Prepp

Your Personal Exams Guide

NDA	CDS	SSC CGL	CBSE UGC NET
IAS	SSC CHSL	CTET	MPSC
AFCAT	CSIR UDC NET	IBPS PO	UP POLICE
SSC MTS	SBI PO	BPSC	UPTET
IBPS RRB	IBPS CLERK	IES	UPSC CAPF
SSC Stenogr..	RRB NTPC	SSC GD	RBI GRADE B
RBI Assistant	DSSSB		

UPSC CSE 2022 (Prelims Paper-2: CSAT) Previous Year Paper (05-Jun-2022)

Total Time: 2 Hour   **Total Marks:** 160

Instructions

Sl No.	Section Name	No. of Question	Maximum Marks
1	Part B	80	160

1.) A total of 120 minutes is allotted for the examination.

2.) The server will set your clock for you. In the top right corner of your screen, a countdown timer will display the remaining time for you to complete the exam. Once the timer reaches zero, the examination will end automatically. The paper need not be submitted when your timer reaches zero.

3.) There will, however, be sectional timing for this exam. You will have to complete each section within the specified time limit. Before moving on to the next section, you must complete the current one within the time limits.

Your Personal Exams Guide

Part B

1. Read the following passages and answer the items that follow the passages. Your answers to these items should be based on the passages only.   (+2, -0.67)

The main threat to maintaining progress in human development comes from the increasingly evident unsustainability of production and consumption patterns. Current production models rely heavily on fossil fuels. We now know that this is unsustainable because the resources are finite. The close link between economic growth and greenhouse gas emissions needs to be severed for human development to become truly sustainable. Some developed countries have begun to alleviate the worst effects by expanding recycling and investing in public transport and infra-structure. But most developing countries are hampered by the high costs and low availability of clean energy sources. Developed countries need to support developing countries' transition to sustainable human development.

   Unsustainability in production pattern is due to which of the following ?

   1. Heavy dependence on fossil fuels

   2. Limited availability of resources

   3. Expansion of recycling

   Select the correct answer using the code given below.

   a. 1 and 2 only

   b. 2 only

   c. 1 and 3 only

   d. 1, 2 and 3

2. Read the following passages and answer the items that follow the passages. Your answers to these items should be based on the passages only.   (+2, -0.67)

The main threat to maintaining progress in human development comes from the increasingly evident unsustainability of production and consumption patterns. Current production models rely heavily on fossil fuels. We now know that this is unsustainable because the resources are finite. The close link between economic growth and greenhouse gas emissions needs to be severed for human development to become truly sustainable. Some developed countries have begun to alleviate the worst effects by expanding recycling and investing in public transport and infra-structure. But most developing countries are hampered by the high costs and low availability of clean energy sources. Developed countries need to support developing countries' transition to sustainable human development.

Consider the following statements :

Developed countries can support developing countries' transition to sustainable human development by

1. making clean energy sources available at low cost

2. providing loans for improving their public transport at nominal interest rates

3. encouraging them to change their production and consumption patterns

Which of the statements given above is / are correct?

a. 1 only

b. 1 and 2 only

c. 2 and 3 only

d. 1, 2 and 3

---

3. Read the following passages and answer the items that follow the passages. Your answers to these items should be based on the passages only.   (+2, -0.67)

Unless the forces and tendencies which are responsible for destroying the country's environment are checked in the near future and afforestation of denuded areas is taken up on a massive scale, the harshness of the climatic conditions and soil erosion by wind and water will increase to such an extent that agriculture, which is the mainstay of our people, will gradually become impossible. The desert countries of the world and our own desert areas in Rajasthan are a grim reminder of the consequences of large-scale deforestation. Pockets of desert-like landscape are now appearing in other parts of the country including the Sutlej-Ganga Plains and the Deccan Plateau. Where only a few decades back there used to be lush green forests with perennial streams and springs, there is only brown earth, bare of vegetation, without any water in the streams and springs except in the rainy season.

According to the passage given above, deforestation and denudation will ultimately lead to which of the following?

1. Depletion of soil resource

2. Shortage of land for the common man

3. Lack of water for cultivation

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

4. What is the value of *X* in the sequence 20, 10, 10, 15, 30, 75, *X*?   (+2, -0.67)

   a. 105

   b. 120

   c. 150

   d. 225

5. An Identity Card has the number ABCDEFG, not necessarily in that order,   (+2, -0.67)
   where each letter represents a distinct digit (1, 2, 4, 5, 7, 8, 9 only). The
   number is divisible by 9. After deleting the first digit from the right, the
   resulting number is divisible by 6. After deleting two digits from the right of
   original number, the resulting number is divisible by 5. After deleting three
   digits from the right of original number, the resulting number is divisible
   by 4. After deleting four digits from the right of original number, the
   resulting number is divisible by 3. After deleting five digits from the right of
   original number, the resulting number is divisible by 2. Which of the
   following is a possible value for the sum of the middle three digits of the
   number?

   a. 8

   b. 9

   c. 11

   d. 12

6. Two friends *X* and *Y* start running and they run together for 50 m in the   (+2, -0.67)
   same direction and reach a point. *X* turns right and runs 60 m, while *Y* turns
   left and runs 40 m. Then *X* turns left and runs 50 m and stops, while *Y* turns

right and runs 50 m and then stops. How far are the two friends from each other now?

a. 100 m

b. 90 m

c. 60 m

d. 50 m

---

7. Which date of June 2099 among the following is Sunday if 5 June 2022 is Sunday?   (+2, -0.67)

a. 4

b. 5

c. 6

d. 7

---

8. A bill for ₹1,840 is paid in the denominations of ₹50, ₹20 and ₹10 notes. 50 notes in all are used. Consider the following statements :   (+2, -0.67)

1. 25 notes of ₹50 are used and the remaining are in the denominations of ₹20 and ₹10.

2. 35 notes of ₹20 are used and the remaining are in the denominations of ₹50 and ₹10.

3. 20 notes of ₹10 are used and the remaining are in the denominations of ₹50 and ₹20.

Which of the above statements are *not* correct?

a. 1 and 2 only

b. 2 and 3 only

c. 1 and 3 only

d. 1, 2 and 3

---

9. Which number amongst 2^{40}, 3^{21}, 4^{18} and 8^{12} is the smallest?   (+2, −0.67)

a. 2^{40}

b. 3^{21}

c. 4^{18}

d. 8^{12}

---

10. The digits 1 to 9 are arranged in three rows in such a way that each row   (+2, −0.67)
contains three digits, and the number formed in the second row is twice
the number formed in the first row; and the number formed in the third
row is thrice the number formed in the first row. Repetition of digits is not
allowed. If only three of the four digits 2, 3, 7 and 9 are allowed to use in
the first row, how many such combinations are possible to be arranged in
the three rows?

a. 4

b. 3

c. 2

d. 1

---

11. Read the following passages and answer the items that follow the passages. Your answers to these items should be based on the passages only. (+2, -0.67)

"In simple matters like shoe-making, we think only a specially trained person will serve our purpose, but in politics, we presume that everyone who knows how to get votes knows how to administer a State. When we are ill, we call for a trained physician, whose degree is a guarantee of specific preparation and technical competence–we do not ask for the handsomest physician, or the most eloquent one : well then, when the whole State is ill should we not look for the service and guidance of the wisest and the best?"

Which one of the following statements best reflects the message of the author of the passage?

a. We assume that in a democracy, any politician is qualified to administer a State.

b. Politicians should be selected from those trained in administration.

c. We need to devise a method of barring incompetence from public office.

d. As voters select their administrators, the eligibility of politicians to administer a State cannot be questioned.

---

12. Read the following passages and answer the items that follow the passages. Your answers to these items should be based on the passages only. (+2, -0.67)

The poverty line is quite unsatisfactory when it comes to grasping the extent of poverty in India. It is not only because of its extremely narrow definition of 'who is poor' and the debatable methodology used to count the poor, but also because of a more fundamental assumption

underlying it. It exclusively relies on the notion of poverty as insufficient income or insufficient purchasing power. One can better categorize it by calling it income poverty. If poverty is ultimately about deprivations affecting human well-being, then income poverty is only one aspect of it. Poverty of a life, in our view, lies not merely in the impoverished state in which the person actually lives, but also in the lack of real opportunity given by social constraints as well as personal circumstances–to choose other types of living. Even the relevance of low incomes, meagre possessions, and other aspects of what are standardly seen as economic poverty relate ultimately to their role in curtailing capabilities, i.e., their role in severely restricting the choices people have to lead variable and valued lives.

Why is the methodology adopted in India to count the 'poor' debatable?

a. There is some confusion regarding what should constitute the 'poverty line'.

b. There are wide diversities in the condition of the rural and urban poor.

c. There is no uniform global standard for measuring income poverty.

d. It is based on the proposition of poverty as meagre income or buying capacity.

---

13. Read the following passages and answer the items that follow the passages. Your answers to these items should be based on the passages only. (+2, –0.67)

The poverty line is quite unsatisfactory when it comes to grasping the extent of poverty in India. It is not only because of its extremely narrow definition of 'who is poor' and the debatable methodology used to count the poor, but also because of a more fundamental assumption underlying it. It exclusively relies on the notion of poverty as insufficient

income or insufficient purchasing power. One can better categorize it by calling it income poverty. If poverty is ultimately about deprivations affecting human well-being, then income poverty is only one aspect of it. Poverty of a life, in our view, lies not merely in the impoverished state in which the person actually lives, but also in the lack of real opportunity given by social constraints as well as personal circumstances–to choose other types of living. Even the relevance of low incomes, meagre possessions, and other aspects of what are standardly seen as economic poverty relate ultimately to their role in curtailing capabilities, i.e., their role in severely restricting the choices people have to lead variable and valued lives.

Why is income poverty only one measure of counting the 'poor'?

a. It talks of only one kind of deprivation ignoring all others.

b. Other deprivations in a human life have nothing to do with lack of purchasing power.

c. Income poverty is not a permanent condition, it changes from time to time.

d. Income poverty restricts human choices only at a point of time.

14. Read the following passages and answer the items that follow the passages. Your answers to these items should be based on the passages only. (+2, -0.67)

The poverty line is quite unsatisfactory when it comes to grasping the extent of poverty in India. It is not only because of its extremely narrow definition of 'who is poor' and the debatable methodology used to count the poor, but also because of a more fundamental assumption underlying it. It exclusively relies on the notion of poverty as insufficient income or insufficient purchasing power. One can better categorize it by calling it income poverty. If poverty is ultimately about deprivations

affecting human well-being, then income poverty is only one aspect of it. Poverty of a life, in our view, lies not merely in the impoverished state in which the person actually lives, but also in the lack of real opportunity given by social constraints as well as personal circumstances–to choose other types of living. Even the relevance of low incomes, meagre possessions, and other aspects of what are standardly seen as economic poverty relate ultimately to their role in curtailing capabilities, i.e., their role in severely restricting the choices people have to lead variable and valued lives.

What does the author mean by 'poverty of a life'?

a. All deprivations in a human life which stem not only from lack of income but lack of real opportunities

b. Impoverished state of poor people in rural and urban areas

c. Missed opportunities in diverse personal circumstances

d. Material as well as non-material deprivations in a human life which restrict human choices permanently

---

15. *X* and *Y* run a 3 km race along a circular course of length 300 m. Their speeds are in the ratio 3 : 2. If they start together in the same direction, how many times would the first one pass the other (the start-off is not counted as passing)? (+2, -0.67)

a. 2

b. 3

c. 4

d. 5

---

16. If the order of the letters in the English alphabet is reversed and each letter represents the letter whose position it occupies, then which one of the following represents 'LUCKNOW'? **(+2, -0.67)**

   a. OGXPMLD

   b. OGXQMLE

   c. OFXPMLE

   d. OFXPMLD

17. In a tournament of Chess having 150 entrants, a player is eliminated whenever he loses a match. It is given that no match results in a tie/draw. How many matches are played in the entire tournament? **(+2, -0.67)**

   a. 151

   b. 150

   c. 149

   d. 148

18. How many 3-digit natural numbers (without repetition of digits) are there such that each digit is odd and the number is divisible by 5? **(+2, -0.67)**

   a. 8

   b. 12

   c. 16

   d. 24

19. Consider the Question and two Statements given below : **(+2, -0.67)**

Question : Is x an integer?

Statement-1 : $x\,/\,3$ is not an integer.

Statement-2 : $3x$ is an integer.

Which one of the following is correct in respect of the Question and the Statements?

a. Statement–1 alone is sufficient to answer the Question

b. Statement–2 alone is sufficient to answer the Question

c. Both Statement – 1 and Statement – 2 are sufficient to answer the Question

d. Both Statement – 1 and Statement – 2 are not sufficient to answer the Question

20. The increase in the price of a certain item was 25%. Then the price was decreased by 20% and then again increased by 10%. What is the resultant increase in the price? **(+2, -0.67)**

a. 5%

b. 10%

c. 12.5%

d. 15%

21. The letters A, B, C, D and E are arranged in such a way that there are exactly two letters between A and E. How many such arrangements are **(+2, -0.67)**

possible?

a. 12

b. 18

c. 24

d. 36

---

22. Consider the Question and two Statements given below: **(+2, -0.67)**

Question : Is *Z* brother of *X*?

Statement-1 : X is a brother of Y and Y is a brother of Z.

Statement-2 : X, Y and Z are siblings.

Which one of the following is correct in respect of the Question and the Statements?

a. Statement-1 alone is sufficient to answer the Question

b. Statement-2 alone is sufficient to answer the Question

c. Both Statement-1 and Statement-2 are sufficient to answer the Question

d. Both Statement-1 and Statement-2 are not sufficient to answer the Question

---

23. On one side of a 1·01 km long road, 101 plants are planted at equal distance from each other. What is the total distance between 5 consecutive plants? **(+2, -0.67)**

a. 40 m

b. 40·4 m

c. 50 m

d. 50 · 5 m

---

24. *A, B* and *C* are three places such that there are three different roads from *A* to *B*, four different roads from *B* to *C* and three different roads from *A* to *C*. In how many different ways can one travel from *A* to *C* using these roads?   **(+2, −0.67)**

   a. 10

   b. 13

   c. 15

   d. 36

---

25. A has some coins. He gives half of the coins and 2 more to *B*. *B* gives half of the coins and 2 more to *C*. *C* gives half of the coins and 2 more to *D*. The number of coins *D* has now, is the smallest two-digit number. How many coins does *A* have in the beginning?   **(+2, −0.67)**

   a. 76

   b. 68

   c. 60

   d. 52

---

26. In the series AABABCABCDABCDE..., which letter appears at the 100th place?   **(+2, −0.67)**

a. G

b. H

c. I

d. J

---

27. Three persons *A, B* and *C* are standing in a queue not necessarily in the same order. There are 4 persons between *A* and *B*, and 7 persons between *B* and *C*. If there are 11 persons ahead of *C* and 13 behind *A*, what could be the minimum number of persons in the queue? (+2, -0.67)

a. 22

b. 28

c. 32

d. 38

---

28. Read the following passages and answer the items that follow the passages. Your answers to these items should be based on the passages only (+2, -0.67)

With steady economic growth, higher literacy and increasing skill levels, the number of Indian middle-class families has gone up exponentially. Direct results of the affluence have been changes in dietary patterns and energy consumption levels. People have moved to a higher protein-based diet like milk products, fish and meat, all of which need significantly more water to produce than cereal-based diets. Increasing use of electronic and electric machines/gadgets and motor vehicles needs more and more energy and generation of energy needs water.

Which one of the following statements best reflects the crux of the passage?

a. People should be persuaded to continue with the mainly Indian traditional cereal-based diets.

b. India needs to focus on developing agricultural productivity and capacity for more energy generation in the coming years.

c. Modern technological developments result in the change of cultural and social behaviour of the people.

d. Water management practices in India need to change dramatically in the coming years.

---

29. How many seconds in total are there in x weeks, x days, x hours, x minutes and x seconds? **(+2, -0.67)**

a. 11580 x

b. 11581 x

c. 694860 x

d. 694861 x

---

30. P, Q, R, S, T and U are six members of a family. R is the spouse of Q. U is the mother of T and S is the daughter of U. P's daughter is T and R's son is P. There are two couples in the family. Which one of the following is correct? **(+2, -0.67)**

a. Q is the grandfather of T

b. Q is the grandmother of T

c. R is the mother of P

d. *T* is the granddaughter of *Q*

---

31. Consider the Question and two Statements given below in respect of three cities *P*, *Q* and *R* in a State :   (+2, -0.67)

Question : How far is city *P* from city *Q*?

Statement – 1 : City *Q* is 18 km from city *R*.

Statement – 2 : City *P* is 43 km from city *R*.

Which one of the following is correct in respect of the Question and the Statements?

a. Statement–1 alone is sufficient to answer the Question

b. Statement – 2 alone is sufficient to answer the Question

c. Both Statement – 1 and Statement-2 are sufficient to answer the Question

d. Both Statement – 1 and Statement – 2 are not sufficient to answer the Question

---

32. Two Statements followed by four Conclusions are given below. You have to take the Statements to be true even if they seem to be at variance from the commonly known facts. Read all the Conclusions and then decide which of the given Conclusions logically follows/ follow from the Statements, disregarding the commonly known facts :   (+2, -0.67)

Statement-1 : All pens are books.

Statement-2 : No chair is a pen.

Conclusion-I : All chairs are books.

Conclusion-II : Some chairs are pens.

Conclusion-III : All books are chairs.

Conclusion-IV : No chair is a book.

Which one of the following is correct?

a. Only Conclusion-I

b. Only Conclusion-II

c. Both Conclusion-III and Conclusion-IV

d. None of the Conclusions follows

---

33. Three Statements followed by three Conclusions are given below. You
    have to take the Statements to be true even if they seem to be at
    variance from the commonly known facts. Read all the Conclusions and
    then decide which of the given Conclusions logically follows/ follow from
    the Statements, disregarding the commonly known facts: (+2, -0.67)

    Statement-1 : Some doctors are teachers.

    Statement-2 : All teachers are engineers.

    Statement-3 : All engineers are scientists.

    Conclusion-I : Some scientists are doctors.

    Conclusion-II : All engineers are doctors.

    Conclusion-III : Some engineers are doctors.

    Which one of the following is correct?

    a. Only Conclusion-I

    b. Only Conclusion-II

c. Both Conclusion-I and Conclusion-III

d. Both Conclusion-I and Conclusion-II

---

34. Eight students *A, B, C, D, E, F, G* and *H* sit around a circular table, equidistant from each other, facing the centre of the table, not necessarily in the same order. *B* and *D* sit neither adjacent to *C* nor opposite to *C*. *A* sits in between *E* and *D*, and *F* sits in between *B* and *H*. Which one of the following is definitely correct?

(+2, -0.67)

a. *B* sits in between *A* and *G*

b. *C* sits opposite to *G*

c. *E* sits opposite to *F*

d. None of the above

---

35. Read the following passages and answer the items that follow the passages. Your answers to these items should be based on the passages only.

(+2, -0.67)

For two or three generations past, ever-increasing numbers of individuals have been living as workers merely, not as human beings. An excessive amount of labour is rule today in every circle of society, with the result that man's spiritual element cannot thrive. He finds it very difficult to spend his little leisure in serious activities. He does not want to think; or he cannot even if he wants to. He seeks not self-improvement, but entertainment which would enable him to be mentally idle and to forget his usual activities. Therefore, the so-called culture of our age is dependant more on cinema than on theatre, more on newspapers, magazines and crime stories than on serious literature.

The passage is based on the idea that,

a. man should not work hard

b. the great evil of our age is overstrain

c. man cannot think well

d. man cannot care for his spiritual welfare

---

36. Read the following passages and answer the items that follow the passages. Your answers to these items should be based on the passages only.   (+2, -0.67)

For two or three generations past, ever- increasing numbers of individuals have been living as workers merely, not as human beings. An excessive amount of labour is rule today in every circle of society, with the result that man's spiritual element cannot thrive. He finds it very difficult to spend his little leisure in serious activities. He does not want to think; or he cannot even if he wants to. He seeks not self-improvement, but entertainment which would enable him to be mentally idle and to forget his usual activities. Therefore, the so-called culture of our age is dependant more on cinema than on theatre, more on newspapers, magazines and crime stories than on serious literature.

Man does not seek self-improvement because he

a. is not intellectually capable

b. has no time to do so

c. is distracted by materialism

d. loves amusement and is mentally idle

---

37. Read the following passages and answer the items that follow the passages. Your answers to these items should be based on the   (+2, -0.67)

passages only.

The demographic dividend, which has begun in India and is expected to last another few decades, is a great window of opportunity. The demographic dividend is basically a swelling in the working age population, which conversely means that the relative ratio of very young and very old will, for a while, be on the decline. From the experience of Ireland and China, we know that this can be a source of energy and an engine of economic growth. The demographic dividend tends to raise a nation's savings rate since in any nation, it is the working age population that is the main saver. And since the savings rate is an important driver of growth, this should help elevate our growth rate. However, the benefits of demographic dividend depend on the quality of the working age population. And this implies bringing back the importance of education, acquisition of skills and human capital.

Which of the following would invariably happen in a country, when the demographic dividend has begun to operate?

1. The number of illiterate people will decrease.

2. The ratio of very old and very young will decrease for a while.

3. Population growth rate will quickly stabilize.

Select the correct answer using the code given below.

a. 1 and 2 only

b. 2 only

c. 1 and 3 only

d. 1, 2 and 3

38. Read the following passages and answer the items that follow the passages. Your answers to these items should be based on the   (+2, -0.67)

passages only.

The demographic dividend, which has begun in India and is expected to last another few decades, is a great window of opportunity. The demographic dividend is basically a swelling in the working age population, which conversely means that the relative ratio of very young and very old will, for a while, be on the decline. From the experience of Ireland and China, we know that this can be a source of energy and an engine of economic growth. The demographic dividend tends to raise a nation's savings rate since in any nation, it is the working age population that is the main saver. And since the savings rate is an important driver of growth, this should help elevate our growth rate. However, the benefits of demographic dividend depend on the quality of the working age population. And this implies bringing back the importance of education, acquisition of skills and human capital.

With reference to the passage, which of the following inferences can be drawn?

1. Demographic dividend is an essential condition for a country to rapidly increase its economic growth rate.

2. Promotion of higher education is an essential condition for a country for its rapid economic growth.

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

39. Five friends *P, Q, X, Y and Z* purchased some notebooks. The relevant information is given below: **(+2, -0.67)**

1. *Z* purchased 8 notebooks more than *X* did.

2. *P* and *Q* together purchased 21 notebooks.

3. *Q* purchased 5 notebooks less than *P* did.

4. *X* and *Y* together purchased 28 notebooks.

5. *P* purchased 5 notebooks more than *X* did.

If each notebook is priced ₹40, then what is the total cost of all the notebooks?

a. ₹ 2,600

b. ₹ 2,400

c. ₹ 2,360

d. ₹ 2,320

40. A man started from home at 14:30 hours and drove to village, arriving there when the village clock indicated 15:15 hours. After staying for 25 minutes, he drove back by a different route of length 1·25 times the first route at a rate twice as fast reaching home at 16:00 hours. As compared to the clock at home, the village clock is   **(+2, -0.67)**

a. 10 minutes slow

b. 5 minutes slow

c. 10 minutes fast

d. 5 minutes fast

41. A person *X* wants to distribute some pens among six children *A, B, C, D, E,* and *F*. Suppose *A* gets twice the number of pens received by *B*, three times that of *C*, four times that of *D*, five times that of *E* and six times that of *F*. What is the minimum number of pens *X* should buy so that the number of pens each one gets is an even number?

(+2, -0.67)

   a. 147

   b. 150

   c. 294

   d. 300

42. Six persons *A, B, C, D, E* and *F* are sitting equidistant from each other around a circular table (facing the centre of the table).

(+2, -0.67)

   Consider the Question and two Statements given below :

   Question : Who is sitting on the immediate left of *A*?

   Statement-1 : *B* is sitting opposite to *C* and *D* is sitting opposite to *E*.

   Statement-2 : *F* is sitting on the immediate left of *B*.

   Which one of the following is correct in respect of the Question and the Statements?

   a. Statement-1 alone is sufficient to answer the Question

   b. Statement-2 alone is sufficient to answer the Question

   c. Both Statement-1 and Statement-2 are sufficient to answer the Question

d. Both Statement-1 and Statement-2 are not sufficient to answer the Question

---

43. Consider the Question and two Statements given below: **(+2, -0.67)**

Question : What is the age of Manisha?

Statement-1: Manisha is 24 years younger than her mother.

Statement-2 : 5 years later, the ages of Manisha and her mother will be in the ratio 3 : 5.

Which one of the following is correct in respect of the Question and the Statements?

a. Statement-1 alone is sufficient to answer the Question

b. Statement-2 alone is sufficient to answer the Question

c. Both Statement-1 and Statement-2 are sufficient to answer the Question

d. Both Statement-1 and Statement-2 are not sufficient to answer the Question

---

44. Six lectures A, B, C, D, E and F, each of one hour duration, scheduled between 8:00 am and 2:00 pm **(+2, -0.67)**

Consider the following question and two statements:

Question: Which lecture is in the third period?

Statement-1: Lecture F is *preceded* by A followed by C.

Statement-2: No lecture after lecture B.

Which of the following is correct regarding the question and the statements?

a. Statement-1 alone is sufficient to answer the question

b. Statement-2 alone is sufficient to answer the question.

c. Both statement-1 and statement-2 are sufficient to answer the question

d. Both statement-1 and statement-2 are not sufficient to answer the question

---

45. Read the following passages and answer the items that follow the passages. Your answers to these items should be based on the passages only.

(+2, -0.67)

In an economic organization, allowing mankind to benefit by the productivity of machines should lead to a very good life of leisure, and much leisure is apt to be tedious except to those who have intelligent activities and interests. If a leisured population is to be happy, it must be an educated population, and must be educated with a view to enjoyment as well as to the direct usefulness of technical knowledge.

Which of the following statements best reflects the underlying tone of the passage?

a. Only an educated population can best make use of the benefits of economic progress.

b. All economic development should be aimed at the creation of leisure.

c. An increase in the educated population of a country leads to an increase in the happiness of its people.

    d. Use of machines should be encouraged in order to create a large leisured population.

---

46. Read the following passages and answer the items that follow the passages. Your answers to these items should be based on the passages only.   **(+2, -0.67)**

If presents bring less thrill now that we are grown up, perhaps it is because we have too much already; or perhaps it is because we have lost the fullness of the joy of giving, and with it the fullness of the joy of receiving. Children's fears are poignant, their miseries are acute, but they do not look too forward nor too far backward. Their joys are clear and complete, because they have not yet learnt always to add 'but' to every proposition. Perhaps we are too cautious, too anxious, too sceptical. Perhaps some of our cares would shrink if we thought less about them and entered with more single- minded enjoyment into the happiness that come our way.

With reference to the passage, which one of the following statements is correct?

    a. It is not possible for adults to feel thrilled by presents.

    b. There can be more than one reason why adults feel less thrilled by presents.

    c. The author does not know why adults feel less thrilled by presents.

    d. Adults have less capacity to feel the joy of loving or being loved.

---

47. Read the following passages and answer the items that follow the passages. Your answers to these items should be based on the passages only.   **(+2, -0.67)**

If presents bring less thrill now that we are grown up, perhaps it is because we have too much already; or perhaps it is because we have lost the fullness of the joy of giving, and with it the fullness of the joy of receiving. Children's fears are poignant, their miseries are acute, but they do not look too forward nor too far backward. Their joys are clear and complete, because they have not yet learnt always to add 'but' to every proposition. Perhaps we are too cautious, too anxious, too sceptical. Perhaps some of our cares would shrink if we thought less about them and entered with more single- minded enjoyment into the happiness that come our way.

The author of the passage is against

a. worrying too much about the past and future

b. being in the habit of thinking about presents

c. not being thrilled by new things

d. giving and receiving joy only partially

---

48. Let *A*, *B* and *C* represent distinct non-zero digits. Suppose *x* is the sum of all   (+2, -0.67)
    possible 3-digit numbers formed by *A*, *B* and *C* without repetition.

    Consider the following statements :

    1. The 4-digit least value of *x* is 1332.

    2. The 3-digit greatest value of x is 888.

    Which of the above statements is/are correct?

    a. 1 only

    b. 2 only

    c. Both 1 and 2

d. Neither 1 nor 2

---

49. There is a numeric lock which has a 3-digit PIN. The PIN contains digits 1 to 7. There is no repetition of digits. The digits in the PIN from left to right are in decreasing order. Any two digits in the PIN differ by at least 2. How many maximum attempts does one need to find out the PIN with certainty?   **(+2, -0.67)**

a. 6

b. 8

c. 10

d. 12

---

50. There are eight equidistant points on a circle. How many right-angled triangles can be drawn using these points as vertices and taking the diameter as one side of the triangle?   **(+2, -0.67)**

a. 24

b. 16

c. 12

d. 8

---

51. 24 men and 12 women can do a piece of work in 30 days. In how many days can 12 men and 24 women do the same piece of work?   **(+2, -0.67)**

a. 30 days

b. More than 30 days

c. Less than 30 days or more than 30 days

d. Data is inadequate to draw any conclusion

---

52. What is the remainder when 91 × 92 × 93 × 94 × 95 × 96 × 97 × 98 × 99 is divided by 1261? **(+2, -0.67)**

a. 3

b. 2

c. 1

d. 0

---

53. Consider the following statements in respect of a rectangular sheet of length 20 cm and breadth 8 cm: **(+2, -0.67)**

1. It is possible to cut the sheet exactly into 4 square sheets.

2. It is possible to cut the sheet into 10 triangular sheets of equal area.

Which of the above statements is/are correct?

a. 1 only

b. 2 only

c. Both 1 and 2

d. Neither 1 nor 2

---

54. When 70% of a number x is added to another number y, the sum becomes 165% of the value of y. When 60% of the number x is added to **(+2, -0.67)**

another number *z*, then the sum becomes 165% of the value of *z*. Which one of the following is correct?

a. z < x < y

b. x < y < z

c. y < x < z

d. z < y < x

---

55. Read the following passages and answer the items that follow the passages. Your answers to these items should be based on the passages only.

(+2, -0.67)

"The social order is a sacred right which is the basis of all other rights. Nevertheless, this right does not come from nature, and must therefore be founded on conventions."

With reference to the above passage, which of the following statements is/are correct?

1. Conventions are the sources of rights of man.

2. Rights of man can be exercised only when there is a social order.

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

---

56. Two candidates *X* and *Y* contested an election. 80% of voters cast their vote and there were no invalid votes. There was no NOTA (None of the above) option. *X* got 56% of the votes cast and won by 1440 votes. What is the total number of voters in the voters list?   (+2, -0.67)

    a. 15000

    b. 12000

    c. 9600

    d. 5000

57. What is the smallest number greater than 1000 that when divided by any one of the numbers 6, 9, 12, 15, 18 leaves a remainder of 3?   (+2, -0.67)

    a. 1063

    b. 1073

    c. 1083

    d. 1183

58. Let *p* be a two-digit number and *q* be the number consisting of same digits written in reverse order. If *p* × *q* = 2430, then what is the difference between *p* and *q*?   (+2, -0.67)

    a. 45

    b. 27

    c. 18

d. 9

---

59. Consider the following statements in respect of two natural numbers   (+2, -0.67)
p and *q* such that *p* is a prime number and *q* is a composite number :

1. *p* × *q* can be an odd number.

2. *q* / *p* can be a prime number.

3. *p* + *q* can be a prime number.

Which of the above statements are correct?

a. 1 and 2 only

b. 2 and 3 only

c. 1 and 3 only

d. 1, 2 and 3

---

60. Consider the following statements :   (+2, -0.67)

1. Between 3:16 p.m. and 3:17 p.m., both hour hand and minute hand coincide.

2. Between 4:58 p.m. and 4:59 p.m., both minute hand and second hand coincide.

Which of the above statements is/are correct?

a. 1 only

b. 2 only

c. Both 1 and 2

d. Neither 1 nor 2

---

61. There are two containers *X* and *Y*. *X* contains 100 ml of milk and *Y* contains 100 ml of water. 20 ml of milk from *X* is transferred to *Y*. After mixing well, 20 ml of the mixture in *Y* is transferred back to *X*. If *m* denotes the proportion of milk in *X* and *n* denotes the proportion of water in *Y*, then which one of the following is correct?   **(+2, -0.67)**

a. m = n

b. m > n

c. m < n

d. Cannot be determined due to insufficient data

---

62. A pie chart gives the expenditure on five different items *A*, *B*, *C*, *D* and *E* in a household. If *B*, *C*, *D* and *E* correspond to 90°, 50°, 45° and 75° respectively, then what is the percentage of expenditure on item *A*?   **(+2, -0.67)**

a. $\frac{112}{9}$

b. $\frac{125}{6}$

c. $\frac{155}{9}$

d. $\frac{250}{9}$

---

63. Read the following passages and answer the items that follow the passages. Your answers to these items should be based on the passages only.   **(+2, -0.67)**

How best can the problems of floods and droughts be addressed so that the losses are minimal and the system becomes resilient? In this context, one important point that needs to be noted is that India gets 'too much' water (about 75% of annual precipitation) during 120 days (June to September) and 'too little' for the remaining 245 days. This skewed water availability has to be managed and regulated for its consumption throughout the year.

Which one of the following best reflects the practical, rational and lasting solution?

a. Constructing huge concrete storage tanks and canals across the country

b. Changing the cropping patterns and farming practices

c. Interlinking of rivers across the country

d. Buffer stocking of water through dams and recharging aquifers

---

64. If   (+2, -0.67)

$15 \times 14 \times 13 \times ... \times 3 \times 2 \times 1 = 3^m \times n$

where m and n are positive integers, then what is the maximum value of m?

a. 7

b. 6

c. 5

d. 4

---

65. What is the value of *X* in the sequence 2, 12, 36, 80, 150, *X*? **(+2, -0.67)**

  a. 248

  b. 252

  c. 258

  d. 262

---

66. One non-zero digit, one vowel and one consonant from English alphabet **(+2, -0.67)** (in capital) are to be used in forming passwords, such that each password has to start with a vowel and end with a consonant. How many such passwords can be generated?

  a. 105

  b. 525

  c. 945

  d. 1050

---

67. There are 9 cups placed on a table arranged in equal number of rows **(+2, -0.67)** and columns out of which 6 cups contain coffee and 3 cups contain tea. In how many ways can they be arranged so that each row should contain at least one cup of coffee?

  a. 18

  b. 27

  c. 54

d. 81

---

68. The sum of three consecutive integers is equal to their product. How many such possibilities are there? **(+2, -0.67)**

    a. Only one

    b. Only two

    c. Only three

    d. No such possibility is there

---

69. What is the number of numbers of the form $0 \cdot XY$, where X and Y are distinct non-zero digits? **(+2, -0.67)**

    a. 72

    b. 81

    c. 90

    d. 100

---

70. The average weight of A, B, C is 40 kg, the average weight of B, D, E is 42 kg and the weight of F is equal to that of B. What is the average weight of A, B, C, D, E and F? **(+2, -0.67)**

    a. 40·5 kg

    b. 40·8 kg

    c. 41 kg

d. Cannot be determined as data is inadequate

---

71. Read the following passages and answer the items that follow the passages. Your answers to these items should be based on the passages only.   (+2, -0.67)

To encourage research is one of the functions of a university. Contemporary universities have encouraged research, not only in those cases where research is necessary, but on all sorts of entirely unprofitable subjects as well. Scientific research is probably never completely valueless. However silly and insignificant it may seem, however mechanical and unintelligent the labours of the researchers, there is always a chance that the results may be of value to the investigator of talent, who can use the facts collected for him by uninspired but industrious researchers as the basis of some fruitful generalization. But where research is not original, but consists in the mere rearrangement of existing materials, where its object is not scientific but literary or historical, then there is a risk of the whole business becoming merely futile.

The author's assumption about scientific research is that

a. it is never very valuable

b. it is sometimes very valuable

c. it is never without some value

d. it is always very valuable

---

72. Read the following passages and answer the items that follow the passages. Your answers to these items should be based on the passages only.   (+2, -0.67)

To encourage research is one of the functions of a university. Contemporary universities have encouraged research, not only in those

cases where research is necessary, but on all sorts of entirely unprofitable subjects as well. Scientific research is probably never completely valueless. However silly and insignificant it may seem, however mechanical and unintelligent the labours of the researchers, there is always a chance that the results may be of value to the investigator of talent, who can use the facts collected for him by uninspired but industrious researchers as the basis of some fruitful generalization. But where research is not original, but consists in the mere rearrangement of existing materials, where its object is not scientific but literary or historical, then there is a risk of the whole business becoming merely futile.

According to the author

a. not many research results can be of value to an intelligent investigator

b. a research result is always valuable to an intelligent investigator

c. any research result can be of value to an intelligent investigator

d. a research result must always be of some value to an intelligent investigator

73. Read the following passages and answer the items that follow the passages. Your answers to these items should be based on the passages only.

(+2, -0.67)

The majority of people who fail to accumulate money sufficient for their needs, are generally, easily influenced by the opinions of others. They permit the newspapers and the gossiping neighbours to do their thinking for them. Opinions are the cheapest commodities on the earth. Everyone has a flock of opinions ready to be wished upon by anyone who will accept them. If you are influenced by opinions when you reach decisions, you will not succeed in any undertaking.

Which one of the following is implied by the passage?

a. Most of the people do not accumulate money for their needs.

b. Most of the people never fail to accumulate money for their needs.

c. There are people who fail to accumulate money for their needs.

d. There is no need to accumulate money.

74. Read the following passages and answer the items that follow the passages. Your answers to these items should be based on the passages only. (+2, -0.67)

The majority of people who fail to accumulate money sufficient for their needs, are generally, easily influenced by the opinions of others. They permit the newspapers and the gossiping neighbours to do their thinking for them. Opinions are the cheapest commodities on the earth. Everyone has a flock of opinions ready to be wished upon by anyone who will accept them. If you are influenced by opinions when you reach decisions, you will not succeed in any undertaking.

What is the main idea of the passage?

a. People should not be influenced by the opinions of others.

b. People should accumulate as much money as they can.

c. People should neither give nor accept the opinions.

d. People will succeed in any undertaking if they do not accept any opinion at all.

75. Read the following passages and answer the items that follow the passages. Your answers to these items should be based on the passages only. (+2, -0.67)

Natural selection cannot anticipate future environments on the earth. Therefore, the set of existing organisms can never be fully prepared for environmental catastrophes that await life. An outcome of this is the extinction of those species which cannot overcome environmental adversity. This failure to survive, in modern terms, can be attributed to the genomes which are unable to withstand geological vagaries or biological mishaps (infections, diseases and so on). In biological evolution on the earth, extinction of species has been a major feature. The earth may presently have up to ten million species, yet more than 90% of species that have ever lived on the earth are now extinct. Once again, the creationist doctrines fail to satisfactorily address why a divine creator will firstly bother to create millions of species and then allow them to perish. The Darwinian explanation for extinct life is once again simple, elegant and at once convincing—organisms go extinct as a function of environmental or biological assaults for which their inheritance deems them ill-equipped. Therefore, the so-called Darwinian theory of evolution is not a theory at all. Evolution happens-this is a fact. The mechanism of evolution (Darwin proposed natural selection) is amply supported by scientific data. Indeed, to date no single zoological, botanical, geological, paleontological, genetic or physical evidence has refuted either of the central two main Darwinian ideas. If religion is not taken into consideration, Darwinian laws are acceptable just like the laws proposed by Copernicus, Galileo, Newton and Einstein—sets of natural laws that explain natural phenomena in the universe.

According to the passage, natural selection cannot anticipate future environments on the earth as

1. species not fully prepared to face the environmental changes that await them will face extinction

2. all the existing species would get extinct as their genomes will not withstand biological mishaps

3. inability of the genome to withstand environmental changes would result in extinction

4. extinction of species is a common feature

Select the correct answer using the code given below.

   a. 1, 2 and 3

   b. 2, 3 and 4

   c. 1, 3 and 4

   d. 1, 2 and 4

76. Read the following passages and answer the items that follow the passages. Your answers to these items should be based on the passages only.   (+2, -0.67)

Natural selection cannot anticipate future environments on the earth. Therefore, the set of existing organisms can never be fully prepared for environmental catastrophes that await life. An outcome of this is the extinction of those species which cannot overcome environmental adversity. This failure to survive, in modern terms, can be attributed to the genomes which are unable to withstand geological vagaries or biological mishaps (infections, diseases and so on). In biological evolution on the earth, extinction of species has been a major feature. The earth may presently have up to ten million species, yet more than 90% of species that have ever lived on the earth are now extinct. Once again, the creationist doctrines fail to satisfactorily address why a divine creator will firstly bother to create millions of species and then allow them to perish. The Darwinian explanation for extinct life is once again simple, elegant and at once convincing–organisms go extinct as a function of environmental or biological assaults for which their

inheritance deems them ill-equipped. Therefore, the so-called Darwinian theory of evolution is not a theory at all. Evolution happens-this is a fact. The mechanism of evolution (Darwin proposed natural selection) is amply supported by scientific data. Indeed, to date no single zoological, botanical, geological, paleontological, genetic or physical evidence has refuted either of the central two main Darwinian ideas. If religion is not taken into consideration, Darwinian laws are acceptable just like the laws proposed by Copernicus, Galileo, Newton and Einstein–sets of natural laws that explain natural phenomena in the universe.

The passage suggests that Darwinian theory of evolution is not a theory at all because

a. it does not satisfy the creationist doctrine

b. extinction is a function of environment and biological assaults

c. there are no evidences to refute it

d. existence of organisms is attributed to a creator

77. Read the following passages and answer the items that follow the passages. Your answers to these items should be based on the passages only.   (+2, -0.67)

Natural selection cannot anticipate future environments on the earth. Therefore, the set of existing organisms can never be fully prepared for environmental catastrophes that await life. An outcome of this is the extinction of those species which cannot overcome environmental adversity. This failure to survive, in modern terms, can be attributed to the genomes which are unable to withstand geological vagaries or biological mishaps (infections, diseases and so on). In biological evolution on the earth, extinction of species has been a major feature. The earth may presently have up to ten million species, yet more than 90% of species that have ever lived on the earth are now extinct. Once

again, the creationist doctrines fail to satisfactorily address why a divine creator will firstly bother to create millions of species and then allow them to perish. The Darwinian explanation for extinct life is once again simple, elegant and at once convincing–organisms go extinct as a function of environmental or biological assaults for which their inheritance deems them ill-equipped. Therefore, the so-called Darwinian theory of evolution is not a theory at all. Evolution happens-this is a fact. The mechanism of evolution (Darwin proposed natural selection) is amply supported by scientific data. Indeed, to date no single zoological, botanical, geological, paleontological, genetic or physical evidence has refuted either of the central two main Darwinian ideas. If religion is not taken into consideration, Darwinian laws are acceptable just like the laws proposed by Copernicus, Galileo, Newton and Einstein–sets of natural laws that explain natural phenomena in the universe.

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

1. Only species that have the ability to overcome environmental catastrophes will survive and perpetuate.

2. More than 90% of the species on the earth are in the danger of getting extinct due to drastic changes in the environment.

3. Darwin's theory explains all the natural phenomena.

Which of the above assumptions is/are valid?

a. 1 only

b. 1 and 2 only

c. 3 only

d. 1, 2 and 3

78. Read the following passage and answer the items that follow the passage. Your answers to these items should be based on the passage only.   (+2, -0.67)

In some places in the world, the productivity of staples such as rice and wheat has reached a plateau. Neither new strains nor fancy agrochemicals are raising the yields. Nor is there much unfarmed land left that is suitable to be brought under the plough. If global temperature continues to rise, some places will become unsuitable for farming. Application of technology can help overcome these problems. Agricultural technology is changing fast. Much of this change is brought about by affluent farmers in the West/Americas. Techniques developed in the West are being adapted in some places to make tropical crops more productive. Technology is of little use if it is not adapted. In the developing world, that applies as much to existing farming techniques as it does to the latest advances in genetic modification. Extending to the smallholders and subsistence farmers of Africa and Asia the best of today's agricultural practices, in such simple matters as how much fertilizers to apply and when, would lead to a greatly increased availability of food for humanity. So would things like better roads and storage facilities, to allow for the carriage of surpluses to markets and reduce wastage.

Based on the above passage, the following assumptions have been made:

1. Development of agricultural technology is confined to developed countries.

2. Agricultural technology is not adapted in developing countries.

Which of the above assumptions is/are valid?

a. 1 only

b. 2 only

   c. Both 1 and 2

   d. Neither 1 nor 2

---

79. Read the following passage and answer the items that follow the passage. Your answers to these items should be based on the passage only.   (+2, −0.67)

In some places in the world, the productivity of staples such as rice and wheat has reached a plateau. Neither new strains nor fancy agrochemicals are raising the yields. Nor is there much unfarmed land left that is suitable to be brought under the plough. If global temperature continues to rise, some places will become unsuitable for farming. Application of technology can help overcome these problems. Agricultural technology is changing fast. Much of this change is brought about by affluent farmers in the West/Americas. Techniques developed in the West are being adapted in some places to make tropical crops more productive. Technology is of little use if it is not adapted. In the developing world, that applies as much to existing farming techniques as it does to the latest advances in genetic modification. Extending to the smallholders and subsistence farmers of Africa and Asia the best of today's agricultural practices, in such simple matters as how much fertilizers to apply and when, would lead to a greatly increased availability of food for humanity. So would things like better roads and storage facilities, to allow for the carriage of surpluses to markets and reduce wastage.

Based on the above passage, the following assumptions have been made :

1. Poor countries need to bring about change in their existing farming techniques.

2. Developed countries have better infrastructure and they waste less food.

Which of the above assumptions is/are valid?

    a. 1 only

    b. 2 only

    c. Both 1 and 2

    d. Neither 1 nor 2

---

80. Read the following passage and answer the items that follow the passage. Your answers to these items should be based on the passage only.   (+2, -0.67)

In some places in the world, the productivity of staples such as rice and wheat has reached a plateau. Neither new strains nor fancy agrochemicals are raising the yields. Nor is there much unfarmed land left that is suitable to be brought under the plough. If global temperature continues to rise, some places will become unsuitable for farming. Application of technology can help overcome these problems. Agricultural technology is changing fast. Much of this change is brought about by affluent farmers in the West/Americas. Techniques developed in the West are being adapted in some places to make tropical crops more productive. Technology is of little use if it is not adapted. In the developing world, that applies as much to existing farming techniques as it does to the latest advances in genetic modification. Extending to the smallholders and subsistence farmers of Africa and Asia the best of today's agricultural practices, in such simple matters as how much fertilizers to apply and when, would lead to a greatly increased availability of food for humanity. So would things like better roads and storage facilities, to allow for the carriage of surpluses to markets and reduce wastage.

Based on the above passage, the following assumptions have been made:

1. Growing enough food for future generations will be a challenge.

2. Corporate farming is a viable option for food security in poor countries.

Which of the above assumptions is/are valid?

a. 1 only

b. 2 only

c. Both 1 and 2

d. Neither 1 nor 2

Answers

1. **Answer: a**

   Explanation:

   The correct answer is **1 and 2 only.**

   ⭐ <u>Key Points</u>

   - It is evident from the passage, *'The main threat to maintaining progress in human development comes from the <u>increasingly evident unsustainability of production</u> and consumption patterns. <u>Current production models</u> **rely heavily on fossil fuels**. We now know that this is unsustainable because the<u>resources are finite</u>.'*
   - Hence option 1 is the correct answer.
   - The **expansion of recycling cannot be linked with the production pattern** in the given passage.

---

2. **Answer: a**

   Explanation:

   The correct answer is **1 only.**

   ⭐ <u>Key Points</u>

   - As mentioned in the passage, *'Some **developed countries have begun to alleviate** the worst effects by expanding recycling and **investing in public transport and infra-structure** . But **most developing countries are hampered by the high costs and low availability of clean energy sources.** Developed countries need to support developing countries' transition to sustainable human development.'*
   - We can imply that developed countries can help the developing countries by **making clean energy sources available at low cost, as they can help provide**

such technologies, as the passage says that developing countries are hampered by the high costs and low availability of clean energy sources.

- **Statements 2 and 3 cannot be implied** from the given passage as there is no hint for loan support and encouraging developing countries to change their production and consumption patterns from developed countries.

---

3. **Answer: c**

Explanation:

The correct answer is **1 and 3 only.**

⭐ **Key Points**

- The passage warns about the consequences of deforestation and denudation.
- As the passage gives examples of such consequences,' *Pockets of <u>desert-like landscape are now appearing </u>in other parts of the country including the Sutlej-Ganga Plains and the Deccan Plateau. Where <u>only a few decades back there used to be lush green forests with perennial streams and springs,</u> there is only brown earth, bare of vegetation, without any water in the streams and springs except in the rainy season.'*
- **This implies that deforestation and denudation have impacted the greenery and water resources like streams and springs.**
- Hence depletion of soil resource and Lack of water for cultivation are the major impacts of deforestation and denudation.
- **Shortage of land for the common man is out of the context** as land for a common man is not essential for farming practice.

---

4. **Answer: d**

Explanation:

Calculation:

20, 10, 10, 15, 30, 75, X

$20 \times 0.5 = 10$

$10 \times 1 = 10$

$10 \times 1.5 = 15$

$15 \times 2 = 30$

$30 \times 2.5 = 75$

$75 \times 3 = 225$

Hence, option 4 is correct.

---

5. **Answer: a**

Explanation:

Option (1) is correct.

The identity Card number ABCDEFG is 7 digit number.

Step 1: The number is divisible by 9, which means the sum of digits is divisible by 9.

$1 + 2 + 4 + 5 + 7 + 8 + 9 = 36$.

Step 2: After deleting the first digit from the right, the resulting number is divisible by 6.

The number is divisible by 6, which means the number that is divisible by 3 and 2 both. If we delete any single-digit number from a number divisible by 9, the number is only divisible by 3 if the deleting digit is also divisible by 3, so that sum is divisible by 3.

Out of (1, 2, 4, 5, 7, 8, 9) only 9 is divisible by 3, So, the first digit from the right is 9 and the second digit from the right must be even as it is also divisible by 2.

Step 3 : After deleting two digits from the right of the original number, the resulting number is divisible by 5.

The number is divisible by 5, which means the last digit is 0 or 5. So, the third digit from the right must be 5.

Step 4 : After deleting three digits from the right of the original number, the resulting number is divisible by 4.

The number is divisible by 4 , which means the last two digits are divisible by 4.

Step 5 : After deleting four digits from the right of the original number, the resulting number is divisible by 3.

The number is divisible by 3, which means the sum of digits is divisible by 3. So the sum of the first three digits of the number from the right is divisible by 3.

Step 6: After deleting five digits from the right of the original number, the resulting number is divisible by 2 which means the second digit is even.

Possible outcomes are 7412589 and 1472589 .**Possible values for the sum of the middle 3 digits of the number** are **8**(7412589) and **14** (1472589).

Hence, the correct answer is an option(1) i.e., 8.

6. **Answer: a**

Explanation:

Option(1) is correct.

According to the given information, the direction figure is given below:
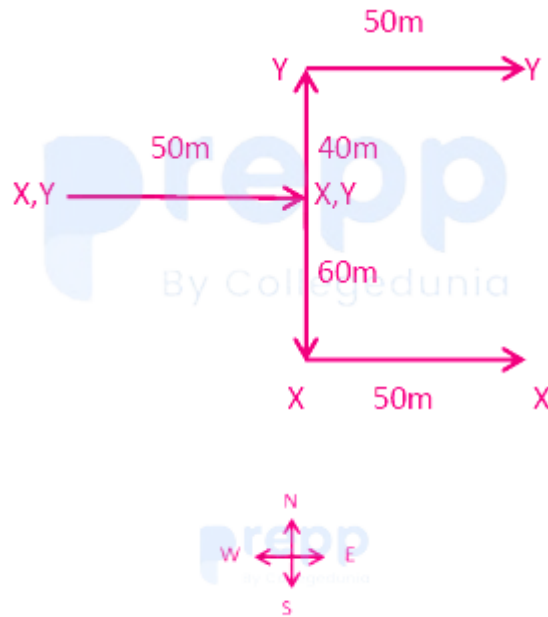
In the end, X and Y are **100 m** (40 m + 60 m) far from each other.

Hence, the correct answer is an option(1) i.e., 100 m.

---

7. **Answer: d**

Explanation:

Option(4) is correct.

Today is 5-JUN-2022 Sunday.

For day on 5-JUN-2099, number of **odd days** = number of years between them + number of leap years between them = **(77 + 19) odd days = 96 odd days = 5 odd days.**

Therefore day on **5-JUN-2099 is Friday** . So, **Sunday is 7-JUN-2099** .

Hence, the correct answer is an option(4) i.e., 7.

---

8. **Answer: d**

Explanation:

Calculation:

A bill for ₹1,840 is paid in the denominations of ₹50, ₹20 and ₹10 notes. 50 notes in all are used.

1. 25 notes of ₹50 are used and the remaining are in the denominations of ₹20 and ₹10.

25 notes of ₹50 = 25 × 50 = Rs.1250

Remaining amount = 1840 – 1250 =590

So, Rs. 590 cannot be paid in the combination of ₹20 and ₹10 notes.

2. 35 notes of ₹20 are used and the remaining are in the denominations of ₹50 and ₹10.

35 notes of ₹20 = Rs.700

Remaining amount = 1840 – 700 = 1140

So, Rs 1140 cannot be paid in the combination of ₹50 and ₹10.

3. 20 notes of ₹10 are used and the remaining are in the denominations of ₹50 and ₹20.

20 notes of ₹10 = Rs. 200

Remaining amount = 1640

So, Rs 1640 can be paid in the combination of 28 notes of ₹50 and 12 notes of ₹20 But 50 notes were used in question.

Neither of the options are correct

Hence, option 4 is correct.

9. **Answer: b**

Explanation:

Calculation:

We have to find which is the smallest number among 2^{40}, 3^{21}, 4^{18} and 8^{12}.

1.) $8^{12} = (2^3)^{12} = 2^{36}$

2.) $4^{18} = (2^2)^{18} = 2^{36}$

3.) 2^{40}

4.) 3^{21}

So, in above expressions it is noted that (1.) and (2.) are equal and (3.) greater than (1.) and (2.).

So, the only option left which can be the smallest number is 3^{21}.

Hence, option 2 is correct.

10. **Answer: c**

Explanation:

Option(3) is correct.

On arranging according to the given statements we get only two possibilities i.e.,

Row 1 :**2 7 3**   3 2 7

Row 2 : **5 4 6**   6 5 4

Row 3 : **8 1 9**   9 8 1

Therefore, only two combinations are possible.

Hence, the correct answer is an option(3) i.e., 2.

---

11. Answer: b

Explanation:

The correct answer is **Politicians should be selected from those trained in administration.**

⭐ **Key Points**

- As the author is stressing on the need for expertise in a particular field which is a common notion everyone has, however, we fail to do the same in the field of administering a State.
- **Hence the author calls for choosing a qualified person for administering a state.**
- This indicates that there is a **need to choose someone who is trained in administration.**
- **Hence option 2 is a valid answer.**
- Option 1 is **one of the general statements** given in the passage, this cannot be a message.
- Option 3author **doesn't concentrate on barring people** but selecting someone of competence.
- Option 4 cannot be a message as **it is opposite to the view mentioned in the passage,** as the author herself/himself is questioning such decisions.

---

12. Answer: d

Explanation:

The correct answer is **It is based on the proposition of poverty as meagre income or buying capacity.**

⭐ <u>Key Points</u>

- The given passage revolves around the definition of the poverty line which concentrates only on 'income poverty' masking the other forms of poverty.
- As stated in the passage, *'If poverty is ultimately about deprivations affecting human well-being, then income poverty is only one aspect of it* **.** *Poverty of a life,* in our view, lies **not merely in the impoverished state** in which the person actually lives, but also in the **lack of real opportunity given by social constraints** as well as **personal circumstances–to choose other types of living.'**
- The other kinds of poverty like **lack of opportunities due to social constraints** , and **freedom to choose the type of living are not being included in the definition of poverty.**
- Hence, we can say that methodology adopted in India to count the 'poor' is debatable and it needs to be inclusive in nature.
- **Hence, option 4 is correct.**
- **Options 2 and 3 are cannot be the answer, rural/ urban poor and global standards are not being discussed in the passage.**

⭐ <u>Confusion Points</u>

- Option 1 might be confusing sometimes, the matter here is not about being confused but the wrong method is used.

---

13. **Answer: a**

Explanation:

The correct answer is **It talks of only one kind of deprivation ignoring all others.**

⭐ <u>Key Points</u>

- As stated in the passage,*'If poverty is ultimately about deprivations affecting human well-being, then<u>income poverty is only one aspect of it</u>.Poverty of a life, in our view, lies not merely in the impoverished state in which the person actually lives, but also in the<u>lack of real opportunity given by social constraints as well as personal circumstances–to choose other types of living</u>.'*

- Hence, option 1 is the correct answer.
- Option 2 is opposite to the view mentioned in the passage, the passage does describe the other form of poverty like lack of real opportunity given by social constraints. Other forms of poverty also have an impact on human life.
- Options 3 and 4 are not mentioned in the passage, irrelevant to the given question.

---

14. **Answer: a**

Explanation:

The correct answer is **option1.**

⭐ **Key Points**

- As stated in the passage, *'Poverty of a life, in our view, lies **not merely in the impoverished state** in which the person actually lives,but also in the lack of real opportunity given by social constraintsas well as personal circumstances to choose other types of living.'*
- **This clearly indicates that it is not just income poverty but also other forms of poverty.**
- **Hence, option 1 is the correct answer.**
- Option 2 is not valid as the passage doesn't say anything about the poor people in rural and urban areas.
- Option 3 is not true as the author talks about **the lack of real opportunity given by social constraints as well as personal circumstances and not the missed opportunities.**
- Option 4 is ambiguous in nature as the passage doesn't talk about the material or non-material deprivations, and human choices in a permanent manner.

---

15. **Answer: b**

Explanation:

Calculation:

The faster of the two friends will catch up with the slower one only after he runs one extra round than the slower one.

Here since the ratio of the speeds of the two friends is 3 : 2

The faster of the two meets the slower one once every three rounds.

Since the track length is 300m and the race is of 3KM length, the faster of the number of rounds to finish the race is 3km/300m = 10 rounds.

Since they meet for every 3 rounds, and there are 10 rounds in total. So, they meet 3 times in completing those 10 rounds.

Hence, option 2 is correct.

---

16. Answer: d

Explanation:

Option(4) is correct.

Alphabets	A	B	C	D	E	F	G	H	I	J	K	L	M
Positional value	1	2	3	4	5	6	7	8	9	10	11	12	13
Positional value	26	25	24	23	22	21	20	19	18	17	16	15	14
Alphabets	Z	Y	X	W	V	U	T	S	R	Q	P	O	N

According to the given information, LUCKNOW is represented as:

```
L   U   C   K   N   O   W
↓   ↓   ↓   ↓   ↓   ↓   ↓
O   F   X   P   M   L   D
```

Hence, the correct answer is an option(4) i.e., OFXPMLD.

---

17. Answer: c

Explanation:

Option(3) is correct.

Chess is played by two players.
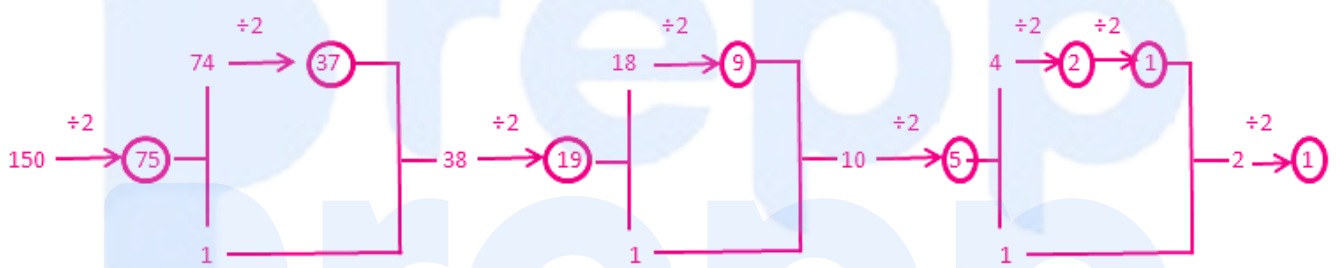
Total matches played in the entire tournament = 75 + 37 + 19 + 9 + 5 + 2 +1 + 1 = **149** .

Hence, the correct answer is an option(3) i.e., 149.

---

18. Answer: b

Explanation:

Calculation:

Number of 3-digit numbers without repeatition of digits in which each digit is odd and the number is divisible by 5.

We have odd numbers as 1, 3, 5, 7, 9

In 3-digit numbers we have three positions of digits i.e. units, tens and hundreds in which units digit will alwasy be 5 because number is divisible by 5.

For remaining two positions we have 4 numbers i.e. 1, 3, 7, 9. So, for arranging these numbers we use permutation as:

$^4P_2 = 4! / (4 - 2)! = (4 \times 3 \times 2 \times 1) / (2 \times 1) = 12$

Hence, option 2 is correct.

---

19. Answer: d

Explanation:

Option(4) is correct.

Statement-1 : x / 3 is not an integer : **False**, for x = 6 , x/3 = 2 which is integer, so this statement is false.

Statement-2 : 3x is an integer: **False**, for x= 1/2 , 3x = 3/2 which is not an integer.

Therefore both statements are false.

Hence, the correct answer is an option(4) i.e., Both Statement – 1 and Statement – 2 are not sufficient to answer the question.

---

20. Answer: b

Explanation:

Calculation:

Let the price be 100.

It is given that the increase in the price of certain item is 25%.

So, now the prrice becomes 125.

Then the price is decreased by 20%.

So, now the price becomes = 125 - (125 × 0.20) = 100

Then the price again increased by 10%.

So, now the price becomes = 100 + (100 × 0.10)

$$= 100 + 10 = 110$$

Initial price = 100, Final price = 110

Resultant increase in price = ((110 - 100)/100) × 100 = 10%

Hence, option 2 is correct.

---

21. **Answer: c**

Explanation:

Option(3) is correct.

A and E can arrange in 4 ways .

$$\_\ A\ \_\ \_\ E \qquad \_\ E\ \_\ \_\ A$$
$$A\ \_\ \_\ E\ \_ \qquad E\ \_\ \_\ A\ \_$$

On fixing two positions **rest of the 3 positions can be arranged in 6** possible ways (3 × 2 × 1).

So, the total possible arrangements are **4 × 6 = 24** .

Hence, the correct answer is an option(3) i.e., 24.

---

22. **Answer: d**

Explanation:

Option(4) is correct.

Symbol in Diagram	Meaning
◯	Female
☐	Male
=	Married couple
—	Siblings
		Difference of a generation

From both statements, we are not able to find the gender of Z.

So, Z may be the sister or maybe brother of X.

Hence the correct answer is an option(4), i.e., Both Statement-1 and Statement-2 are not sufficient to answer the question.

---

23. **Answer: b**

Explanation:

Option(2) is correct.

101 plants mean there are 100 parts between them.

Distance for 100 parts = 1010 m.

So, **a distance of one part = 10.1 m**

5 consecutive plants have 4 parts between them, So, the **distance between 5 consecutive plants** = 4 × 10.1 m = **40.4 m** .

Hence, the correct answer is an option(2) i.e., 40.4 m.

---

24. Answer: c

Explanation:

Option (3) is correct.

One can travel from A to B in 4 ways and B to C in 3 ways.

So, one can travel A to C via B = **4 × 3 = 12.**

One can travel directly from A to C = **3.**

So total ways can **one travel from A to C using these roads** = 12 + 3 = **15** .

Hence, the correct answer is an option(3) i.e., 15.

---

25. Answer: d

Explanation:

Calculation:

Let A has x number of coins.

B = A/2 + 2 = x/2 + 2

C = B/2 + 2 = x/4 + 2/2 + 2 = x/4 + 3

D = C/2 + 2 = x/8 + 3/2 + 2 = x/8 + 7/2

It is given that D has the number of coins which is equal to lowest two-digit number i.e. 10.

D = x/8 + 7/2 = 10

x/8 = 13/2

x = 52

Hence, option 4 is correct.

---

26. **Answer: c**

Explanation:

Option(3) is correct.

On analysis we get, the series is such that **it started with the first alphabet of series then, the first two alphabets then, the first three alphabets, and so on.**

1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 + 10 + 11 + 12 + 13 = 91

92th position of series starts from A.

Similarly, **the 100th position of the series is the 9th alphabet from the start(100 – 91 = 9)** which is 'I'.

Hence the correct answer is an option(3) i.e., I.

---

27. **Answer: a**

Explanation:

Option(1) is correct.

The possible combination for the minimum number of persons in the queue is shown below:

So, the **minimum number of persons in the queue is 22.**

Hence, the correct answer is option(1) i.e.,22.

---

28. **Answer: d**

Explanation:

The correct answer is **Water management practices in India need to change dramatically in the coming years.**

⭐ Key Points

- Option 1 is not true, as it addresses the consumption pattern alone but not the usage pattern of energy.
- Option 2 is not true, the author is mainly focused on the usage of water patterns this may appear to be the correct answer but this doesn't reflect the crux of the passage.
- Option 3 is not true, It is the economic growth, higher literacy and increasing skill levels has resulted in the change of cultural and social behaviour of the people. not the technological development.
- **Option 4 is the correct answer as given,** *'People have moved to a higher protein-based diet like milk products, fish and meat, all of* **which need significantly more water to produce** *than cereal-based diets. Increasing use of electronic and electric machines/gadgets and motor vehicles needs more and* **more energy and generation of energy needs water** *.'*

- Hence we can say that water management practices are important to tackle the issues related to diet patterns and energy consumption patterns.

---

29. **Answer: d**

Explanation:

Option(4) is correct.

Seconds in one minute = 60

Seconds in one hour = 60 × 60 = 3600

Seconds in one day = 60 × 60 × 24 = 86400

Seconds in one week = 60 × 60 × 24 × 7 = 604800

So, **seconds in x weeks, x days, x hours, x minutes and x seconds** = 604800x + 86400x + 3600x + 60x + x = **694861x** .

Hence, the correct answer is option(4) i.e.,694861x.

---

30. **Answer: d**

Explanation:

Option(4) is correct.

Symbol in Diagram	Meaning
○	Female
□	Male
═══	Married couple
───	Siblings
│	Difference of a generation

The required family diagram according to the given information is given below :
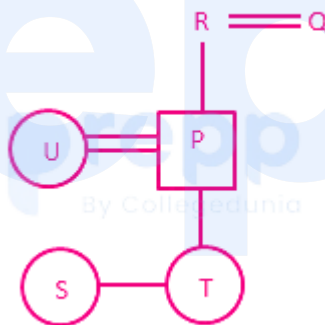
Here, we don't know the gender of R and Q, but T is definitely the granddaughter of *Q.*

Hence, the correct answer is option(4) i.e., T is the granddaughter of *Q.*

---

31. **Answer: d**

Explanation:

Option(4) is correct.

Prepp

Here, direction of P with respect to Q or R is not given, So we are not able to find the distance between Q and P.
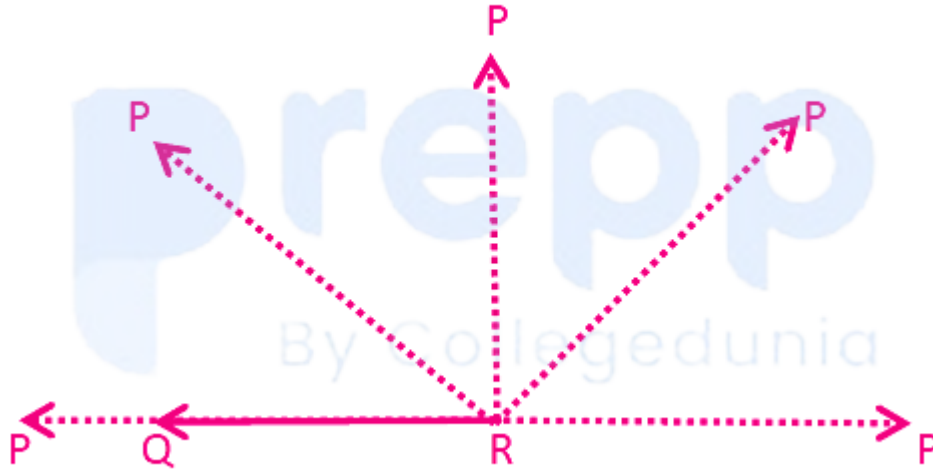
So, **data is missing.**

Hence, the correct answer is option(4) i.e., Both Statement – 1 and Statement – 2 are not sufficient to answer the question.

---

32. **Answer: d**

Explanation:

Option(4) is correct.

Venn Diagram for the given statement is given below:
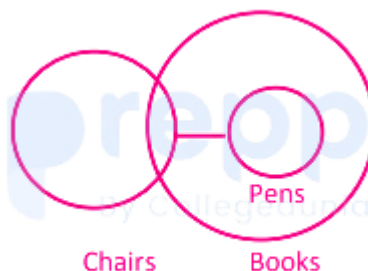
Hence, the correct answer is an option(4) i.e., None of the Conclusions follows.

---

33. **Answer: c**

Explanation:

Option(3) is correct.

The required Venn diagram is shown below:
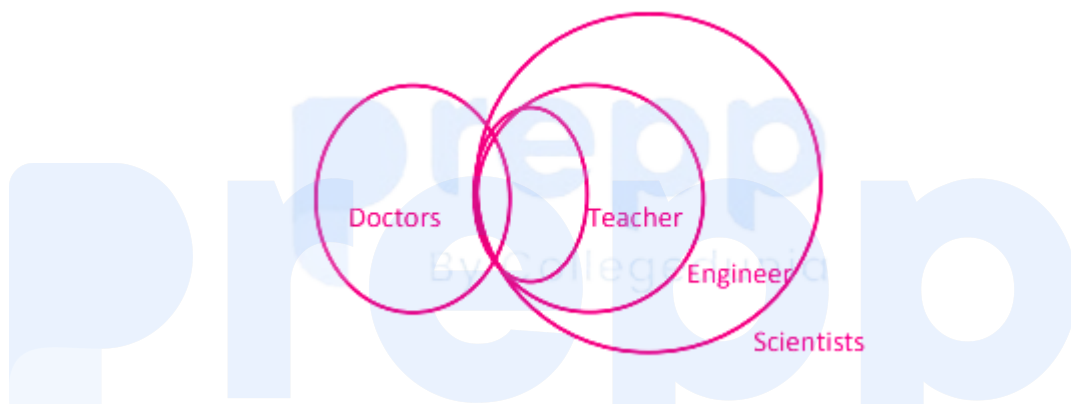
Hence, the correct answer is an option(3) i.e., Both Conclusion-I and Conclusion-III.

---

34. **Answer: d**

Explanation:

Option(4) is correct.

The required possible arrangements are given below:
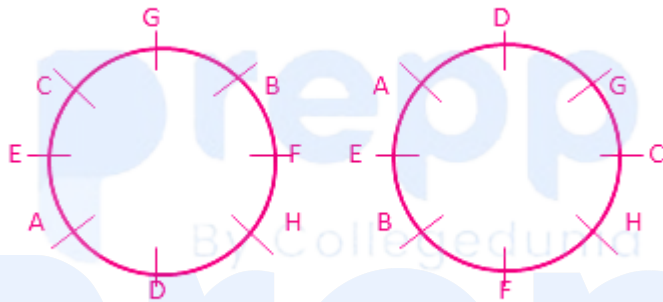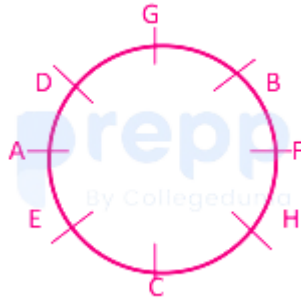
Here, none of the options are definitely correct.

Hence, the correct answer is an option(4) i.e., None of the above .

---

35. **Answer: b**

Explanation:

The correct answer is **the great evil of our age is overstrain.**

⭐ Key Points

- The idea of the passage is 'the great evil of our age is overstrain'.
- As the passage says,
  - ' ever-increasing numbers of **individuals havebeen living as workers merely** ,not as human beings.'
  - 'An **excessive amount of labou** r is rule today in every circle of society,'
  - He **does not want to think** ; or he cannot even if he wants to.

- He seeks **not self-improvement,** but **entertainment which would enable him to be mentally idle** and to forget his usual activities.
- All these statements point towards how man has become overstrained and he merely getting any time to improve himself or think or spare time in entertainment rather than serious literature activities.
- **Option 2 is the correct answer.**
- Option 4 may seem to be the right answer but it only concentrates on the spiritual welfare which is a small part of improving ourselves but this doesn't reflect the idea of the passage.
- option 1 cannot be the idea of the passage as this doesn't reflect the intentions of the author as he is speaking of the situation and not recommending any solutions
- Option 2 cannot be the idea as it reflects only the thinking part of the human not the whole idea.

---

36. **Answer: b**

    Explanation:

    The correct answer is**has no time to do so.**

    ⭐ **Key Points**

    - As the man, today is under an excessive amount of labour **he has no time to seek self-improvement** , as the man is already strained by the heavy activities, he finds it very difficult to **spend his little leisure in serious activities.**
    - **Hence option 2 is a valid answer.**
    - Option 1 cannot be true as we cannot conclude from the passage that man is not intellectually capable rather he has no time for such activities.
    - Option 3 materialism is not the concern in the given passage but the seeking entertainment to keep his mind idle.
    - Option 4 cannot be true as loving amusement itself will keep his mind idle. He is not mentally idle.

---

37. **Answer: b**

Explanation:

The correct answer is **2 only.**

⭐ **Key Points**

- As given in the passage, *'The demographic dividend is basically a swelling in the working age population, which conversely means that the relative ratio of very young and very old will, for a while, be on the decline.'*
- This clearly indicates that **'The ratio of very old and very young will decrease for a while.'** Hence statement 2 is correct.
- **Statement 1 cannot be implied** from the given passage, as it depends on the sound education system.
- **Statement 3 is not valid** as the author is concentrating on the working age alone and there is no linkage between population growth and the demographic dividend in the given passage.

38. **Answer: d**

Explanation:

The correct answer is **Neither 1 nor 2.**

⭐ **Key Points**

- **Statement 1 cannot be inferred** from the given passage, author mentions that we **can use the demographic dividend as a source,** also gives examples of Ireland and china.
- But we cannot imply that a demographic dividend is an essential condition for a country to rapidly increase its economic growth. **This has not been clarified in the given passage.**

- **Statement 2 also cannot be an inference,** promotion of higher education does not necessarily be helping country's rapid economic growth.
- There is also a need for skill development. This alone cannot be an inference of the passage.

---

39. Answer: a

Explanation:

Calculation:

P and *Q* together purchased 21 notebooks.

P + Q = 21 −−−−−(1.)

Q purchased 5 notebooks less than *P* did.

P − Q = 5   −−−−−−−(2.)

Solving equation (1.) and (2.), we get

P = 13 and Q = 8

P purchased 5 notebooks more than *X* did.

X = P − 5 = 13 − 5 = 8

Z purchased 8 notebooks more than *X* did.

Z = X + 8 = 8 + 8 = 16

X and *Y* together purchased 28 notebooks.

X + Y = 28

Y = 28 − 8 = 20

Total number of notebooks = P + Q + X + Z + Y = 65

Cost of one notebook = Rs. 40

Cost of total books = 65 × 40 = 2600

Hence, option 1 is correct.

---

40. Answer: d

Explanation:

Option(4) is correct.

Let the speed of man is x km/hr and the distance between his home and village is Y km.

Total time taken = 16:00 pm - 14:30 pm = $\frac{3}{2}$ hr

The total time during traveling (excluding rest) = $\frac{3}{2}$ hr - $\frac{25}{60}$ hr = $\frac{13}{12}$ hr

Speed, distance, time equation :

$\frac{Y}{X} + \frac{1.25Y}{2X} = \frac{13}{12}$ $\Rightarrow$ $\frac{Y}{X} = \frac{2}{3}hr$ = 40 minutes

Hence, time is taken from home to village by man = **40 minutes**

$\Rightarrow$ So exact time on Clock when man reached village = **14:30 pm + 40 minutes = 15:10 pm**

The village clock shows 15:15 pm.

So, the Village clock is 5 minutes faster.

Hence, the correct answer is an option(4) i.e., 5 minutes fast.

---

41. Answer: c

Explanation:

Calculation:

Let A gets x pens.

B = x/2

C = x/3

D = x/4

E = x/5

F = x/6

LCM of 2, 3, 4, 5, 6 = 60

The possible value of x = 60, 120, 180, ...

According to question

The number of pens each one gets is an even number

∴ x =120 (as minimum possible value)

A =120

B = 60

C = 40

D = 30

E = 24

F = 20

Total number of pens = 294

Hence, option 3 is correct.

---

42. **Answer: d**

Explanation:

Option(4) is correct.

The required arrangement is given below:
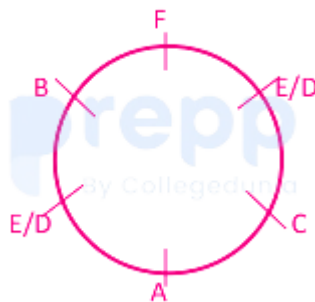
So, the immediate left of A is **E or D** .

Hence, the correct answer is an option(4) i.e., Both Statement-1 and Statement-2 are not sufficient to answer the question.

---

43. **Answer: c**

Explanation:

Calculation:

Statement-1: Manisha is 24 years younger than her mother.

Statement-2 : 5 years later, the ages of Manisha and her mother will be in the ratio 3 : 5.

Let the age of mother be m and manisha be n

$m = n + 24$

$(m + 5)/(n + 5) = 5/3$

$(n + 24 + 5)/(n + 5) = 5/3$

(n + 29) × 3 = (n + 5) × 5

3 n + 87 = 5 n + 25

2 n = 62

n = 31

So, both the statements 1 and 2 are required to answer the question.

Hence, option 3 is correct.

---

44. Answer: d

Explanation:

Option (4) is the correct answer.

Statement-1: Lecture F is preceded by A and followed by C :   It only indicates three of these lectures as A followed by F followed by C, but does not give the exact position.

Statement-2: No lecture after lecture B :   This only indicates that lecture B is at the end, ie from 1:00 pm to 2:00 pm.

Individually as well as the two statements are not enough to find out about the third lecture.

So, correct answer option(4) means, both statement-1 and statement-2 are not sufficient to answer the question.

---

45. Answer: a

Explanation:

The correct answer is **Option 1.**

★ **Key Points**

- Option 1 is the underlying tone, we can imply that only an educated population can make use of the benefits of economic progress which is leisure by view of enjoyment.
- Options 2 and 4, these statements are out of context as the author concentrates on using leisure rather than creating leisure.
- Option 3, this statement is also out of context as it only specifies the educated population and increase in the happiness but is not linked with leisure.

---

46. **Answer: b**

Explanation:

The correct answer is **There can be more than one reason why adults feel less thrilled by presents.**

★ **Key Points**

- From the given passage, *'If presents bring less thrill now that we are grown up, perhaps it is because we have too much already; or perhaps it is because we have lost the fullness of the joy of giving, and with it the fullness of the joy of receiving.'*
- *'Perhaps we are too cautious, too anxious, too sceptical.'*
- **This clearly indicates that there are many reasons why adults feel less thrilled by presents.**
- **Hence option 2 is the correct answer.**
- Option 1 this cannot be true as the author is suggesting some ways at the end of the passage that adults can feel thrilled by presents.
- Option 3, the author does know some reasons why adults feel less thrilled by presents by telling reasons like *we are too cautious, too anxious, too sceptical.*
- Option 4, this cannot be true as the author doesn't tell about the capacity here.

---

47. **Answer: a**

Explanation:

The correct answer is **worrying too much about the past and future.**

⭐ **Key Points**

- As stated in the passage, *'Children's fears are poignant, their <u>miseries are acute, but they do not look too forward nor too far backward.</u> Their joys are clear and complete, because they have not yet learnt always to add 'but' to every proposition'.*
- **This indicates that we are often thinking much about looking too forward and too far backward.**
- **Hence, option 1 is the correct answer.**
- Option 2 cannot be true we are not thinking about the 'presents' but the outcomes of it.
- Option 3 cannot be true, as the author says we are less thrilled rather than not thrilled at all.
- Option 4, Partial joy is not discussed in the passage.

48. **Answer: a**

Explanation:

Option(1) is correct.

The minimum possible value of three distinct non-zero digits (A, B, C) is **1,2,3** .

All possible 3-digit numbers formed by *A, B,* and *C* without repetition are **123, 132, 213, 231, 312,** and **321.**

So, **x**= 123 + 132 + 213 + 231 + 312 + 321 = **1332** .

So the least value of x is 1332 .

Statement 1: The 4-digit least value of x is 1332:**Correct** .

Statement 2: The 3-digit greatest value of x is 888:**False** , as the least value of x is 1332.

Hence, the correct answer is an option(1) i.e., 1 only.

---

49. Answer: c

Explanation:

Option (3) is correct.

All Possible Values for a 3-digit PIN are **753, 752, 751, 742, 741, 731, 642, 641, 631, 531.**

So, the maximum number of attempts one need to find out the PIN with certainty is **10** .
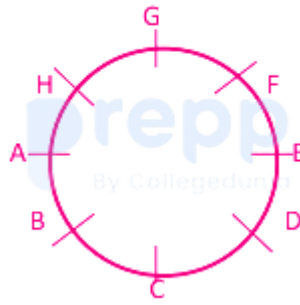
Hence, the correct answer is an option(3) i.e., 10.

---

50. Answer: a

Explanation:

Option(1) is correct.

Every angle made on the semicircle is 90 $^\circ$.

So, every triangle is made using the diameter as one side and another vertice point on a circle is a right-angled triangle.

All possible triangles are **AHE, AGE, AFE, ADE, ACE, ABE, BAF, BHF, BGF, BEF, BDF, BCF, CAG, CBG, CDG, CEG, CFG, CHG, DAH, DBH, DCH, DEH, DFH, DGH.**

So, the number of right-angled triangles can be drawn using eight equidistant points on a circle as vertices and taking the diameter as one side of the triangle is **24** .

Hence, the correct answer is an option(1) i.e., 24.

---

51. Answer: d

Explanation:

Calculation:

24 men and 12 women can do a piece of work in 30 days.

We have to find in how many days 12 men and 24 women can do the same piece of work.

There can be 3 possibilities:

1.) If men are more efficient than women.

In this case, the number of days to complete the whole work will be greater than 30 days. Because number of men are reduced and number of women are increased.

2.) If women are more efficient than men.

In this case, the number of days to complete the whole work will be less than 30 days. Because number of men are reduced and number of women are increased.

3.) If women and men are equally efficient

In this case, the number of days to complete the whole work will be 30. Because the number of men and women are changed in equal proportion.

So, the data given in the questioin is inadequate to answer the question.

Hence, option 4 is correct.

---

52. Answer: d

Explanation:

Calculation:

91 × 92 × 93 × 94 × 95 × 96 × 97 × 98 × 99 is divided by 1261.

Factors of 1261 are 13 and 97.

So, dividing the given expression by 13 × 97.

(91 × 92 × 93 × 94 × 95 × 96 × 97 × 98 × 99)/(13 × 97)

= 7 × 92 × 93 × 94 × 95 × 96 × 98 × 99

It means this expression is completely divisible by 1261.

Hence, option 4 is correct.

---

53. Answer: c

Explanation:

Option(3) is correct.

*Statement 1: It is possible to cut the sheet exactly into 4 square sheets:***Correct** , we can cut a 20 × 8, sheet into exactly 4 square sheets as two 4×4 and two 8×8.

*Statement 2 : It is possible to cut the sheet into 10 triangular sheets of equal area:***Correct** , we can cut a 20 × 8, sheet into 10 triangular sheets of the equal area of 16 square units.

Hence, the correct answer is an option(3) i.e., Both 1 and 2.

---

54. **Answer: a**

Explanation:

Calculation:

Let there are three numbers x, y and z.

70% x + y = 165% y

70x + 100y = 165y

70x = 65y

14x = 13y

x/y = 13/14

60% x + z = 165% z

60x + 100z = 165z

60x = 65z

12x = 13z

x/z = 13/12

So, we get x = 13, y = 14, z = 12.

y > x > z

Hence, option 1 is correct.

---

55. Answer: a

Explanation:

The correct answer is **1 only.**

⭐ **Key Points**

- From the passage, *"The social order is a sacred right which is the basis of all other rights. Nevertheless, this right does not come from nature, and must therefore be founded on conventions."*
- This indicates that all the human rights come from social order and to have social order we need some conventions.
- Hence we can say that **conventions are the sources of rights of man.**
- The rights of man can be exercised only when there is a social order. This cannot be true as it is the other way round as explained in the passage.

---

56. Answer: a

Explanation:

Calculation:

Two candidates *X* and *Y* contested an election.

80% of voters cast their vote and there were no invalid votes.

X got 56% of the votes cast and won by 1440 votes.

Then Y must have hot 44% of the casted votes.

So, 56% - 44% = 12%

12% = 1440

1% = 120

100% = 12000

So, the casted votes = 12000

It is given that only 80% voters casted their votes,

80% = 12000

100% = (12000/80) × 100

100% = 15000

So, total number of voters in the voters list = 15000

Hence, option 1 is correct.

---

57. **Answer: c**

Explanation:

Given:

The remainder in each case is 3.

The number should be greater than 1000.

The number is divided by 6, 9, 12, 15, 18.

Concept used:

If a number is divided by some numbers and in each case leaves the same remainder then such least number = LCM of the numbers + The Remainder

Calculation;

The number should be above 1000.

LCM of 6, 9, 12, 15, 18 for a number above 1000 is 1080.

Then the required number is = 1080 + 3 = 1083

Hence, option 3 is correct.

Method 2:

Check each of the given options by dividing by the given numbers such as 6, 9, 12, 15, 18 and leaves remainder 3.

1.) 1063

   1063 – 3 = 1060

    1060 is not divisible by 9.

2.) 1073

   1073 – 3 = 1070

    1070 is not divisible by 9.

3.) 1083

   1083 – 3 = 1080

    1080 is divisible by 6, 9, 12, 15, 18.

4.) 1183

   1183 – 3 = 1180

    1180 is not divisible 9

Hence, option 3 is correct.

---

58. **Answer: d**

Explanation:

  Calculation:

The last digit of 2340 is 0

This indicates that one of the numbers must end in with 5 and the other number must be even.

Let the missing digit be x

The number $x5$ has a value $10x+5$

The number $5x$ has a value $50+x$

The product is 2340

$(10x+5)(50+x)=2430$

$500x+10x^2+250+5x=2430$

$10x^2+505x-2180=0$ ...... (divide both side by 5)

$2x^2+101x-436=0$

Using ac method:

$2 \times 436=872$

Find the factor of 872 which differ by 101

$1,2,4,8.......109,218,432,872$

$\Rightarrow(2x+109)(x-4)=0$

By solving equation we have

$x=-54.5$..... (ignore as x is an integer)

$\Rightarrow x=4$

If $x=4$, then the numbers are 45 and 54.

So, the difference between 54 and 45 = 9

Hence, option 4 is correct.

59. **Answer: d**

Explanation:

Option(4) is correct.

*Statement 1: p × q can be an odd number:***Correct** if p and q both are odd then their product is odd. e.g., p = 3 and q = 15 then p × q = 45, which is a odd number.

*Statement 2: q / p can be a prime number:***Correct** if composite number q is made of two prime numbers and p is one of that prime numbers then q/p is an odd number. e.g., p = 3 and q = 15 then q/p = 5, which is a prime number.

*Statement 3: p + q can be a prime number:***Correct** if p = 5 and q = 6, then p + q = 11 which is a prime number.

Hence, the correct answer is an option(4) i.e., 1, 2, and 3.

60. **Answer: c**

Explanation:

Option(3) is correct.

*Statement 1. Between 3:16 p.m. and 3:17 p.m., both hour hand and minute hand coincide:***Correct** , b etween 3:16 p.m. and 3:17 p.m., both hour hand and minute hand coincide at **3:16 $\frac{4}{11}$ pm** .

*Statement 2: Between 4:58 p.m. and 4:59 p.m., both minute hand and second hand coincide:***Correct** , During every minute both minute hand and second hand coincide.

Hence, the correct answer is an option(3) i.e., Both 1 and 2.

61. **Answer: a**

Explanation:

Calculation:

There are two containers X and Y.

X contains 100 ml of milk.

Y containes 100 ml of water.

20 ml of milk from X is transferred to Y.

Now, we get,

X → Milk = 80 ml

Y → Milk = 20 ml and Water = 100 ml

Total mixture in Y is 120 ml in which ratio of Milk and Water is 1 :5 respectively.

After that 20 ml of the mixture of Y is transferred to X,

Mixture to be transferred from Y = Y → Milk = 20/6, Water = (20/6) × 5 = 100/6

Remaining mixture in Y = Y → Milk = 20 - (20/6) = 100/6, Water = 100 - (100/6) = 500/6

New Mixture in X = X → Milk = 80 + (20/6) = 500/6, Water = 100/6

It is given that m denotes the proportion of milk in X i.e. 500/6

It is given that n denotes the proportion of water in Y i.e. 500/6

It means m = n.

Hence, option 1 is correct.

62. **Answer: d**

Explanation:

Calculation:

B = 90° , C = 50°, D = 45°, E = 75°

Total expenditure on A, B, C, D and E = 360°

A = 360° – 260° = 100°

Percentage of expenditure on item A = (100/360) × 100 = 250/9

Hence, option 4 is correct.

63. **Answer: d**

Explanation:

The correct answer is **Buffer stocking of water through dams and recharging aquifers.**

⭐ <u>Key Points</u>

- Option 1 is not correct, constructing concrete tanks and canals cannot improve the underground water level which will make water availability throughout the year impossible.
- Option 2 is not correct, the passage doesn't talk about the relationship between the cropping patterns and farming practices.
- Option 3 is not correct, the interlinking of the rivers across the country cannot be a solution as there is no substantial evidence of this will make water available throughout the year
- **Option 4 is the correct answer, buffer stocking of water through dams and recharging aquifers will help maintain the water availability during fewer water**

days and recharging aquifers will help in ground water availability also.

---

64. Answer: b

Explanation:

Option(2) is correct.

For the maximum value of m, we need to find **power of 3 in 15!** .

Power of 3 in 15! = integer value of $\frac{15}{3}$ + integer value of $\frac{15}{9}$ + integer value of $\frac{15}{27}$ = 5 + 1 + 0 = **6**.

15 × 14 × 13 × ... × 3 × 2 × 1 = 3^6 × n = 3^6 × 1793792000 .

Hence, the correct answer is an option(2) i.e., 6.

---

65. Answer: b

Explanation:

Calculation:

2, 12, 36, 80, 150, X

$1^2 + 1^3 = 2$

$2^2 + 2^3 = 12$

$3^2 + 3^3 = 36$

$4^2 + 4^3 = 80$

$5^2 + 5^3 = 150$

$6^2 + 6^3 = 252$

Hence, option 2 is correct.

---

66. **Answer: c**

Explanation:

Option(3) is correct.

Number of vowels = **5**

Number of consonants from English alphabets = **21**

Number of non-zero digit = **9**

If the position of 3 digit password is fixed, the fone vowel is followed by one non-zero digit followed by one consonant = 5 × 9 × 21 = **945** .

Hence, the correct answer is an option(3) i.e., 945

---

67. **Answer: d**

Explanation:

Option(4) is correct.

Here we have two cases:

_Case I:_When we have 3 coffee cups in one row, 2 coffee cups in another row, and 1 coffee cup in the remaining row (3!).

For row having 3 coffee cups arrangement can be done in only one way.

For row having 2 coffee cups arrangement can be done in three ways.

For row having 1 coffee cup arrangement can be done in three ways.

Total arrangements for case 1 = 3! × 1 × 3 × 3 = **54** .

*Case 2 :*When we have 2 coffee cups in each row (1).

Each row has 2 coffee cups arrangement can be done in three ways.

Total arrangements for case 2 = 1 × 3 × 3 × 3 = **27**

So, total arrangement for given conditions = 54 + 27 = 81.

Hence, the correct answer is an option(4) i.e., 81.

---

68. **Answer: c**

Explanation:

Option(3) is correct.

Let the three consecutive numbers are x – 1, x, and x + 1.

$(x – 1) + x + (x + 1) = (x – 1) (x) (x + 1)$

$3x = x^3 – x$

$3 = x^2 – 1$

$x^2 = 4$

x = +2 or x = –2 or x = 0

So two sets are (1,2,3), (–1,0,1) and (–3,–2,–1)

Hence, the correct answer is an option(3) i.e., only three.

---

69. **Answer: a**

Explanation:

Option(1) is correct.

Number of non-zero digits = 9

So X and Y can be replaced by 9 digits but X and Y are distinct non-zero numbers
So if X is replaced by 9 digits then Y is replaced by 8 digits (9-1)

Therefore, t he number of numbers of the form 0.XY = 9 × 8 = **72** .

Hence, the correct answer is an option(1) i.e., 72.

---

70. Answer: c

Explanation:

Given:

Average weight of *A*, *B*, *C* is 40 kg.

The average weight of *B*, *D*, *E* is 42 kg.

The weight of *F* is equal to that of *B*.

Calculation:

$(A + B + C)/3 = 40$

$A + B + C = 120$ -------(1.)

$(B + D + E)/3 = 42$

$B + D + E = 126$ --------(2.)

As B = F, so we can write F in place of B in equation (2.)

We get, $F + D + E = 126$ -------(3.)

Adding equation (1.) and (3.), we get

$A + B + C + D + E + F = 120 + 126$

$A + B + C + D + E + F = 246$

Avereage weight of A, B, C, D, E and F = 246 / 6 = 41

Hence, option 3 is correct.

---

71. Answer: c

Explanation:

The correct answer is **it is never without some value.**

⭐ Key Points

- As stated in the passage, *'Scientific research is probably **never completely valueless.** However silly and insignificant it may seem, however mechanical and unintelligent the labours of the researchers, **there is always a chance that the results may be of value** to the investigator of talent,'*
- Hence we can say that there is always some value in the scientific research.
- Hence option 3 is correct.

---

72. Answer: c

Explanation:

The correct answer is **any research result is always valuable to an intelligent investigator.**

⭐ Key Points

- As stated in the passage, *'Scientific research is probablynever completely valueless . However silly and insignificant it may seem, however mechanical and unintelligent the labours of the researchers, there is always a chance that the results may be of value to the **investigator of talent,** who can use the facts collected for him by uninspired but industrious researchers as the basis of some fruitful generalization. '*

- Hence we can say that a research result is always useful for the intelligent investigator.
- Hence option 3 is correct.
- Option 1 cannot be correct because a research result is helpful to the intelligent investigator.
- Option 2 all the research results are helpful to the investigator. Not just one.
- Option 4 here the 'must' is used which cannot be true from the given passage.

---

73. Answer: c

Explanation:

The correct answer is **There are people who fail to accumulate money for their needs.**

⭐ Key Points

- **We can imply from the given passage that there are people who are easily influenced by their neighbors/ newspapers who often fail to accumulate enough money for their needs.**
- Such people are under the influence of others and often listen to them and end up making bad decisions and unable to meet the money for their needs.
- **Option 3 is the most appropriate answer for the given question.**

---

74. Answer: a

Explanation:

The correct answer is **People should not be influenced by the opinions of others.**

⭐ Key Points

- The message that the author wants to give here is **not to be influenced by the opinions of others.**

- Hence option 1 is a valid answer.
- Option 2 is cannot be a message as it is not being discussed in the passage.
- Options 3 and 4 are extreme in nature these statements don't reflect the message of the passage.
- Moreover author doesn't tell us outrightly reject the opinions.
- The author tells us not to be influenced by others after making decisions.

---

75. Answer: c

Explanation:

The correct answer is **1, 3 and 4.**

⭐ **Key Points**

- From the given passage, *'Therefore, the **set of existing organisms can never be fully prepared for environmental catastrophes that await life** . An outcome of this is the **extinction of those species which cannot overcome environmental adversity.** This failure to survive, in modern terms, can be attributed to the genomes which are unable to withstand geological vagaries or biological mishaps (infections, diseases and so on).'*
- *'genomes which are unable to withstand geological vagaries or biological mishaps (infections, diseases and so on).'* this means **only genomes** which are **not capable of withstanding biological mishap will go extinct not all genomes.**
- **Hence Statement 2 is not true and statement 3 is true.**
- **Statement 1 is correct** as the organisms cannot be fully prepared for environmental catastrophe and will go extinct.
- **Statement 4 is true** it is clearly mentioned in the passage, ' *In biological evolution on the earth, extinction of species has been a major feature.'*

---

76. Answer: b

Explanation:

The correct answer is **extinction is a function of environment and biological assaults.**

⭐ Key Points

- As stated in the passage, *'The Darwinian explanation for extinct life is once again simple, elegant and at once **convincing–organisms go extinct as a function of environmental or biological assaults** for which their inheritance deems them ill-equipped. Therefore, the so-called Darwinian theory of evolution is not a theory at all. Evolution happens-this is a fact.'*
- **Hence we can conclude that the Darwinian theory of evolution is not a theory at all because the extinction is a function of environment and biological assaults.**

---

77. **Answer: a**

Explanation:

The correct answer is **1 only.**

⭐ Key Points

- Statement 1 is true, From the passage, *' T his failure to survive, in modern terms, can be attributed to the **genomes which are unable to withstand geological vagaries or biological mishaps** (infections, diseases and so on). In biological evolution on the earth, extinction of species has been a major feature. The earth may presently have up to ten million species, yet **more than 90% of species that have ever lived on the earth are now extinct** .'*
- This implies that there are species that can withstand environmental catastrophe and survive.
- **Statement 2 is out of context as the author doesn't discuss the drastic changes in the environment in the given passage,** but talks about the mass extinctions.
- **Statement 3 cannot be true** as Darwinian theory doesn't explain the 'organisms go extinct as a function of environmental or biological assaults'

---

78. Answer: d

Explanation:

The correct answer is **Neither 1 nor 2.**

⭐ **Key Points**

- As stated in the passage, *'Agricultural technology is changing fast. <u>Much of this change is brought about by affluent farmers in the West/Americas. Techniques developed in the West are being adapted in some places to make tropical crops more productive</u> .'*
- As the passage says much of the changes bought by affluent farmers don't imply that the development of agricultural technology is confined to developed countries. **Hence statement 1 is not valid.**
- Hence, **statement 2 is not valid** as **some countries have adapted to the techniques developed in the west.**

---

79. Answer: a

Explanation:

The correct answer is **1 only.**

⭐ **Key Points**

- From the given passage, *'Extending to the smallholders and subsistence farmers of Africa and Asia the best of today's agricultural practices, in <u>such simple matters as how much fertilizers to apply and when</u> , would lead to a <u>greatly increased availability of food for humanity.</u> So would things like better roads and storage facilities, to allow for the carriage of surpluses to markets and reduce wastage."*
- This clearly indicates that **there is a need for changes in farming techniques so as to increase the yield and waste less food.**

- Hence statement 1 is valid.
- Statement 2 is not valid, developed countries may have better infrastructure but we cannot assume from the given passage that wastage of the food is less.

---

80. **Answer: a**

Explanation:

The correct answer is **1 only.**

⭐ **Key Points**

- **Statement 1 is a valid assumption,**
- As stated in the passage, *'In some places in the world, the productivity of staples such as rice and wheat has reached a plateau.* <u>*Neither new strains nor fancy agrochemicals are raising the yields. Nor is there much unfarmed land left that is suitable to be brought under the plough.*</u>*If global temperature continues to rise, some places will become* <u>*unsuitable for farming.'*</u>
- This clearly indicates that g rowing enough food for future generations will be a challenge.
- **Statement 2 is not valid,** the subject of corporate farming is not discussed in the passage. However, the passage suggests the use of technology for better yield and less wastage.