

1. 554, 444, 757, 577 etc. are examples of number with repeated digits. How many such whole numbers from 1 to 201 are there which have repeated digits?
- (a) 35
 (b) 41
 (c) 38
 (d) 40

Answer: (c)

Solution:

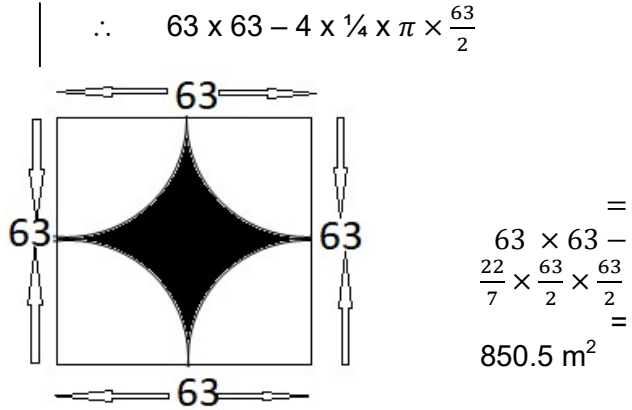
From 1 to 201 we have
 Single digits 1 to 9 – No such repeated digit number
 \therefore Reqd. Number = 0
 Double digit is 10 to 99
 Number of numbers with repeated digits
 11, 22, 33, 44, 55, 66, 77, 88, 99
 \therefore Reqd. Number = 9
 Triple digit i.e. 100 to 200
 Number of numbers with repeated digits are:
 100, 101, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 121, 122, 131, 133, 141, 144, 151, 155, 161, 166, 171, 177, 181, 188, 191, 199, 200
 \therefore Reqd. Number = 29
 \therefore Total number = 9 + 29 = 38

2. Four horses are tied at four corners of a square plot of side 63 metres so that they just cannot reach one another. What is the area ungrazed by the horses?
- (a) 775.5m²
 (b) 780.75m²
 (c) 850.5m²
 (d) 975.02m²

Answer: (c)

Solution:

Here shaded region represents the ungrazed portion
 Area of shaded region = Area of Square - Area of 4 Quadrant



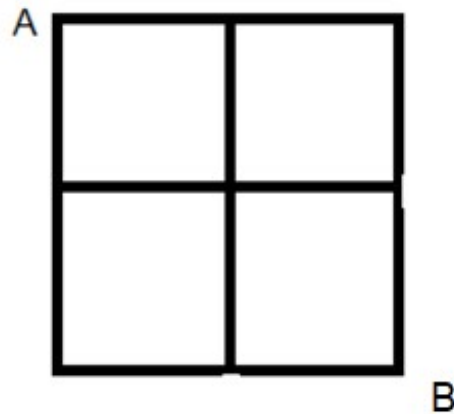
3. A dance class can be divided into 12 teams with an equal number of dancers in each team OR into 15 teams with an equal number of dancers in each team. What is the lowest possible number of dancers in the class?
- (a) 45
 (b) 36
 (c) 60
 (d) Cannot be determined

Answer: (c)

Solution:

LCM of 12 & 15 = 60

4. Study the following figure:
 A person goes from A to B always to the right or downwards along the lines. How many different routes can be adopted?

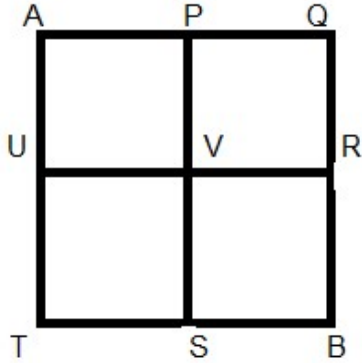


- (a) 4
- (b) 5
- (c) 6
- (d) 7

Answer: (c)

Solution:

Mark the figure



From A, a person can move to either P or U

From P, the person can follow following path –PQRB, PVRB, PVSB

From U, the person can follow following path –UVRB, UVSB, UTSB

5. The probability of Vagisha's travel to the USA and UK on a holiday are $2/5$ and $1/3$ respectively. Find the probability that she will be travelling to the USA or U.K.
- (a) $7/15$
 - (b) $4/15$
 - (c) $11/15$
 - (d) None of the above

Answer: (c)

Solution:

$$\text{Reqd. Answer} = \frac{2}{5} + \frac{1}{3} = \frac{6+5}{15} = \frac{11}{15}$$

6. A husband and a wife appear in an interview for two vacancies at the same post. The probability of husband's selection is $1/7$ and

wife's selection is $1/5$. What is the probability that only one of them will be selected?

- (a) $1/7$
- (b) $2/7$
- (c) $5/7$
- (d) None of the above

Answer: (c)

Solution:

$$\begin{aligned} \text{Reqd. Answer} &= \frac{1}{7} \times (1 - \frac{1}{5}) + (1 - \frac{1}{7}) \times \frac{1}{5} \\ &= \frac{1}{7} \times \frac{4}{5} + \frac{6}{7} \times \frac{1}{5} \\ &= \frac{4}{35} + \frac{6}{35} \\ &= \frac{10}{35} \\ &= \frac{5}{7} \end{aligned}$$

7. In a recent survey 40% houses contained two or more people. Of those houses containing only one person 25% were having only a male. What is the percentage of all houses which contain exactly one female and no males (Assume that each house contains at least one person)?

- (a) 60
- (b) 40
- (c) 45
- (d) 75

Answer: (c)

Solution:

$$\begin{aligned} \text{Let the total houses be} &= 100 \\ \text{Number of houses containing two or more people} &= 40 \\ \text{Number of houses containing exactly one person} &= 60 \\ \text{Number of houses containing only one male} &= \frac{25}{100} \times 60 = 15 \\ \therefore \text{Number of houses containing only one female} &= 60 - 15 = 45 \end{aligned}$$

8. The average height of 40 students is 163 cm. On a particular day three students A, B, C were absent and the average of the remaining

37 students was found to be 162 cm. If A, B have equal heights and the height of C be 2 cm less than that of A, find the height of A?

- (a) 175 cm
- (b) 172 cm
- (c) 176 cm
- (d) 174 cm

Answer: (c)

Solution:

$$\text{Total height of 40 students} = 40 \times 163 = 6520$$

$$\text{Total height of 37 students} = 37 \times 162 = 5994$$

$$\therefore \text{Height of three students A, B and C} = 6520 - 5994 = 526$$

$$\text{Let the height of A \& B individually be } = x$$

$$\therefore \text{Height of C} = x - 2$$

$$\therefore x + x + x - 2 = 526$$

$$3x = 528$$

$$x = 528/3 = 176 \text{ cm}$$

9. A wheel of a bicycle has inner diameter 50cm and thickness 10cm. What is the speed of the bicycle if it makes 10 revolutions in 5 seconds?

- (a) 5.5 m/s
- (b) 4.4 m/s
- (c) 3.3 m/s
- (d) 2.2 m/s

Answer: (b)

Solution:

$$\text{Inner radius } r_1 = 25 \text{ cm}$$

$$\text{External radius } r_2 = 25 + 10 = 35 \text{ cm}$$

$$\text{Distance covered in one revolution} = 2\pi r = 2 \times 22/7 \times 35 = 220 \text{ cm}$$

$$\begin{aligned} \text{Hence, speed of bicycle} &= \text{Distance covered} \div \text{time} \\ &= 2200/5 \text{ cm / s} \\ &= 22/5 \text{ m/s} \\ &= 4.4 \text{ m/s} \end{aligned}$$

10. The following table shows the percentage of male and female coffee drinkers and non-coffee drinkers in two Towns A and B:

Attributes	Town-A		Town-B	
	Male	Female	Male	Female
Coffee Drinkers	40%	5%	25%	15%
Non-Coffee Drinkers	20%	35%	30%	30%

If the total population of Town-A and B are 10,000 and 20,000 respectively, then what is the total number of female coffee drinkers in both the towns?

- (a) 8000
- (b) 6000
- (c) 3500
- (d) 2500

Answer: (c)

Solution:

$$\begin{aligned} \text{Total number of female coffee-drinkers} &= 5\% \text{ of } 10,000 + 15\% \text{ of } 20,000 \\ &= 500 + 3000 \\ &= 3500 \end{aligned}$$

Directions for the following three (3) items: Read the following passage and answer the items that follow. Your answers to these items should be based on the passage only.

PASSAGE-1

The pioneers of the early organic agriculture movement were motivated by a desire to reverse the perennial problems of agriculture – erosion, soil depletion, decline of crop varieties, low quality food and livestock feed, and rural poverty. They embraced a holistic notion that the health of a nation built on agriculture is dependent on the long-term

vitality of its soil. The soil's health and vitality were believed to be embodied in its biology and in the organic soil fraction called humus.

A soil management strategy called humus farming emerged, which employed traditional farming practices that not only conserved but also regenerated the soil. These practices included managing crop residues, applying animal manures, composting, green manuring, planting perennial forages in rotation with other crops, and adding lime and other natural rock dusts to manage pH and ensure adequate minerals. Since the strategy revolved around soil building to nourish crops, "feed the soil" became the humus farming mantra. "Feeding the soil" meant feeding the soil food web. The soil food web is the living fraction of the soil, composed of bacteria, fungi, earthworms, insects, and a host of other organisms that digest organic matter and "meter" nutrition to crop plants. This contrasts with the strategy of using soluble fertilizers, which bypass the soil food web to fertilize plants directly. Humus farmers typically avoided, or used very few, soluble fertilizers. Humus farmers felt that soluble fertilizers led to imbalanced plant nutrition and "luxury consumption," which reduced food and feed quality. Many also believed that synthetic fertilizers harmed the soil biology – either killing organisms or upsetting the natural balance. They also saw this danger in the use of pesticides, and chose to use few, if any, of those. Other humus farmers recognized that synthetic fertilizers and pesticides would lead to shortcuts in crop rotation – eliminating many of the soil building and pest control benefits that good rotations confer. The use of synthetic nitrogen fertilizer, especially, would reduce the inclusion of perennial legume forages

and green manure crops in cropping sequences.

11. According to the passage, what should be the practices in organic farming?

- (1) Following crop rotations in cultivation.
- (2) Maintaining the mineral balance in the soil.
- (3) Improving the quality of livestock feed.
- (4) Using traditional farming with soil conservation methods.

Select the correct answer using the code given below:

- (a) 1 and 2 only
- (b) 1, 2 and 3 only
- (c) 1, 2 and 4 only
- (d) 1, 2, 3 and 4

Answer: (c)

Explanation:

Statements (1) and (2) are supported by the passage in "These practices ... ensure adequate minerals." Statement 1 corresponds to "... planting perennial forages in rotation with other crops ..." and statement 2 corresponds to "... adding lime and other natural rock dusts to manage pH and ensure adequate minerals."

Statement (3) is incorrect since poor quality livestock feed is described as one of the problems that the early organic farming movement aimed to find a solution to and is not described as a practice in organic farming. This eliminates options (b) and (d).

Statement (4) is supported by "A soil management strategy called humus farming emerged, which employed traditional farming practices that not only conserved but also regenerated the soil." Eliminate option (a).

Hence, **the correct answer is option (c).**

12. Which of the following is the closest to the view of soluble fertilizers as mentioned in the passage?
- They eliminate natural pest control benefits provided by the soil.
 - They lead to a disproportion in plant nutrition.
 - They are used sparingly since they harm soil biology.
 - They harm the growth of legume forages.

Answer: (b)

Explanation:

According to the passage, soluble fertilizers "... led to imbalanced plant nutrition and "luxury consumption," which reduced food and feed quality.". This supports option (b) alone among the given options.

Options (a), (c) and (d) have been attributed to synthetic fertilizers and not soluble fertilizers. **This eliminates options (a), (c) and (d).**

Hence, **the correct answer is option (b).**

13. According to the passage, what is the purpose of "feeding the soil"?
- To monitor the amount of nutrition available to plants.
 - To enrich the soil biology.
 - To enable speedy fertilization of crops.

Select the correct answer using the code given below:

- 1 only
- 2 and 3 only
- 1 and 2 only
- 1, 2 and 3

Answer: (c)

Explanation:

Statement (1) can be inferred from -

"The soil food web ... nutrition to crop plants." Therefore, statement 1 is correct.

Statement (2) too, can be inferred from "They embraced a holistic ... called humus.". This eliminates option (a).

Statement 3 has been mentioned as an action of soluble fertilizers and not for the purpose of "feeding the soil.". This makes **statement (3) incorrect** eliminating options (b) and (d).

Hence, **the correct answer is option (c).**

PASSAGE -2

A person's poverty depends most on how he/she is perceived by his surroundings. Of course, self-perceptions also matter, but it is how one stands "relative" to his surroundings that mainly determines how rich or poor he is. For starters, it is a bit like saying that with Rs 100 in your hand, you are "rich" relative to the person who has just Rs 10 and "poor" relative to the person with Rs 1000. In that sense, as long as people have different incomes in a society, there will always be "poverty" since some will always be worse off than others. This relative nature makes poverty one of the most complex issues to define and measure. Calculating a poverty line is difficult as poverty line is an absolute measure of a relative concept. No matter what number you choose for delineating the rich from the poor, it would be arbitrary at one level. Why do governments calculate a poverty line at all? And how is it done? One of the main concerns for any welfare oriented government in any country, including China, is to provide relief to the poorest population. Governments come up with policies like providing cheap food grains, or free education or some kind of unemployment benefit etc. And to know whether these schemes are working or

not, governments draw a “poverty line” and monitor whether its policies are raising the well-being of its poorest people.

The idea behind a poverty line is to choose a number, partly based on some educated assumptions and some sample data, which would capture the picture of the lowest 20%–30% of the population. This way, the government gets to know the exact standard of living of its poorest population. And as such, it can then tailor its anti-poverty programs more accurately. In a country like India, which is poor relative to, say, most western countries, such a poverty line often looks like a “starvation line.” However, if, as many seem to suggest, while in the throes of sham outrage, government was to draw a poverty line, which includes say 75% of the population, then it will only muddy the government’s policy prescription for the poorest people.

- 14.** Why is establishing a poverty line necessary?
- (a) To provide relief to the deserving population of the country.
 - (b) To understand the problems of the moderately poor and those who are acutely poor.
 - (c) To determine who exactly is poor in order to offer effective aid.
 - (d) To understand the problems of the lowest 20-30 per cent of the population who are poor.

Answer: (c)

Explanation:

Option (a) is incorrect as "deserving population" is a vague term which has not been adequately defined by the passage. Deserving in what manner is not mentioned.

Option (b) is incorrect as it has no supporting data. Secondly, the issue is not just to understand problems but also to alleviate them. Also, the focus is to identify the ‘very poor’ and improve their condition.

Option (d) is incorrect because simply understanding the problems of the lowest 20 – 30 percent population who are poor is not sufficient. The government must distribute effective aid to this segment.

Option (c) correctly captures all aspects of the real reason - to determine who exactly is poor so that effective aid can be given to them.

Hence, **the correct answer is option (c).**

- 15.** Why does the author mention China as an example?
- (a) To provide a contrasting view to India’s poverty alleviating policies.
 - (b) To highlight how China is providing aid and relief to its poorest population.
 - (c) To denote that China is able to provide cheap food grains and free education for its poorest population and India is not.
 - (d) To explain why poverty line is necessary and to monitor the effects of the relief policies.

Answer: (d)

Explanation:

The passage mentions China to show that even a state that is described as a welfare state needs a poverty line to aid its most poor. **This is best described in option (d).**

The efforts put in by China in this regard are not described at all. Also, there has been no comparison made of the relative efforts or achievements of China and India on these fronts. Hence, **options**

(a), (b) and (c) are invalid.

Hence, **the correct answer is option (d).**

16. Which of the following statements are correct?

- (1) It is necessary to identify the poor so that help is targeted specifically to them.
- (2) Quality of life of the poor is an important variable while determining which anti-poverty program to implement.
- (3) India actually has 75% of its people living below the poverty line.

Select the correct answer using the code given below:

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Answer: (a)

Explanation:

The passage states that poor people have to be identified in order for them to receive aid. Therefore, **statement (1) is correct.**

Statement (2) is correct. The passage mentions specific anti-poverty programs that provide “relief to poor”.

The figure of 75% quoted in the passage is actually as a result of “sham outrage” and therefore can be ignored. Hence, **statement (3) is incorrect.**

Hence, **the correct answer is option (a).**

Directions for the following three (3) items: Read the following three passage and answer the items that follow passage. Your answers to the items should be based on the passage only.

PASSAGE-3

Information is a currency, and the new bill on corporate governance in the private sector looks to put more of it in the public domain, particularly related to unlisted and privately held companies. Lately, several transactions of private companies that, directly or indirectly, intersected with public interest have made a case for this set of companies to put out more information.

The proposed law wants companies to give financial statements that consolidate the numbers of all their subsidiaries, including associates and joint ventures. It also wants them to put out their cash-flow statement, which is the place to find how much of a company's cash came from operations and how much from external financing. Such disclosures will give a more holistic picture of an entity's business interests. Thanks to capital market regulator Securities Exchange Board of India, listed companies already present consolidated accounts, up to an extent, and cash-flow statement. Even they would have to make adjustments.

Companies that previously reported consolidated annual numbers as per IFRS (International Financial Reporting Standards), which was permitted by SEBI, would now need to consider the need to again report consolidated numbers as per Indian accounting principles on a quarterly basis. Other changes proposed include seeking shareholder approval when a director of the company, or its holding company or subsidiary acquires assets from the company for a non-cash consideration.

The proposal with possibly the greatest import relates to how companies route their investments. In order to identify the ultimate beneficiary, the new legislation proposes to restrict the number of layers of investment companies to two.

17. According to the passage, the new bill on corporate governance has which of the following features?

- (1) Holding company ought to present consolidated financial statements and subsidiaries ought to include joint ventures and associates.
- (2) Annual financial statements should include cash flow statements.
- (3) Shareholders' approval is needed for related party transactions.
- (4) Companies should route their investments through not more than two investment companies.

Select the correct answer using the code given below:

- (a) 1 and 2 only
- (b) 1 and 3 only
- (c) 2 and 3 only
- (d) 1, 2, 3 and 4

Answer: (d)

Explanation:

Statement (1) can be inferred from "The proposed law wants companies to give financial statements that consolidate the numbers of all their subsidiaries, including associates and joint ventures." This eliminates option (c).

Statement (2) is supported by "It also wants them to put out their cash-flow statement, which is the place to find how much of a company's cash came from operations and how much from external financing." This eliminates option (b).

According to the passage, "Other changes proposed include seeking shareholder approval when a director of the company or its holding company or subsidiary acquires assets from the company for a non-cash consideration." This **makes statement (3) correct** and

eliminates option (a).

Statement (4) can be inferred from "In order to identify the ultimate beneficiary, the new legislation proposes to restrict the number of layers of investment companies to two."

This vindicates option (d).

Hence, **the correct answer is option (d)**.

18. Which of the following observations about the new bill on corporate governance emerges from the passage?

- (a) It will change the way in which Indian companies operate.
- (b) Indian companies will have to remodel their corporate structure according to it.
- (c) It addresses the issue of corporate governance in the private sector.
- (d) Private companies will be required to disclose more information as mandated by it.

Answer: (d)

Explanation:

According to the passage, "Information is a currency, and the new bill on corporate governance in the private sector looks to put more of it in the public domain, particularly related to unlisted and privately held companies"; it details the kind of information that will now have to be made available by private companies in the public domain. Hence, **option (d) accurately captures the crux** of the passage. The other options are factually correct but do not touch upon the essential foundation of the passage. Option (c) is true but misleading; it is too general to be the basic observation of this passage.

Hence, **the correct answer is option**

(d).

19. With reference to the passage the following assumptions have been made:

- (1) Corporate governance is well-regulated in the public sector.
- (2) Restricting the number of investment-holding companies to not more than two layers will improve corporate governance.

Which of the above is/are valid assumption/assumptions?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Answer: (b)

Explanation:

The passage pertains to corporate governance in the private sector and hence, does not make a judgement on the public sector. This makes **statement (1) an invalid assumption**. Eliminate options (a) and (c).

According to the passage, "In order to identify the ultimate beneficiary, the new legislation proposes to restrict the number of layers of investment companies to two". This will lead to more information being made available in the public domain, which the passage assumes, would improve corporate governance as indicated in - "Information is a currency, and the new bill on corporate governance in the private sector looks to put more of it in the public domain, particularly related to unlisted and privately held companies." This **makes statement (2) a valid assumption** and vindicates option (b).

Hence, **the correct answer is option (b)**.

20.

Consider the following statement and the two statements that follow from it:

Only if the Government resorts to deficit financing will the economic crisis be averted.

- (1) The Government resorted to deficit financing and so, the economic crisis was averted.
- (2) The economic crisis was not averted and so, the government did not resort to deficit financing.

Which of these statements follows from the main statement?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Answer: (d)

21. How many words, with or without meaning each of 3-vowels and 2-consonants can be formed from the letters of the word INVOLUTE?

- (a) 2420
- (b) 1440
- (c) 2880
- (d) 2520

Answer: (c)

Solution:

Vowels: E, I, O, U, Consonants: N, V, L, T

$$\text{Reqd. Answer: } 4C_3 \times 4C_2 \times 5P_5 \\ = 4 \times 6 \times 120 = 2880$$

22. A is thrice as efficient as B. Both together can complete a piece of work in 9 days. A alone will take how much time for same piece of work

- (a) 36 days
- (b) 18 days
- (c) 24 days
- (d) 12 days

Answer: (d)

Explanation:

Efficiency

A:B is 3:1

Time

A : B is 1: 3

$$E \propto \frac{1}{T}$$

In terms of **Efficiency**

$$A = 3B$$

$$A + B = 9 \text{ days}$$

$$3B + B = 9 \text{ days}$$

$$4B = 9 \text{ days}$$

$$B = 9 \times 4 = 36 \text{ days}$$

Since no. of men is inversely proportion to no. of days for same piece of work
B alone take 36 days so A will do it in 12 days

23. The Police Commissioner of Jaipur started driving from his office towards west. After driving a distance of 50 kms he turned to the right and drove 20 kms. He then again turned to the right and drove 30 kms. After this he turned 135° right. In which direction he is travelling now?

- (a) North West
- (b) South
- (c) South West
- (d) None of the above

Answer: (c)

24. Calendar of 2019 will repeat in?

- (a) 2025
- (b) 2026
- (c) 2030
- (d) None of the above

Answer: (c)

25. An alphabet series is given with one term missing. Choose the correct alternative that will continue

the same pattern and replace the question mark in the given series:

A, B, E, K, ?, J, E

- (a) A
- (b) J
- (c) U
- (d) G

Answer: (c)

Explanation:

Gap between the alphabets is increasing in ascending order

A +1 B +2 E +1+2+3 K +1+2+3+4 U +1+2+3+4+5 J +1+2+3+4+5+6 E

26. A number series is given with one term missing. Choose the correct alternative that will continue the same pattern and replace the question mark in the given series:

5, 12, 26, 54, 110, ?, 446

- (a) 220
- (b) 222
- (c) 224
- (d) 226

Answer: (b)

Explanation:

The correct pattern is +7, +14, +28, +56, +112, +224

27. A letter series is given with some term missing. Choose the correct alternative that will continue the same pattern and fill the blanks in the given series: a bc a _ bc a _ b

_ _ a b b _ b _ a _ b _ b _ c

- (a) b a b a b a b c b
- (b) b b b c b c b bb
- (c) b b a b b a b c b
- (d) b a b b a b b c b

Answer: (b)

Explanation:

Letter series is **abcabbcabbbcabbbbcabbbbc** so missing characters are **bbbcbcbbbb**.

28. Ashok is twice as efficient as Anil. How much time will they, working together, take to complete a job which Ashok alone could have done in 10 days less than Anil?
- (a) 8 days
 (b) 10 days
 (c) 5.44 days
 (d) 6.66 days

Answer: (d)

Explanation:

$$\text{Efficiency} \propto \frac{1}{\text{Time}}$$

Efficiency

Ashok : Anil

2 : 1

So for time

Ashok : Anil

1 : 2

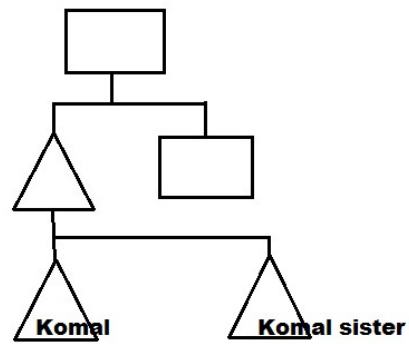
Since Ashok alone could have done the work in 10 days less than Anil, if Ashok alone can do the work in 10 days then Anil alone can do the work in 20 days. Together Ashok and Anil can do the work together in 6.66 days.

29. Pointing to a photograph, Komal (female) said, "Her mother's brother is the only son of my mother's father. My mother has no sister". How is Komal related to the lady?
- (a) Herself
 (b) Sister
 (c) Brother
 (d) Either (a) or (b)

Answer: (d)

Explanation:

30. In a row of 40 boys, Rahul was shifted 8 places to the right of Raju and Sumit was shifted 8 places to



the left of Ravi. If Ravi was 21st from the left and there were 2 boys between Sumit and Rahul after shifting, what was the position of Raju in the row?

- (a) 10th from the left end
 (b) 15th from right end
 (c) 13th from right end
 (d) Data inadequate

Answer: (d)

Explanation:

Ravi was 21st from the left and Sumit is 8 places left to Ravi So, Sumit is 13th from left. Now there are 2 boys between Sumit and Rahul so Rahul may be 10th or 16th from left. Since the exact position of Rahul cannot be ascertained, so Data Inadequate.

31. If '+' means 'multiplied by', 'x' means 'divided by', '÷' means 'minus', '-' means 'plus' then what would be the value of $15 \times 45 + 20 + 30 \div (12 \times 6 - 2 + 18 \div 9 + 15)$?
- (a) 940
 (b) 1680
 (c) 138
 (d) None of these

Answer: (c)

Explanation:

Rule for simplification is BODMAS

$$15 \div 45 \times 20 \times 30 - (12 \div 6 + 2 \times 18 \div 9 + 15)$$

$$200 - (2 + 60) = 138$$

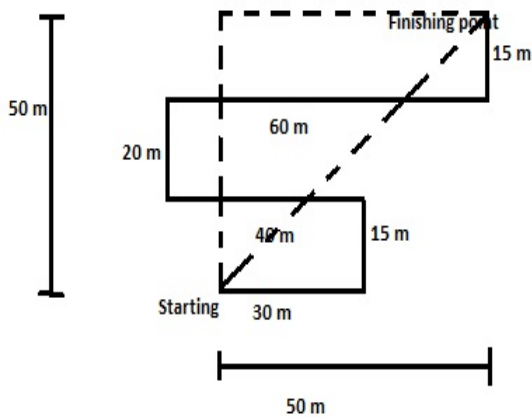
32. Sunil is facing North. He turns right and walks 30 m. Then he turns left and walks 15 m. Then he turns left

and walks 40 m and then turning right walks 20 m. Then he turns right again and walks 60 m. Then he turns left and walks 15 meters. In which direction is he from the starting point and what is the shortest distance between starting point and finishing point?

- (a) Northwest and 100m approx
- (b) Northeast and 100m approx
- (c) Southeast and 70m approx
- (d) Northeast and 70m approx

Answer: (d)

Explanation:



So approximate distance will be 70 m and direction will be north east.

33. The lengths of outer walls of the Stock Exchange building in Mumbai are 405 feet, 243 feet, 504 feet and 342 feet. Find the greatest length of tape by which the four sides may be measured completely?
- (a) 165 feet
 - (b) 45 feet
 - (c) 9 feet
 - (d) 3 feet

Answer: (c)

Explanation:

H.C.F. of 405, 243, 504 and 342 is 9 feet, so answer is (c).

34. A grocer sells wheat at a profit of 5% but by mistake he has given 20% more weight. Find his total percentage gain or loss.
- (a) 20% loss approx
 - (b) 20% profit
 - (c) 12.5% loss
 - (d) 12.5% profit

Answer: (c)

Explanation:

Let C.P. of 1000g is Rs. 1000
 5% profit means S.P. will be 1050
 But grocer has given 20% more weight it means he has given 1200 grams
 So C.P. for 1200 g will be Rs. 1200

$$\text{Profit\%} = \frac{S.P. - C.P.}{C.P.} \times 100$$

$$\frac{1050 - 1200}{1200} \times 100 = -12.5\%$$

i.e. 12.5% loss.

35. A positive no. is divided by 4 instead of being multiplied by 4. What percentage is the result of the required correct value?
- (a) 175% approximately
 - (b) 100%
 - (c) 6.25%
 - (d) Cannot be determined

Answer: (c)

Explanation:

Let Number is 100
 Correct value would be 400
 Wrong value is 25 only
 So result will be 6.25% of required correct value.

PASSAGE-4

Social protection is a fundamental issue in promoting social and human development and reducing risks and vulnerabilities of individuals, households

and communities. Thus, social protection is a part of a broader framework of social risk management and is closely intertwined with human and social development. Social development is defined broadly as sustainable human development which enhances human capabilities for enlarging human choices. Social protection plays a crucial role in the alleviation of poverty and contributes to economic growth by not only raising labour productivity, but also by enhancing social stability. The United Nations Commission for Social Development noted: "Social protection should not simply be seen as a residual policy function of assuring the welfare of the poorest – but as a foundation at a societal level for promoting social justice and social cohesion, developing human capabilities and promoting economic dynamism and creativity".

The terms "social security" and "social protection" are used interchangeably, when in fact, they are quite different. Social security covers all measures providing benefits, whether in cash or kind, to secure "protection" from lack of work-related income caused by sickness, disability, maternity, employment injury, unemployment, old age, or death; lack of access to health services; insufficient family support; and poverty and social exclusion. On the other hand, social protection includes actions to minimize risks or transfers between individuals or households to cope during difficult times. Social protection empowers people, widens their choices, and promotes social inclusive development. Its strategies may include reduction, mitigation and strategies for coping with risk. Social security plays a critical role in times of crisis and provides mechanisms to alleviate and prevent poverty, reduce income disparities and enhance human capital and productivity.

36. What does the author imply by "social protection"?

- (1) Social risk management falls under the foray of social protection.
- (2) Social protection aims to secure communities by mitigating social risks.
- (3) Poverty can be prevented if adequate social protection is provided.
- (4) Social protection helps in enhancing human capabilities for enlarging human choices.

Select the correct answer using the code given below:

- (a) 1, 2 and 3 only
- (b) 4 only
- (c) 3 and 4 only
- (d) 2 and 4 only

Answer: (d)

Explanation:

Statement (1) is incorrect from "... social protection is a part of a broader framework of social risk management ...", which indicates that "social protection" falls under the aegis of social risk management instead of it being the other way round. Therefore, statement 1 is incorrect. This eliminates option (a).

Statement (2) can be inferred from "Its strategies may include reduction, mitigation and strategies for coping with risk.". This eliminates options (b) and (c). Statement (3) holds true for "social security" and not "social protection" as observed in "Social security plays a critical role in times of crisis and provides mechanisms to alleviate and prevent poverty ..." and "Social protection plays a crucial role in the alleviation of poverty ...". Though the passage mentions social protection as alleviating poverty, it is not the same as preventing poverty.

Therefore, **statement (3) is incorrect.**

Statement (4) is supported from

“Social protection empowers people, widens their choices ...” This vindicates option (d) as the correct choice.

Hence, the correct answer is **option (d).**

37. According to the passage, what are the manifestations of social development?

- (1) Inclusive growth ensuring societal well-being
- (2) Promotion of economic dynamism
- (3) Furthering the reach of human development

Select the correct answer using the code given below:

- (a) 1 and 3 only
- (b) 2 and 3 only
- (c) 1 and 2 only
- (d) 1, 2 and 3

Answer: (d)

Explanation:

According to the passage, “Social development is defined broadly as sustainable human development which enhances human capabilities for enlarging human choices.” **This supports statements (1) and (3) both** of which hint towards holistic development of society. This eliminates options (b) and (c).

Statement 2 also can be termed as a manifestation of social development since the passage mentions social protection “... as a foundation at a societal level for promoting social justice and social cohesion, developing human capabilities and promoting economic dynamism ...” and it also states “Thus, social protection is a part of a broader framework of social risk management and is closely intertwined with human and social development.” This

eliminates option (a) and justifies option (d) as the right answer.

Hence, **the correct answer is option (d).**

38. With reference to the passage, consider the following statements:

- (1) Social stability is dependent on the level of protection offered by its society.
- (2) Implementing social protection can influence a country's economy in favour of its poorest.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Answer: (a)

Explanation:

Statement (1) is supported by “Social protection plays a crucial role in the alleviation of poverty and contributes to economic growth by not only raising labour productivity, but also by enhancing social stability.” This establishes the impact of social protection on social stability, making statement 1 correct. This eliminates options (b) and (d).

Statement (2) is not supported by the passage. Though the passage mentions that social protection influences a country's economy positively in “Social protection plays a crucial role in the alleviation of poverty and contributes to economic growth ...”; this does not establish that “social protection” **favours** the poorest over the rest. This eliminates option (c).

Hence, **the correct answer is option (a).**

PASSAGE-5

Sustainable agriculture is the practice of farming using principles of ecology, the study of relationships between organisms and their environment. It is an integrated system of plant and animal production practices having a site-specific application that will last over the long term; satisfy human food and fibre needs; enhance environmental quality and the natural resource base upon which the agricultural economy depends; make the most efficient use of non-renewable resources and on-farm resources and integrate, where appropriate, natural biological cycles and controls; sustain the economic viability of farm operations; enhance the quality of life for farmers and society as a whole. Sustainable agriculture was addressed by the 1990 farm bill. More recently, as consumer and retail demand for sustainable products has risen, organizations such as the Food Alliance and Protected Harvest have started to provide measurement standards and certification programs for what constitutes a sustainably grown crop. Practices that can cause long-term damage to soil include excessive tillage leading to erosion, and irrigation without adequate drainage leading to salinization. A federal agency, Natural Resources Conservation Service, specializes in providing technical and financial assistance to those interested in pursuing natural resource conservation and production agriculture as compatible goals. The most important factors for an individual site are sun, air, soil and water. Of the four, water and soil quality and quantity are most amenable to human intervention through time and labour. Although air and sunlight are available everywhere on Earth, crops also depend on soil nutrients and the availability of water. When farmers grow and harvest

crops, they remove some of these nutrients from the soil. Without replenishment, land suffers from nutrient depletion and becomes either unusable or suffers from reduced yields. Sustainable agriculture depends on replenishing the soil while minimizing the use of non-renewable resources, such as natural gas used in converting atmospheric nitrogen into synthetic fertilizer, or mineral ores e.g., phosphate. Possible sources of nitrogen that would, in principle, be available indefinitely, include: recycling crop waste and livestock or treated human manure, growing legume crops and forages such as peanuts or alfalfa, genetically engineering, non-legume crops to form nitrogen-fixing symbioses or fix nitrogen without microbial symbionts.

39. The passage supports which of the following inferences?
- (1) Natural resource conservation and production agriculture are incompatible goals.
 - (2) Sustainable agriculture depends on renewable resources and replenishment of depleted soil.
- Select the correct answer using the code given below:
- (a) 1 only
 - (b) 2 only
 - (c) Both 1 and 2
 - (d) Neither 1 nor 2

Answer: (b)

Explanation:

The passage clearly mentions that there exists an agency that specializes in providing technical and financial assistance to those interested in pursuing natural resource conservation and production agriculture as compatible goals. This clearly implies that the goals

can be compatible. Hence, **inference (1) is invalid.**

The passage mentions that sustainable agriculture depends on replenishing the soil while *minimizing* the use of *non-renewable resources*. This implies that sustainable agriculture depends more on renewable resources than non-renewable ones. Hence, **inference (2) is valid.**

Hence, the answer is option (b).

- 40.** Consider the following statements:
- (1) There is data about how various farming practices affect soil properties over long periods of time.
 - (2) Sustainable agriculture takes into account financial and production costs.
 - (3) People now prefer sustainable products over non-sustainable ones.

With reference to the passage, which of the above statements are true?

- (a) 1 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Answer: (d)

Explanation:

The passage clearly mentions that practices that can cause long-term damage to soil include excessive tillage leading to erosion, and irrigation without adequate drainage leading to salinization. This clearly implies that exists some data about how farming practices affect soil properties over a period of time. Hence, **statement (1) is true.**

The passage defines sustainable agriculture as a mechanism that works on sustaining the economic viability of farm operations. Hence, **statement (2)**

can be inferred to be true.

The passage explicitly mentions that consumer and retail demand for sustainable products has increased. Hence, **statement (3) can be considered to be true.**

Hence, **the correct answer is option (d).**

- 41.** Which of the following are most likely to be the goals of sustainable agriculture?

- (1) Improve the standard of living of farmers and society as a whole.
- (2) Enhance the environmental quality and the natural resource base in the long run.
- (3) Apply principles of ecology to farming practices in a site-specific manner.

Select the correct answer using the code given below:

- (a) 1 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Answer: (b)

Explanation:

The passage mentions that sustainable agriculture aims to enhance the *quality of life* for farmers and society as a whole. Quality of life is overall improvement and not merely standard of living which refers more to material well-being. Hence, though deceptive, **statement (1) is not suitable as a goal.**

The fact that sustainable agriculture depends on replenishing the soil while minimizing the use of non-renewable resources **supports statement (2).**

Also, **statement (3) has been covered in the definition** of sustainable agriculture as given in the beginning of the passage.

Hence, **statements (2) and (3) can be considered valid goals.** Hence, **the correct answer is option (b).**

PASSAGE-6

UN-Habitat recently expanded the definition of a 'prosperous city' to include quality of life, equitable development and environmental sustainability parameters along with productivity and infrastructure and has worked out a new comprehensive measure - City Prosperity Index (CPI) - to gauge cities. Even in this new analysis, Indian cities are yet to reach the top bracket. When a select group of urban centres across the world were calibrated with the new measure, the two alpha cities of India, Mumbai and Delhi, have come out as mediocre places. They are ranked below Sao Paulo, Shanghai and Ankara. Jakarta, which is similar to Mumbai in terms of productivity, has turned out to be a better city in terms of environment quality and equity. Seoul outdoes Delhi on all counts and turns out as a far superior metropolis.

The importance of the CPI lies in its ability to show how and why one city outscores the other and the precise policy corrections it can engender. Though Indian cities do well in terms of productivity, they are environmental nightmares. Delhi, with an environment index of 0.448 (maximum being 1.000) is at the bottom of the pile of the 69 cities studied. Deteriorating air quality, inefficient management of waste, depletion of the ground water table and vanishing water bodies have compromised the advantages offered by Indian urban centres. Insensitive encroachment of open spaces, and depleted green cover have only added to the woes. In contrast, Chongqing in

China has increased the amount of public space by 16 times in three decades and Singapore has covered 50 per cent of its surface area with greenery. The second challenge that daunts Indian cities is the issue of equity. Dhaka has a better equity index than Delhi. This is because plans for Delhi have paid less attention to the marginalised, resulting in inadequate social housing, eviction of street vendors, and flawed land policies.

42. Based on which of the following does the City Prosperity Index measures cities?

- (1) City's productivity
- (2) Focus on the less privileged
- (3) Quality of environment
- (4) Quality of life

Select the correct answer using the code given below:

- (a) 1 and 2 only
- (b) 1, 2 and 3 only
- (c) 3 and 4 only
- (d) 1, 2, 3 and 4

Answer: (d)

Explanation:

Parameters 1, 3 and 4 have been explicitly mentioned as part of the definition of a "Prosperous City".

Parameter 2 is also a valid metric as the passage mentions that Delhi loses out because plans for Delhi have paid less attention to the marginalised people i.e. such plans have not taken into account people who are less privileged.

Thus, all the parameters mentioned are valid metrics for the City Prosperity Index.

Hence, **the correct answer is option (d).**

43. If a city is ranked 65 of the 69 cities studied, it could be because:

- (1) Open spaces have been

thoughtlessly encroached upon.

- (2) The air quality in the city has worsened.
- (3) The city's waste is managed properly.
- (4) The city is looking at increasing its green cover.

Select the correct answer using the code given below:

- (a) 1, 2 and 4 only
- (b) 2, 3 and 4 only
- (c) 2 and 4 only
- (d) 1 and 2 only

Answer: (d)

Explanation:

The passage explains Delhi's poor rank by mentioning encroachment into open spaces and worsening of air quality. Hence, these are factors that can bring down a city's rank. On the contrary, effective waste management and an increase in green cover are likely to improve the rank of that city.

Hence, the poor ranking could be due to factors A and B.

Hence, **the correct answer is option (d).**

Directions for the following two (2) questions:

A statement has been given. Select the pair from among the options that follows logically with the given statement.

- 44.** All Cups are glasses.
- (1) Some glasses are spoons
 - (2) All glasses are saucers
 - (3) All glasses are cups
 - (4) Some saucers are cups

Select the correct answer using the code given below:

- (a) 1 and 4 only
- (b) 2 and 1 only
- (c) 3 and 2 only
- (d) 2 and 4 only

Answer: (d)

- 45.** All pens are blue.
- (1) All pencils are grey.
 - (2) Some pens are crayons.
 - (3) Some crayons may be pens.
 - (4) Some crayons are blue.

Select the correct answer using the code given below:

- (a) 4 and 1 only
- (b) 4 and 2 only
- (c) 4 and 3 only
- (d) 1 and 3 only

Answer: (c)

- 46.** Three taps A, B and C can fill a tank in 10, 15 and 20 hours respectively. If A and C are open all the times and B is opened alternatively, starting from 1st hour, the tank will be filled in?

- (a) 5 complete hrs and 1/10 of 6th hr
- (b) 10 complete hrs and 1/2 of 11th hr
- (c) 6 complete hrs and 1/3 of 7th hr
- (d) 3 complete hrs and 1/3 of 4th hr

Answer: (a)

Explanation:

Let the Capacity of Tank is 60 Lts (L.C.M. of 10, 15 and 20)

A will fill @ 6lts/hr

B will fill @ 4 Lts/Hr

C can fill @ 3 Lts/Hr

1st Hr A, B and C are opened they will fill

$6+4+3=13$ Lts

2nd Hr A and C are opened they will fill

$6+4=10$ Lts

Similarly these pipes keep on filling in the above pattern until the tank is filled.

Ans will be 5 complete hrs and $\frac{1}{10}$ part of the 6th hr.

47. If 1st Jan 2019 is Monday, with reference to 1st Jan 2029 what will be 9th April 2029?
 (a) Monday
 (b) Saturday
 (c) Sunday
 (d) Friday

Answer: (c)

Explanation:

1st Jan 2019 is Monday
 From 1st Jan 2019 to 1st Jan 2029 there is gap of 10 years out of which 7 are non leap year and 3 are leap year. Every non leap year is having 1 odd day and leap year is having 2 odd days. So, total no. of odd days is 7 + 6 = 13.
 From 1st Jan 2029 to 1st April there will be 6 odd days.
 From 1st April to 9th April there will be 8 odd days.
 Total no. of odd days will be 13 + 6 + 8 = 27
 27 give us 3 complete weeks and 6 odd days.
 So 9th April 2029 will be Sunday.

48. A man, by mistake, calculated the loss percentage taking S.P. as the base and found its value to be 25%. What is the actual profit/loss percentage?
 (a) 20% profit
 (b) 20% loss
 (c) 33.33% profit
 (d) 33.33% loss

Answer: (b)

Explanation: $25\% = \frac{1}{4}$

$$\frac{L}{S.P.} = \frac{1}{4}$$

$$S.P. = C.P. - Loss$$

$$\frac{L}{C.P. - Loss} = \frac{1}{4} = \frac{1}{5-1}$$

So if L is 1 then C.P. will be 5
 Hence actual loss percentage will be $\frac{L}{C.P.} = \frac{1}{5} = 20\%$

49. If Yellow is called Green, Green is called Black, Black is called White, White is called Red, Red is called Blue, Blue is called Orange then what is the colour of GRASS?
 (a) White
 (b) Black
 (c) Red
 (d) Green

Answer: (b)

DIRECTIONS for Questions 50-51: The following questions are based on the information given below:

- All the faces of a cube are painted with green colour.
 - The cube is then cut into 125 equal smaller cubes.
50. How many small cubes have at least one face coloured Green?
 (a) 44
 (b) 54
 (c) 98
 (d) 27

Answer: (c)

Explanation:

Face coloured Blue	No. of Small cubes
3 face coloured	8
2 face coloured	3×12
1 face coloured	9×6
No Face coloured	3×3×3

So, atleast one face coloured Green will be 1 face coloured + 2 face coloured + 3 face coloured = 54 + 36 + 8 = 98.

51. How many small cubes are there with atmost one faces coloured Green?

- (a) 27
- (b) 81
- (c) 54
- (d) 36

Answer: (b)

Explanation:

At most one face is coloured will be no face coloured+ 1 face coloured= 27+54=81.

- 52.** A father said to his son, "I was as old as you are at the present at the time of your birth." If the father's age is 48 years now, the son's age five years back was:
- (a) 14 years
 - (b) 19 years
 - (c) 33 years
 - (d) 38 years

Answer: (b)

Explanation:

Son's present age $48/2 = 24$
Five years back $24 - 5 = 19$

- 53.** Find out the wrong term in the following series:
342, 441, 504, 630, 710, 810, 909, 1080
- (a) 710
 - (b) 810
 - (c) 909
 - (d) 1080

Answer: (a)

Explanation:

710 is odd man out, rest multiple of 9.

- 54.** How many odd numbered pages are there in a book which has 1089 pages?
- (a) 544
 - (b) 549
 - (c) 550
 - (d) None of the above

Ans: (d)

Expl:

Number of odd numbered pages

$$= \frac{1089+1}{2} = \frac{1090}{2} = 545$$

∴ Required answer is 545.

- 55.** What should come next in the following letter series?
AACACEACEGACEGIACEGI
- (a) J
 - (b) K
 - (c) A
 - (d) L

Ans: (b)

Expl:

A/AC/ACE/ACEG/ACEGI/ACEGIK

Hence, required letter is K.

- 56.** Two trains, 80 metres and 120 metres long, are running at the speed of 25 kmph and 35 kmph respectively in the same direction on parallel tracks. How many seconds will they take to pass each other?
- (a) 70 sec
 - (b) 72 sec
 - (c) 64 sec
 - (d) 50 sec

Ans: (b)

Expl:

Relative Speed = $35 - 25 = 10$ kmph (∵ they are moving in the same direction)

$$= 10 \times \frac{5}{18} \text{ m/s}$$

Total length = $80 + 120 = 200$ m

∴ Required time = $\frac{\text{Sum of the length of trains}}{\text{Relative Speed}}$

$$\frac{200}{\frac{10 \times 5}{18}} = \frac{200 \times 18}{10 \times 5} = 72 \text{ secs}$$

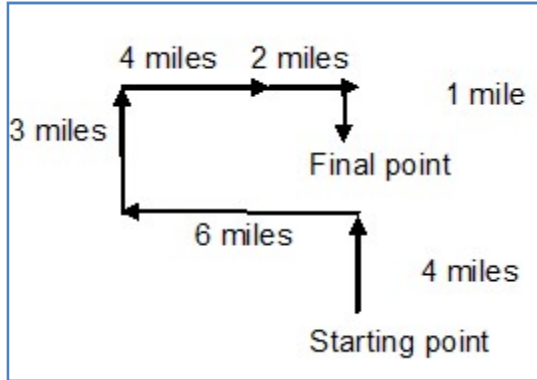
- 57.** A man starts from a point, walks 4 miles towards north and turns left and walks 6 miles, turns right and

walks for 3 miles and again turns right and walks 4 miles and takes rest for 30 minutes. He gets up and walks straight for 2 miles in the same direction and turns right and walks one mile. What is the direction he is facing?

- (a) North
- (b) South
- (c) South-East
- (d) West

Ans: (b)

Expl:



Thus, the man is facing south.

58. A doctor gave a patient 6 tablets and instructed him to take one tablet every 4 hours. If the patient took the first tablet at 4.00 A.M., when would he have taken the last tablet?

- (a) 4:00 p.m. the next day
- (b) 4:00 a.m. the next day
- (c) 12:00 noon the next day
- (d) None of the above

Ans: (d)

Expl:

- 1st tablet – 4:00 a.m.
- 2nd tablet – 8:00 a.m.
- 3rd tablet – 12 noon
- 4th tablet – 4:00 p.m.
- 5th tablet – 8:00 p.m.
- 6th tablet – 12:00 night

Thus, he will eat the last tablet at 12:00 am the same night.

59. It was 9:35 a.m. in Rakhi's watch, which kept correct time, when Reena informed her that the last bus left the bus stop at 9:25 a.m. Reena's watch is 5 minutes fast. The frequency of the bus is every 20 minutes. For how long must Rakhi wait to catch the next bus?

- (a) 5 minutes
- (b) 10 minutes
- (c) 15 minutes
- (d) None of the above

Ans: (a)

Expl:

The last bus left at 9:25 a.m. by Reena's watch.

∴ The bus left at $(9:25 - 0.05) = 9:20$ a.m.

Correct time

∴ Next bus will leave at $(9:20 + 0.20) = 9:40$ a.m.

∴ Rakhi must wait for $(9:40 - 9:35) = 5$ minutes.

60. If $ABC \times DEED = ABCABC$; where A, B, C, D and E are different digits, what are the values of D and E?

- (a) D = 2, E = 0
- (b) D = 0, E = 1
- (c) D = 1, E = 0
- (d) D = 1, E = 2

Ans: (c)

Expl:

$$ABC \times DEED = ABCABC$$

Let

$$A = 4$$

$$B = 3$$

$$C = 2$$

$$D = 1$$

$$E = 0$$

$$\text{Then } 432 \times 1001 = 432432$$

∴ D = 1, E = 0

Directions for the following three (3) items: Read the following passage and answer the items that follow passage. Your answers to these items should be based on the passage only.

PASSAGE-7

What are the sources of nutrients causing eutrophication of lakes and reservoirs? All activities in the entire drainage area of a lake or reservoir are reflected directly or indirectly in the water quality of these water bodies. A lake or reservoir may, however, be naturally eutrophied when situated in a fertile area with naturally nutrient enriched soils. In many lakes and reservoirs waste-water is the main source since untreated waste-water or waste-water treated only by conventional mechanical- biological methods still contains nitrogen and phosphorus.

Both nitrogen and phosphorus can be removed by well-known technology - phosphorus by addition of a chemical that precipitates phosphate through a chemical reaction, and nitrogen usually by biological means through micro-organism activity. Nitrogen costs more money and also, technically speaking, is more difficult to remove than phosphorus. Drainage water from agricultural land also contains phosphorus and nitrogen. Extensive use of fertilizers results in significant concentrations of nutrients particularly nitrogen, in agricultural runoff. If eroded soil reaches the lake, both phosphorus and the nitrogen in the soil contribute to eutrophication.

Wetlands are increasingly used to solve the problem of diffuse pollution from agriculture, which cause eutrophication.

Nitrate is converted in wetlands to free nitrogen and released to the air. This is not harmful, as free nitrogen comprises about 4/5th of the atmosphere. Phosphorus is absorbed by wetland soils and, like nitrogen, is taken up by the plants. Both nitrogen and phosphorus may therefore be removed by wetlands. In addition, it is often also necessary to control fertilizer usage in agricultural practices as the majority may end up in the drainage area, if the diffuse pollution from nutrients is to be reduced sufficiently to improve water quality.

Rainwater contains phosphorus and nitrogen from air pollution. As nitrogen is more mobile in the atmosphere than phosphorus, it is usually over 20 times more concentrated than phosphorus. Nitrogen can only be reduced in rainwater by extensive controls of the air pollution in the entire region. One can safely say that the main sources of pollution in the atmosphere are from industries and automobile exhaust without proper filtering systems. When lakes are used for aquaculture, excess fish food pollutes the water, as complete use of the food cannot be achieved. Nitrogen and phosphorus present in the excess food is dissolved or suspended in the water. The sediment of a lake - its muddy bottom layer - contains relatively high concentrations of nitrogen and phosphorus. The nutrients in the sediment come from the past settling of algae and dead organic matter. The nutrients released from sediments are referred to as the lake's internal loading.

- 61.** According to the passage, what are the sources of nutrients causing eutrophication of lakes and reservoirs?
- (1) External waste-water
 - (2) Agricultural drainage water
 - (3) Erosion and rain

- (4) Aquaculture and sediment release
 Select the correct answer using the code given below:
 (a) 1 only
 (b) 1 and 2 only
 (c) 1, 2 and 3 only
 (d) 1, 2, 3 and 4

Answer: (d)

Explanation:

Statement 1 is vindicated by, "In many lakes and reservoirs waste-water is the main source since untreated waste-water ...".

Statement 2 is vindicated by, "Drainage water from agricultural land also contains phosphorus and nitrogen."

Statement 3 is vindicated by, "If eroded soil reaches the lake, both phosphorus and the nitrogen in the soil contribute to eutrophication." and "Rainwater contains phosphorus and nitrogen from air pollution."

Statement 4 is vindicated by, "When lakes are used for aquaculture, excess fish food pollutes the water ..." and "The sediment of a lake - its muddy bottom layer - contains relatively high concentrations of nitrogen and phosphorus."

This eliminates options (a), (b) and (c). Hence, **the correct answer is option (d)**.

62. What is the central focus of the passage?
 (a) The use of lakes and reservoirs for aquaculture needs careful environmental planning and management practices.
 (b) The classification of lakes and reservoirs according to the extent of their eutrophication.

- (c) Determining which nutrient can be made limiting with respect to eutrophication of lakes and reservoirs.
 (d) The source of nutrients and how they cause eutrophication of lakes and reservoirs.

Answer: (d)

Explanation:

The question at the beginning of the passage - "What are the sources of nutrients causing eutrophication of lakes and reservoirs?" supports option (d) as the correct answer and also pinpoints on the focus of the passage.

There is no data in the passage to support the other options.

Hence, **the correct answer is option (d)**.

63. With reference to the passage the following assumptions have been made:
 (1) Eutrophication may be a type of water pollution.
 (2) Lakes' internal loading is not directly caused by human activities.
 Which of the assumptions given above is/are valid?
 (a) 1 only
 (b) 2 only
 (c) Both 1 and 2
 (d) Neither 1 nor 2

Answer: (c)

Explanation:

The entire passage talks about eutrophication (excessive nutrients) as undesirable and something that ought to be controlled as far possible as it is caused by human activities like release of waste water, use of fertilizers, air pollution etc. There seems to be almost no difference between water pollution

and eutrophication. Hence, statement (1) is a valid assumption.

Statement (2) is supported as a valid assumption by - "The nutrients in the sediment come from the past settling of algae and dead organic matter. The nutrients released from sediments are referred to as the lake's internal loading". This eliminates options (a), (b) and (d). Hence, the correct answer is option (c).

Directions for the following three (3) items: Read the following passage and answer the items that follow. Your answers to these items should be based on the passage only.

PASSAGE-8

Developments in the international and domestic sector in recent years imply a significant increase in the risks affecting institutions. If left uncontrolled, these risks may have adverse implications for the ongoing abilities of those institutions. The Board of Directors should be aware of the importance of corporate governance and its impact on corporate performance. An institution's Board of Directors ultimately is responsible for the performance of the institution. As such, the Board of Directors typically supervises to ensure that an institution is being properly governed and to bring to management's attention any problems detected through their supervisory efforts. When the institution takes risks that it cannot measure or control, the Board of Directors must hold the management accountable and require that corrective measures be taken in a timely manner. The Board of Directors and management of the institution must work together to ensure that the best interest of the institution is pursued at all times.

The role of auditors is vital to the corporate governance process. The effectiveness of the Board of Directors and management can be enhanced by (1) recognizing the importance of the internal and external audit process and communicating this importance throughout the institution; (2) utilizing, in a timely and effective manner, the findings of internal auditors; (3) engaging external auditors to judge the effectiveness of internal controls; and (4) requiring timely correction by management of problems identified by auditors.

Supervisors should be aware of the importance of corporate governance and its impact on corporate performance. Regulatory safeguards must emphasize accountability and transparency. Supervisors should determine that the boards and senior management of individual institutions have processes in place that ensure they are fulfilling all of their duties and responsibilities. They should consider issuing guidance to organisations on sound corporate governance and the pro-active practices that need to be in place. They also should take account of corporate governance issues in issuing guidance on other topics. Sound corporate governance considers the interests of all stakeholders including depositors, whose interest may not always be recognized. Therefore, supervisors must determine that individual organisations such as banks are conducting their business in a way that does not harm their depositors.

64. What is the central theme of the passage?
 (a) Achievement of objectives through corporate governance.

- (b) Importance of effective management in good corporate governance.
- (c) Implementation of effective corporate governance through careful monitoring.
- (d) The purpose of efficient corporate governance.

Answer: (c)

Explanation:

The passage mainly deals with the roles and functions of the Board of Directors, auditors and supervisors in collectively being influential in implementing an effective “corporate governance practice” through monitoring the performance of a corporation. **This points to option (c) as the correct answer.**

The achievement of a corporation's objectives has not been discussed in the passage. Eliminate option (a).

Though an important aspect, option (b) does not address the central theme of the passage.

Option (d) cannot be inferred with any degree of certainty from the passage.

Hence, **the correct answer is option (c).**

65. With reference to the passage, the following assumptions have been made:

- (1) The management of a corporation is equipped to handle risks.
- (2) Recognition and acknowledgement of internal and external auditors by the Board of Directors authorises them as crucial agents.

Which of the above is/are valid assumption(s)?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Answer: (a)

Explanation:

According to the passage, “When the institution takes risks that it cannot measure or control, the Board of Directors must hold the management accountable and require that corrective measures be taken in a timely manner.”.

This validates the assumption made in statement (1). Eliminate options (b) and (d).

Although the passage states that, “The effectiveness of the Board of Directors and management can be enhanced by (1) recognizing the importance of the internal and external audit process and communicating this importance throughout the institution...”, it does not stress on the importance of recognizing and acknowledging auditors. Hence, **statement (2) is not a valid assumption.** Eliminate option (c).

Hence, **the correct answer is option (a)**

66. According to the passage, which of the following could be the reasons for poor corporate governance practices?

- (1) Negligent supervision by the Board of Directors.
- (2) Lack of regulatory safeguards.
- (3) A dearth of safeguards to protect depositors.
- (4) Inadequate inspection by internal audit departments.

Select the correct answer using the code given below:

- (a) 1 and 3 only
- (b) 1, 2 and 3 only
- (c) 2 and 3 only
- (d) 1, 2, 3 and 4

Answer: (d)

Explanation:

All 4 statements are correct.

Statement (1) is supported by "...the Board of Directors typically supervises to ensure that an institution is being properly governed and to bring to management's attention any problems detected through their supervisory efforts.". Lack of supervision may result in poor corporate governance practice.

Statement (2) is supported by "Regulatory safeguards must emphasize accountability and transparency".

Statement (3) is supported by "Sound corporate governance considers the interests of all stakeholders including depositors, whose interest may not always be recognized. Therefore, supervisors must determine that individual organisations such as banks are conducting their business in a way that does not harm their depositors.". Lack of safeguards could result in poor corporate governance practice.

Statement (4) is supported by "...recognizing the importance of the internal and external audit process and communicating this importance throughout the institution...". There is emphasis on the vital role of auditors in the passage. The internal audit department is the first point of check for timely correction of problems. This eliminates options (a), (b) and (c).

Hence, **the correct answer is option (d).**

PASSAGE-9

The relationship between economic growth and the environment is, and may always remain, controversial. Some see the emergence of new pollution problems, the lack of success in dealing with global warming and the still rising population in the Third World as proof positive that humans are a short-sighted and rapacious species. Others however, see the glass as half full. They note the

tremendous progress made in providing urban sanitation, improvements in air quality in major cities and marvel at the continuing improvements in the human condition made possible by technological advance. The first group focuses on the remaining and often serious environmental problems of the day; the second on the long, but sometimes erratic, history of improvement in living standards. These views are not necessarily inconsistent and growth theory offers us the tools needed to explore the link between environmental problems of today and the likelihood of their improvement tomorrow. It allows us to clarify these conflicting views by use of theory, and when differences still remain, to create useful empirical tests that quantify relative magnitudes.

For many years, the limited natural resource base of the planet was viewed as the source of limits to growth. Now, however, it has become clear that limits to growth may not only arise from nature's finite source of raw materials, but instead from nature's limited ability to act as a sink for human waste. It is perhaps natural to think first of the environment as a source of raw materials, oil and valuable minerals. Nature's other role - its role as a sink for unwanted by-products of economic activity - has typically been given less attention. As a sink, nature dissipates harmful air, water and solid pollutants, is the final resting place for millions of tons of garbage, and is the unfortunate repository for many toxic chemicals. When the environment's ability to dissipate or absorb wastes is exceeded, environmental quality falls and the policy response to this reduction in quality may in turn limit growth. Growth may be limited because reductions in environmental quality call forth more intensive clean up or abatement efforts

that lower the return to investment, or more apocalyptically, growth may be limited when humans do such damage to the ecosystem that it deteriorates beyond repair and settles on a new lower, less productive steady state.

67. With reference to the passage, which of the following statements is correct?
- (a) Reductions in the availability of natural resources calls for lower investments in economic growth.
 - (b) Due to a limited resource base, nature loses its capacity to act as a sink for wastes.
 - (c) There has been an improvement in human standards of living due to technological progress.
 - (d) None of these

Answer: (c)

Explanation:

Option (a) distorts the data in the passage - "Growth may be limited because reductions in environmental quality call forth more intensive clean up or abatement efforts that lower the return to investment ...". The passage does not discuss "investments in economic growth", eliminating option a.

Option (b) incorrectly links the two unrelated fragments of the passage "... the limited natural resource base of the planet was viewed as the source of limits to growth." and "its role as a sink for unwanted by-products of economic activity - has typically been given less attention."

Option (c) can be inferred from "... the tremendous progress made in providing urban sanitation, improvements in air quality in major cities and marvel at the continuing improvements in the human

condition made possible by technological advance.", making it the correct choice. Hence, **the correct answer is option (c).**

68. One can reconcile the two conflicting views of the relationship between economic growth and the environment by:
- (1) Limiting economic growth in accordance to nature's capacity to absorb human waste.
 - (2) Determining the correlation between the present-day environmental issues and the scope for their abatement.
 - (3) Acknowledging the debatable nature of the relationship between economic well-being and nature.
 - (4) Empirically enumerating the differences between the progress and the challenges faced in improving economic growth.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 2 and 4 only

Answer: (d)

Explanation:

According to the passage, "...growth theory offers us the tools needed to explore the link between environmental problems of today and the likelihood of their improvement tomorrow." and "... allows us to clarify these conflicting views by use of theory, and when differences still remain, to create useful empirical tests that quantify relative magnitudes.". This is articulated in **statements (2) and (4), making them correct.**

Statement (1) which is mentioned in “When the environment's ability to dissipate or absorb waste is exceeded, environmental quality falls and the policy response to this reduction in quality may in turn limit growth.”, does not pertain to the two conflicting views mentioned in the question.

Statement (3) which uses the data from the passage - “The relationship between economic growth and the environment is, and may always remain, controversial”, does not qualify as a means to reconciling the two opposing points of view mentioned in the question. Hence, **the correct answer is option (d).**

69. Why do some people find it difficult to be optimistic about economic growth?

- (1) They perceive humans as uncontrollably greedy in their pursuit of economic growth.
- (2) The deterioration of natural resources beyond repair, leads to lower productivity.
- (3) The history of improvements in the human condition has been erratic and dubious.

Select the correct answer using the code given below:

- (a) 1 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Answer: (a)

Explanation:

According to the passage, “Some see the emergence of new pollution problems, the lack of success in dealing with global warming and the still rising population in the Third World as proof positive that humans are a short-sighted and rapacious species”. **This supports statement (1).**

Statement (2) is not cited in the context of a lack of optimism about economic growth - “growth may be limited when humans do such damage to the ecosystem that it deteriorates beyond repair and settles on a new lower, less productive steady state”.

Statement (3) is incorrect since the passage mentions “... the second on the long, but sometimes erratic, history of improvement in living standards”, but does not categorize these improvements as “dubious” or doubtful.

Hence, **the correct answer is option (a).**

70. Consider the following statements and the two statements that follow from it:

None but teachers use calculators.

- (1) John is a teacher and thus, he uses calculators.
- (2) Jack does not use calculators and thus, he is not a teacher.

Which of the statements follow from the main statement?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Answer: (d)

DIRECTIONS for Ques. 71 to 72 (2 items):

Read the information given in the table below and answer the questions that follow:

Department	No. of employees in different departments
IT	120
HR	180
Finance	160
Calling	200

Ratio of Male and Female in different departments

Department	Male	Female
IT	2	3
HR	1	5
Finance	3	1
Calling	3	7

71. Which among the following statement is *incorrect*?
- (a) The number of males in IT department is more than the number of females in Finance department.
- (b) The number of males in Finance and HR are equal to the number of females in HR.
- (c) The number of males in Finance department is five times the difference in the number of males and females in IT.
- (d) The total number of males working in Finance and Calling is less than the number of females working in Finance and Calling.

Ans: (d)

Expl:

Dept.	Total	Male	Female
IT	120	$\frac{2}{5} \times 120$ = 48	$\frac{3}{5} \times 120$ = 72
HR	180	$\frac{1}{6} \times 180$ = 30	$\frac{5}{6} \times 180$ = 150
Finance	160	$\frac{3}{4} \times 160$ = 120	$\frac{1}{4} \times 160$ = 40
Calling	200	$\frac{3}{10} \times 200$ = 60	$\frac{7}{10} \times 200$ = 140
Total	660	258	402

Number of males in IT is 48 which is greater than the number of females in

Finance which is 40, so statement (a) is correct.

Number of males in Finance and HR equals $30+120 = 150$ which is equal to the number of females in HR which is also 150, so statement (b) is correct.

Number of males in Finance is 120. Difference in number of males and females in IT is $72-48 = 24$. Now, 120 is five times 24 so statement (c) is correct.

According to statement (d), males working in Finance and Calling is $120 + 60 = 180$ which is equal to number of females working in Finance and Calling. So, **Statement (d) is incorrect.**

72. What is the difference between total number of males working in HR and Finance departments together and females working in Calling and IT departments together?
- (a) 62
(b) 85
(c) 120
(d) 105

Ans: (a)

Expl:

Females in Calling and IT = $140+72=212$
Males in HR and Finance Dept. = $30+120=150$.
So difference = $212-150=62$.

73. Piyush drove his car at a speed of 45 km/hr from home to a resort. Returning over the same route, he got stuck in traffic and took an hour longer. Also, he could drive only at the speed of 40 km/hr. How many kilometres did he drive each way?
- (a) 250 km
(b) 300 km
(c) 360 km
(d) 275 km

Ans: (c)

Expl:

Let distance from home to resort = x km
 \Rightarrow Time taken by Piyush from home to resort = $\frac{x}{45}$

\Rightarrow Time taken by him from resort to home = $\frac{x}{40}$

According to question,

$$\frac{x}{40} - \frac{x}{45} = 1$$

$\therefore x = 360$ km

- 74.** Mr. Shirke distributes the money he has among his 2 sons, 1 daughter and wife in such a way that each son gets double the amount of the daughter and the wife gets double the amount of each son. If each son gets Rs. 8,500, what was the total amount distributed?
- (a) Rs. 38,250
 (b) Rs. 34,250
 (c) Rs. 38,500
 (d) Rs. 34,500

Ans: (a)

Expl:

2 sons get = 8500×2
 = 17000

1 daughter gets = $8500 / 2 = 4250$

Wife gets = $8500 \times 2 = 17000$

Thus, total = $17000 + 4250 + 17000 = 38250$

- 75.** Among P, Q, R, S, T and U, R is taller than only P and U. S is shorter than only T and Q. If each of them has a different height who among will be the third from top when they are arranged in descending order of their height?
- (a) R
 (b) P
 (c) S
 (d) Q

Ans: (c)

Expl:

Since S is shorter than only two persons (T and Q), he must be the third in the descending order of height.

- 76.** On a railway route between two places A and B, there are 10 stations on the way. If 5 new stations are to be added, how many types of new tickets will be required if each ticket is issued for a one way journey?
- (a) 15
 (b) 140
 (c) 70
 (d) 152

Ans: (b)

Expl:

10 stations between A and B

\therefore Total number of stations = $10+2 = 12$

Number of ticket for 12 stations = $12P_2 = 12 \times 11 = 132$

When 5 new stations are added, then total number of stations = $12 + 5 = 17$

Number of ticket for 17 stations

= $17P_2 = 17 \times 16 = 272$

\therefore Number of new tickets = $272 - 132 = 140$

DIRECTIONS for Ques. 77 to 80 (4 items):

Study the following information carefully to answer these questions:

Eight members A, B, C, D, E, F, G and H belonging to three families X, Y and Z go for weekend outings in three different cars I, II and III. Four out of the eight members are females. Members of one family travel in different cars. Each car has at least one male and one female member. Each family has at least two members.

A belongs to family Y and travels in Car III. D is the wife of E and they travel in car I and II respectively. H is son of B,

who is wife of G and they belong to family Z. C is daughter of F, who is wife of A. C travels in car II. G does not travel with F.

(-) refers family

77. Which of the following groups of persons travels in Car I?

- (a) D, F, G
- (b) D, E, G
- (c) D, G, H
- (d) D, F, H

Ans: (d)

78. Which car has only two members travelling in it?

- (a) I
- (b) II
- (c) III
- (d) None of these

Ans: (c)

79. Which of the following members of families Y and Z travel in different cars?

- (a) F, G
- (b) C, G
- (c) F, H
- (d) C, F

Ans: (a)

80. Which of the following group of persons is a group of all females?

- (a) B, D, G
- (b) A, B, C
- (c) B, E, F
- (d) D, C, B

Ans: (d)

Expl:

Car I – D₍₋₎(X), F₍₋₎(Y) H₍₊₎(Z)

Car II – E₍₊₎(X), C₍₋₎(y) G₍₊₎(Z)

Car III – A₍₊₎(Y) B₍₋₎(Z)

PN (-) refers female

(+) refers male