage.

**Option (b) is incorrect.** Refer to the last line of the passage: ".artificially stimulating the economy on such a macro-scale, inevitably leads to inflation, followed by a slowdown." The passage only says that artificially stimulating the economy leads to inflation. It is nowhere mentioned that this stimulation is via printing money. There could be other measures like increasing salary or manipulating exchange rate.

**Option (c) is incorrect.** Refer to the line: ".such measures would awaken demand and lift the spirit of businesses who'd then hire more people". It clearly indicates that government

would not directly sponsor businesses hiring. The overall change in atmosphere and an upbeat spirit will actually encourage businesses to hire more. The passage doesn't mention that the government had transferred money to businesses to hire more people.

**Option (d) is correct.** The passage mentions that Keynesian approach of vigorous government intervention by huge spending in the form of cash hand-outs and putting more money in people's pockets is being pursued by the governments. But according to Hayek, this approach of "extreme hand-holding by the government" causes interference in natural market forces. This interference is being manifested as inflation in the economy, followed by a slowdown. This is the reason behind the failure of the Keynesian approach.

74. (a)

**Statement 1 is correct.** The passage's last line mentions that artificially stimulating the economy leads to inflation which is followed by a slowdown. This means that government intervention to revive the economy should not lead to a new problem in the form of inflation. So, preventing unintended inflation could be a part of the govt. approach.

**Statement 2 is incorrect.** The theme of the passage is against extreme hand-holding of the market, businesses, and the people. Furthermore, the passage talks about reviving the sentiment which would automatically encourage business hiring. Therefore, providing govt. jobs might not be the right measure in the context of this passage.

75. (b)

**Statement 1 is incorrect.** The passage mentions, ".night time and overcast days can interrupt the supply". This indicates that even tropical countries would need to develop storage of solar energy. Therefore, to infer that they are less dependent on storage will not be correct.

**Statement 2 is correct.** The passage mentions "As the global capacity for solar power continues to rise, nations like Japan and other global leaders in solar energy technology are focusing on developing adequate energy storage to deal with this issue". This indicates that global leaders in solar energy technology have started investing in developing adequate energy storage. Therefore, we may infer that, in the future, the cost of storing solar power would probably decrease.

76. (c)

Using statement 1 and 2, speed of car A can be found and the time taken by car A to cover the distance of 500 km can be found.

However, no statement alone can answer the given question.

77. (d)

Since S and T are odd and P, Q and R are even, then difference are 2 and the equation is

$$S + T = P + Q + R$$

Here,  $5 + 7 = 4 + 2 + 6$  (keeping all the digits)(n.....)

Thus  $S = 5$ ,  $T = 7$ ,  $P = 4$ ,  $Q = 2$  and  $R = 6$

(a)  $S + P > T + Q + R$

$$5 + 4 > 7 + 2 + 6$$

$$9 > 15 \text{ (wrong)}$$

(b)  $S + T + P < Q + R$

$$5 + 7 + 4 < 2 + 6$$

$$16 < 8 \text{ (wrong)}$$

(c)  $S + Q + R < T + P$

$$5 + 2 + 6 < 7 + 4$$

$$13 < 11 \text{ (wrong)}$$

(d)  $S + P < T + Q + R$

$$5 + 4 < 7 + 2 + 6$$

$$9 < 15 \text{ (correct)}$$

78. (d)

$$60\% \text{ of } P = 40\% \text{ of } Q$$

$$\frac{60}{100} \times P = \frac{40}{100} \times Q$$

$$\Rightarrow P = \frac{2}{3}Q$$

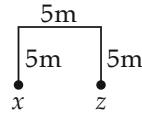
$$\Rightarrow P = 0.66Q$$

Hence,  $P < Q$  (always)

79. (a)

**Statement 1:**

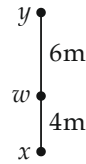
Direction of  $y$  is not known with respect



Hence, question cannot be answered using statement 1.

**Statement 2:**

Hence,  $x$  is loss south of  $y$ .



Hence, only statement 2 is sufficient to answer the question.

80. (d)

All possible values of the 3-digit password are

1 <sup>st</sup> most digit 1	1 <sup>st</sup> most digit 2	1 <sup>st</sup> most digit 3
147	258	369
148	259	
149	269	
158		
159		
169		

Hence, option (d) is correct.

■■■■

