Directions for the following 3 (three) items:

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

Passage–1

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 served 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 infrastructure. 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.

Q.1. 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

Answer: A

According to the passage and logically, heavy dependence on fossil fuels and limited availability of resources cause unsustainability in production patterns. Expansion of recycling is a way to move towards sustainability.

Q.2. 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

Answer: A

Statement 1 is true: As the passage states that most developing countries are hampered by high costs, this statement is true.
Statement 2 & 3 are false: The passage does not talk about the providing loans at nominal

interest rates or encouraging to change the production patterns. So these statements are false.

Passage–2

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 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.

Q.3. 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

Answer: C

The passage mentions soil erosion caused by wind and water. It also mentions that perennial streams and springs are disappearing. It does not mention about shortage of land for common man. So 1 and 3 are correct.

Q.4. What is the value of X in the sequence 20, 10, 10, 15, 30, 75, X?
(a) 105
(b) 120
(c) 150
(d) 225

Answer: (d)

$20 \times 0.5 = 10$
$10 \times 1 = 10$
$10 \times 1.5 = 15$
$15 \times 2 = 30$
$30 \times 2.5 = 75$
$75 \times 3 = 225$

Q.5. An Identity Card has the number ABCDEFG, not necessarily in that order, 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

Answer: A

ABCDEFG is the number and the given numbers are (1, 2, 4, 5, 7, 8, 9). The question says that after deleting two digits from the right the number is divisible by 5, which means E should be 5 from the given numbers. We have to find the sum of digits C, D and E.
From the given options if E is 5, sum of C+D = 8-5 =3 from option a, C+D = 4 from option b, C+D = 6 from option c, C+D = 7 from option d. ..... (1)

After deleting 3 digits from the right, the number is divisible by 2, which means B must be divisible by 4. So the pair of numbers which are divisible by 4 can be 12, 24, 28, 48, 52, 92. So the numbers which satisfy the sum of C+D from (1) are 12, 24, 52. .... (2)

So the number CDE can be 125 or 245 or 525. But as repitition is not allowed 525 cannot be the possible number. So the possible numbers are 125, 245.

After deleting the first digit from the right, the resulting number is divisible by 6. It means that F should be even number. If CDE is 125, then F can be 4 or 8. If CDE is 245, F is 8. ......(3)

After deleting 5 digits from the right, the resulting number is divisible by 2, which means that B is an even number. From (3) when CDE is 125, if F is 4, B is 8. If F is 8, B is 4.
When CDE is 245 and F is 8, there is no other even number that can be placed in the place of B.

So, BCDEF can be 81254 or 41258. So the sum of digits CDE is 1+2+5=8.

Q.6. Two friends X and Y start running and they run together for 50 m in the same direction and reach a point. X turns right and runs 60 m, while Y turns left and runs 40m. Then X turns left and runs 50m and stops, while Y turns right and runs 50 m and then stops. How far are the two friends from each other now?
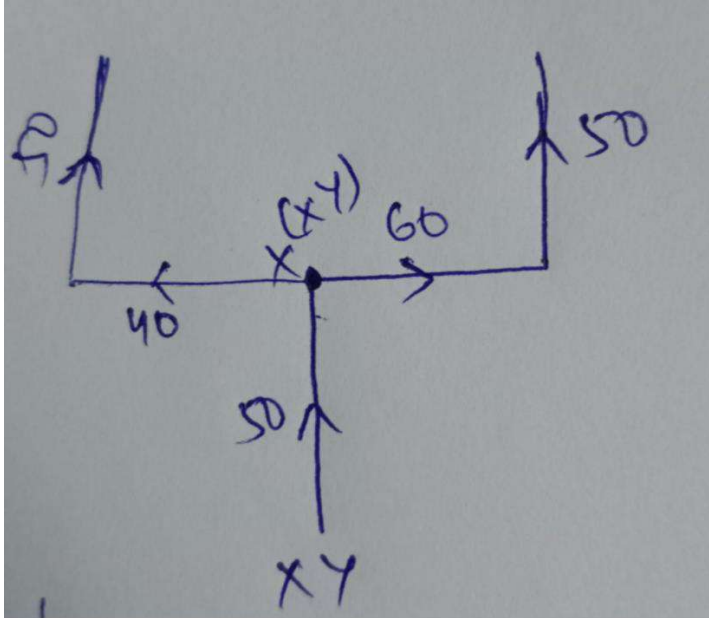(a) 100 m
(b) 90 m
(c) 60 m
(d) 50 m

Answer: (a)

The distance is 60 + 40 =100 from the diagram below.

Q.7. Which date of June 2099 among the following is Sunday?
(a) 4
(b) 5
(c) 6
(d) 7

Answer: D

We take the reference date as 5th June 2022, which is sunday. In a normal year, there is 1 odd day and in a leap year there are 2 odd days. So 5th June 2023 is Monday as 2023 is a normal year. After 2020, the next leap year is 2024. There are 19 leap years from 2024 to 2096 and there are 53 normal years. So there 19x2=38 odd days from leaps years and 53 odd days from normal years. The remainder when 38 is divided by 7 is 3, so there are 3 odd days from leap years. The remainder 53 is divided by 7 is 2, so there are 2 odd days from normal years. So there are 5 odd days in total. So 5th June 2099 is a friday. So 7th June 2099 will be sunday.

Q.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:

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

Answer: D

The total amount is 1840rs. Let x,y,z denote the number of notes of denominations 50rs, 20rs and 10rs respectively. x+y+z=50.
From statement 1, the amount of 50rs notes is 25x50=1250. The remaining amount is 20y+10z=590 ... (1)
Since x=25, y+z= 25 ....(2)
Solving (1) and (2) we get, y=34 which does not satisfy the question.

From statement 2, the amount of 20rs notes is 35x20=700. The remaining amount 50x+10z=1140...(3). Since y=35, x+z=15....(4) The solution obtained by solving equations (3) and (4) also does not satisfy the question.

From statement 3, the amount of 10rs notes is 20x10=200. The remaining amount is 50x+20y=1640....(5). Since z=20, x+y=30....(6). Solving (5) and (6) also does not satisfy the equation.

Q.9. Which number amongst 2_{40}, 3_{21}, 4_{18} and 8_{12} is the smallest?
(a) 240
(b) 321
(c) 418
(d) 812

Answer: B

4^{18} can be written as 2^{36}. 8^{12} can be written as 2^{36}. So 2^{40} is eliminated as it is greater than 2^{36}. 2^{36} can be written as $2^{12}3$ and 3^{21} can be written $3^{7}3$. 2^{12} is 4096 and 3^{7} is 2187. So 3^{21} is the smallest.

Q.10. The digits 1 to 9 are arranged in three rows in such a way that each row 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?
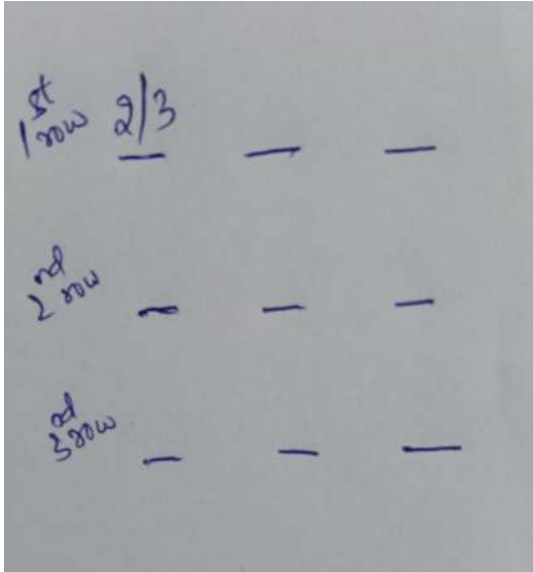(a) 4
(b) 3
(c) 2
(d) 1

Answer: C

As shown in figure, the 1st position of 1st row can only be occupied by 2 or 3. By hit and trial method the only numbers hich satisfy the conditions in the question are 273 or 327.

Directions for the following 4 (four) items:

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

Passage–1

"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, 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?"

Q.11. 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.

Answer: B

Option a is incorrect: The passage does not talk about how we think regarding only in democracy, it says in general.

Option b is correct: This option is correct because the author focus mostly on the skills required to be a politician.

Option c is correct: The passage anywhere does not say about any bars for candidates.
Option d is incorrect: The author is questioning the eligibility of politicians and is urging the voters to select the candidate trained in administration.

Passage –2

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

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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.

Q.12. 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.

Answer: D

Option a is incorrect: The passage does not say that there is confusion, it says that poverty is measured only in monetary terms.

Option b is incorrect: The passage does not measure anything about rural and urban diversities.

Option c is incorrect: The statement does not reflect the appropriate reason why the method followed by India is debatable.

Option d is correct: The passage clearly states how poverty is measured only as buying capacity.

Q.13. 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.

Answer: A

Option a is correct: The passage clearly states that poverty is measured only on purchasing power ignoring all others
.**Option b is incorrect:** This option is rather extreme and nothing in the passage talks about the factors affecting the purchasing power.
Option c is incorrect: There is no mention of income being a temporary or permanent condition.
Option d is incorrect: The passage does not lay out any time consideration.

Q.14. What does the author mean by 'poverty of a life'?

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(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.

Answer: A

Option a is correct: The passage states that poverty of life is lack of opportunities and it is not only income.

Option b is incorrect: The passage does not talk anything about rural or urban areas.

Option c is incorrect: The passage talks about lack of opportunities due to social and personal constraints. It does not talk about missed opportunities.

Option d is incorrect: The passage does not talk anything about human choices.

Q.15. X and Y run a 3 km race along a circular course of length 300m. 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)?
(a) 2
(b) 3
(c) 4
(d) 5

Answer: B

The ratio of speeds of X and Y is 3:2. So, when X completes 300meters (1 round), Y completes 200 meters. By the time X completes 600 meters (2 rounds), Y completes 400 meters. By the time X completes 900 meters (3 rounds), Y completes 600 meters (2 rounds). So when X completes 3 rounds and Y completes 2 rounds they meet each other.
When X completes 1800 meters, Y completes 1200 meters, they meet each other again.
When X completes 2700 meters, Y completes 1800 meters and they meet each other again.

Q.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'?
(a) OGXPMLD
(b) OGXQMLE
(c) OFXPMLE
(d) OFXPMLD

Answer: D

If the letters are written in reversed format A is represented by Z and Z is represented by A. Similarly, L is represented by O, U by F, C by X, K by P, N by M, O by L and W by D. So LUCKNOW is represented by OFXPMLD.

Q.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?
(a) 151
(b) 150
(c) 149
(d) 148

Answer: C

As two players are required to play a match, if there are 4 players 3 matches can be played. Similarly, when there are 150 entrants, 149 matches can be played.

Q.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?
(a) 8
(b) 12
(c) 16
(d) 24

Answer: B

The odd numbers are 1, 3, 5, 7, 9. Since the number has to be divisible by 5, the 3rd digit will be 5. So the remaining 2 places are to be filled by 4 numbers 1, 3, 7, 9. Since repetition is not allowed, 2nd digit can be filled in 4 ways (1, 3, 7, 9) and 1st digit can be filled in 3 ways. So the number can be filled in 4x3=12 ways.

Q.19. Consider the Question and two Statements given below:
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

Answer: D

If x=2, then Statement 1 will be true as 2/3 is not an integer. Statement 2 will also be true because 3x will be 6 which is an integer.
If x=2/3, then statement 1 will be true as 2/9 is not an integer. Statement 2 will be true as 3x will be 2 which is an integer.
But we cannot say from either individual statements or both statements together if x is an integer.

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Q.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?
(a) 5%
(b) 10%
(c) 12.5%
(d) 15%

Answer: B

Let us suppose the price of the item initially is 100.
After increasing 25%, the price will be 100x1.25=125
After decreasing 20%, the price will be 125x0.8=100
After again increasing 10%, 100x1.1=110

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

Passage
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.

Q.21. 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

Answer: D

Statement 1 is incorrect: The passage states that much of the technology is brought by west/americas. It does not say that development of technology is

confined only to developed countries.

Statement 2 is incorrect: The passage states that agricultural technology developed in west is adapted in some places, So we cannot say that it is not adapted in developing countries.

Q.22. 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

Answer: A

Statement 1 is correct: The passage states that technology should be extended to small and subsistence farmers. So this statement is correct.

Statement 2 is incorrect: The passage does not state anything about wastage of food.

Q.23. Based on the above passage, the following assumptions have been made:
1. Growing enough food for future generation 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

Answer: D

Statement 1 is incorrect: We cannot say for sure that growing food will be a challenge for future generation from the passage.

Statement 2 is incorrect: The passage does not state anything about corporate farming.

Q.24. 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 possible?
(a) 12
(b) 18
(c) 24
(d) 36

Answer: C

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CSAT EXPLANATIONS

A_ _ E _ or E _ _ A _ or _ A _ _ E or _ E _ _ A can be the ways in which A and E can be arranged. So it is 4 ways. In the remaining 3 places B,C and D can be arranged in 3! ways, i.e. 6 ways. So the total number of ways is 6x4=24 ways.

Q.25. Consider the Question and two Statements given below:

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 Questions

(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

Answer: D

From statement 1, we know that Z is sibling of X, but we do not know the gender of Z.

From statement 2 also we do not know the gender of Z.

From both statements 1 and 2 together also we do not know the gender of Z, to say if Z is the brother of X.

Q.26. 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?

(a) 40 m

(b) 40.4 m

(c) 50m

(d) 50.5 m

Answer: B

If there are two plants, then there will be one gap between them. Similarly, if there are 101 plants, then there will be 100 gaps between them which is equal to 1.01 kms. Then 1 gap is equal to, 1.01/100= 10.1 meters. So the gap between 5 consecutive plants will be 4x10.1 = 40.4 meters.

27. *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?

(a) 10

(b) 13

(c) 15

(d) 36

Answer: C

There are 3 ways from A to B and there are 4 ways from B to C. So we can go from A to C in 3 x 4 = 12 ways.

It is given in question that there are 3 ways from A to C directly. So the total number of ways in which C can be reached from A is 12+3=15 ways.

28. *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?
(a) 76
(b) 68
(c) 60
(d) 52

Answer: D

We can easily solve this question from options.
Option d satisfies the question. So if A has 52 coins in the beginning, he gives 28 coins to B. So A is now left with 24 coins. B gives 16 coins to C and is now left with 12 coins. C gives 10 coins to D and is left with 6 coins. D now has 10 coins which is the smallest two-digit number.

Q.29. In the series AABABCABCDABCDE.., which letter appears at the 100th place?
(a) G
(b) H
(c) I
(d) J

Answer: C

A is 1 term, AB is 2 terms, ABC is 3 terms. So
1+2+3+4+5+6+7+8+9+10+11+12+13=91, to this if we add 9 terms then it will be 100th place. So the 9th term is I.

Q.30. 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?
(a) 22
(b) 28
(c) 32
(d) 38

Answer: A

There are 4 persons between A and B , A _ _ _ _ B. There are 7 perons between B and C. Since we have to find the minimum number of persons , we have to place C before B. So the positions will be, C _ _ A _ _ _ _ B. There are 13 persons behind A, so there will be 8 persons after B. And there are 11 persons ahead of C. So the total number of persons will be 11+9(from C to B)+8=28.
But we have to find the minimum number of persons, so if we take the 11 persons ahead of

C in the reverse direction, then there will be 3 persons after B. And if we take 13 persons behind A in the reverse direction, then there will be 10 persons before C. 10 C _ _ A _ _ _ _ B 3. Then the total number of persons will be 10+9(C to B)+3 = 22.

Directions for the following 4 (four) Items:
*The following **two passages** and answer items that follow the passages. Your answers to these items should be based on the passages only.*

Passage-1
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.

Q.31. 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

Answer: C

Statement 1 is correct: The passage states that species are never fully prepared for environmental catastrophes, so this statement is correct.

Statement 2 is incorrect & 3 is correct: The passage clearly states that genomes which are unable to withstand geological vagaries will become extinct. So we cannot say that all existing species will become extinct.

Statement 4 is correct: The passage states that extinction is a major feature.

Q32. 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

Answer: C

Option a is incorrect: The creationist doctrine is not able to explain evolution, so there is no reason to question it.

Option b is incorrect: Extinction is a function of environment and biological but this is not the reason why Darwinian theory is not a theory.

Option c is correct: The passage states that it is not a theory at all because there is no evidence to refute it and it has to be accepted.

Option (d) is incorrect: The passage states that the creationist doctrine fails to satisfactorily address evolution and the existence for organism is attributed to adaptation to these changes.

Q.33. 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

Answer: A

Statement 1 is true: The passage states that species that overcome environmental adversity will survive.

Statement 2 is false: The passage states that 90% of the species are extinct but it does not state that it is due to environmental changes.

Statement 3 is false: Darwin's theory explains evolution.

Passage-2

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.

Q.34. 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.

Answer: D

Statement 1 is wrong: The passage talks about water consumption for production of various things. It does not talk about pushing for cereal based diets.

Statement 2 is wrong: The passage does not talk about increasing agricultural production.

Statement 3 is wrong: The passage does not talk about changes in cultural and social behaviour of people. It talks about dietary and energy consumption changes.

Statement 4 is correct: The passage talks about how more water is required for production of meat and use of electronic gadgets.

Q.35. How many seconds in total are there in x weeks, x days, x hours. x minutes and X seconds?

(a) 11580x
(b) 11581x
(c) 694860x
(d) 694861x

Answer: D

The number of seconds in X weeks = 7 x 24 x 60 x 60 x X = 604,800X
The number of seconds in X days = 24 x 60 x 60 x X = 86400X
The number of seconds in X hours = 60 x 60 x X = 3600X

The number of seconds in X minutes = 60 x X = 60X

The number of seconds in X seconds = X

So the total number of seconds = 604,800X + 86,400X + 3600X + 60X + X = 694861X

Q.36. 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 Rs son is P. There are two couples in the family. Which one of the following is correct?

(a) is the grandfather of T

(b) is the grandmother of T

(c) R is the mother of P.

(d) T is the granddaughter of

Answer: D
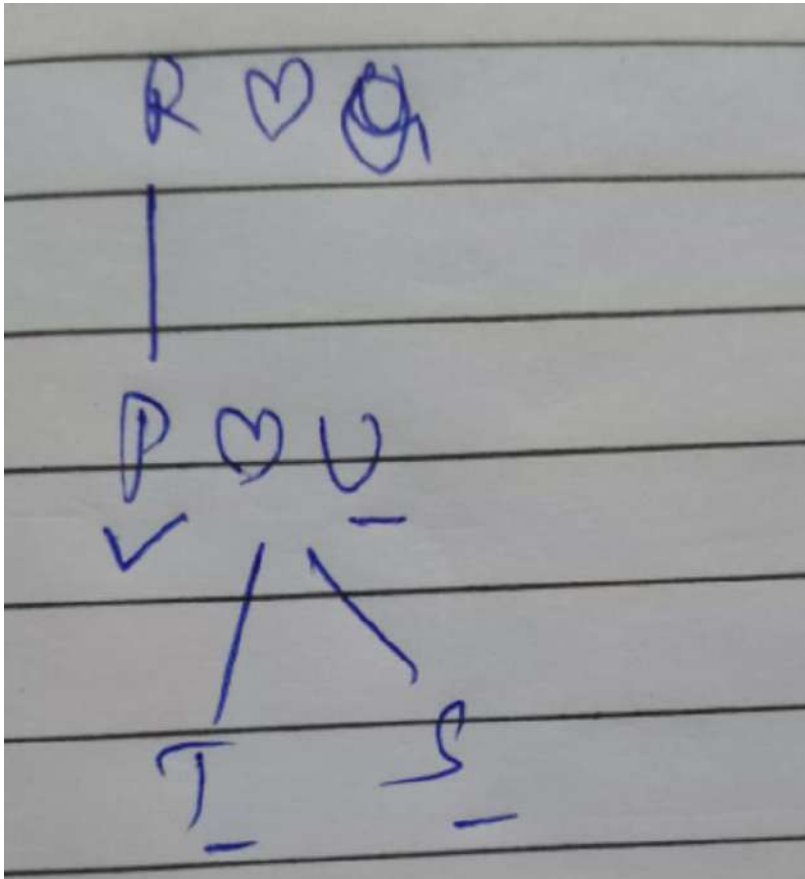
From the given statements, R and Q are a couple. P and U are a couple whose daughters are T and S. So, T is the grand daughter of Q.

Q.37. Consider the Question Statements given below in respect of and two three cities P, Q and R in a State:

Question: How far is city P from city Q ?

Statement-1: City 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
Answer: D

Statement 1 says that city Q is 18kms from city R.
Statement 2 says that city P is 43kms from city R. So P can be on either directions of R.
Combining both the statements also we cannot say on which side of R is P, to determine the distance between P and Q.

Q.38. 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 :
Statement-1 : All pens are books.
Statement-2 : No chair is a pen.
Conclusion-I : All chairs are books.
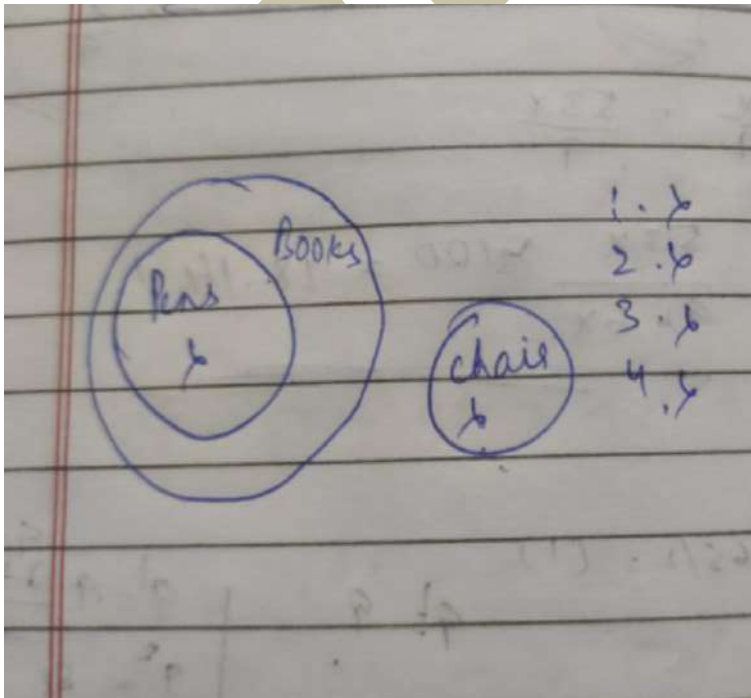Conclusion-II : Some chairs are pens.
Conclusion-III : All books are chairs.
Conclusion-IV : No chair is a book.
Which one of the following is correct?
(a) Only Conclusion-1
(b) Only Conclusion-11
(c) Both Conclusion-III and Conclusion-IV
(d) None of the Conclusion follows
Answer: D

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From the venn diagram drawn, we can say that all chairs cannot be books. Some chairs are pen is false as there is no connection between chair and pen according to statement 2. All books are chairs are also false because there is no interaction between books and chairs. No chair is book is true according to the diagram, but if we negate the conclusion we get the statement some chairs are books, which can be true, so no chair is book is a false statement.

Q.39. 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:

Statement-1 : Some doctors are teachers
Statement-2 : All teachers are engineers.
Statement-3 : All engineers are scientists.
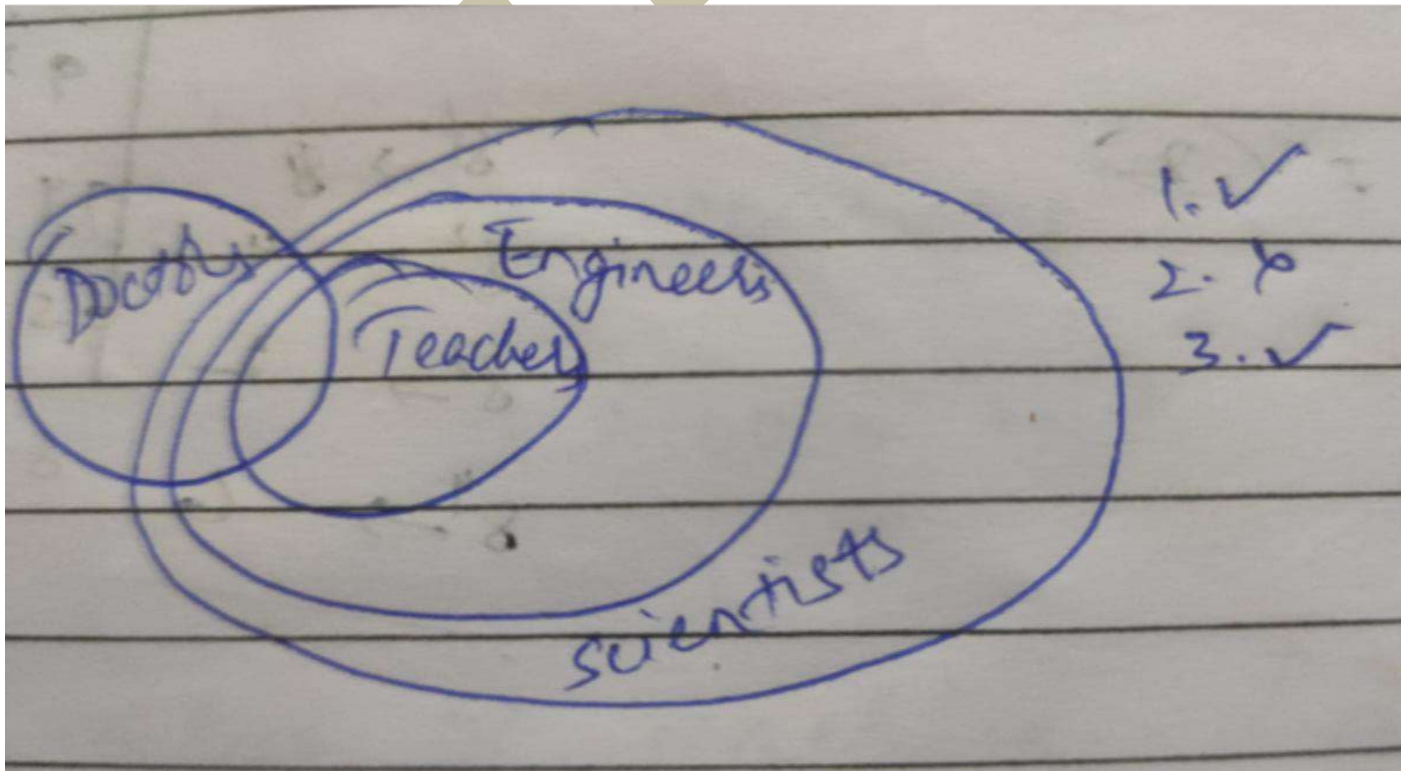Conclusion-I : Some scientists are doctors.
Conclusion-II : All engineers are doctors.
Conclusion-III: Some engineers are doctors.
Which one of the following is correct?
(a) Only Conclusion-I
(b) Only Conclusion-II
(c) Both Conclusion-I and Conclusion-III
(d) Both Conclusion-I and Conclusion-II
Answer: C

From the venn diagram drawn, we can say that conclusion 1 some engineers are doctors is true. Conclusion 2 all engineers are doctors is false. Conclusion 3 all engineers are doctors is true.

Q.40. 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 sits in between B and H. Which one of the following is definitely correct?
(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

Answer: D
Trying all the different possibilities, it is not possible to arrange.
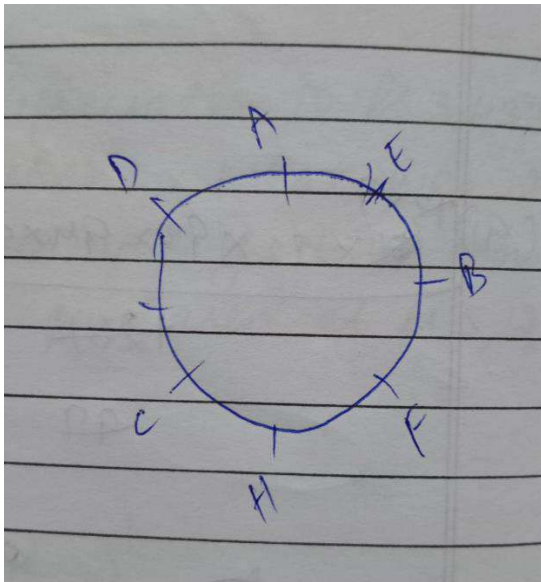
Directions for Read the following 4 (four) Items:
*following **two passages** and answer that follow the passages. Your answer to these items should be based on the passages only.*

Passage-1
For two or three generations past, ever-increasing number of individuals have been living as workers merely, not as human beings. An excessive amount of labor 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 dependent more on cinema than on theatre, more on newspapers, magazines and crime stories than on serious literature.

Q.41. 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

Answer: B
Option b is correct as the passage states that man is burdened by excessive amount of work.

Q.42. 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

Answer: B

Option a is incorrect: The passage does not say about the intellectual capability of man.

Option b is correct as the passage mentions that man does not seek self-improvement , he seeks entertainment to forget his usual activities as he is strained by excessive labour.

Option (c) is incorrect: The passage says that man is so pressurised by excessive labour that he wants to be mentally idle. It does not say anything about man's interest in materialism.

Option (d) is incorrect: The passage says man loves amusement as a result of overstrain.

Passage-2
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.

Q.43. 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

Answer: B

Statement 1 is false: The passage talks about the number of working population and old age people. It does not state anything about illiterate people.

Statement 2 is correct: The passage states that demographic dividend is increasing which means the young working population is increasing and the old population is decreasing.

Statement 3 is false: The passage does not state anything about the stabilization of population.

Q.44. 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

Answer: D

Statement 1 is false: The passage does not state that demographic dividend is essential for rapid increase in economic growth rate.

Statement 2 is false: The passage does not state that promotion of higher education is essential for economic growth.

Q.45. Five friends P. O, X, Y and Z purchased some notebooks. The relevant information is given below:
1. Z purchased 8 notebooks more than X did.
2. P and together purchased 21 notebooks.
3. O 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

Answer: A

Let p, q, x, y, z be the number of books with P, Q, X, Y and Z respectively.

z = x + 8 ...(1)

p + q = 21 ....(2)

q = p - 5 ....(3)

x + y = 28 ... (4)

p = x + 5 ...(5)

Solving (2) & (3), p = 13, q = 8. Substituting p in (5), x = 8. Substituting x in (4) & (1), we get y = 20 and z = 16.

So the total number of books = 13+8+8+20+16 = 65. The price of each book is 40, the total price = 40 x 65 = 2600.

46. 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

(a) 10 minutes slow

(b) 5 minutes slow

(c) 10 minutes fast

(d) 5 minutes fast

Answer: D

Total time taken by the man to come back home = 16 – 14.5 = 1.5 hours = 90 minutes

Out of which he stayed in the village for 25 minutes.

Then his total travelling time will be = 90 – 25 = 65 minutes

The return route was 1.25 times the initial route. As the distance is increased by 25%, time taken must have increased by 25% too. So, if initial time was 100 units, now it must be 125 units.

It is also given that while returning he drove twice as fast. So, time taken will be halved. Then time taken while returning back = 125/2 = 62.5 units

So, 100 + 62.5 = 65 minutes

Or 162.5 units = 65 minutes

So, 100 units = (65/162.5) × 100 = 40 minutes

That means the man took 40 minutes to reach to the village.

Then the actual time at that moment = 14:30 + 40 minutes = 15:10 hours

So the village clock is 15:15 – 15:10 = 5 minutes fast

Q.47. 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 three times that of 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?

(a) 147

(b) 150

(c) 294

(d) 300

Answer: C

Let the number of pens with A, B, C, D & E be a, b, c, d, e respectively.

a = 2b = 3c = 4d = 5e = 6f

LCM of 2, 3, 4, 5 and 6 is 60. Let us assume a=60k. Then b=30k, c=20k, d=15k, e=12k, f=10k. When k=2, all the values wil be even. So the total number of minimum books will be 120+60+40+30+24+20 = 294

Q.48. Six Persons A, B, C, D, E and F are sitting equidistant form each other around a circular table (facing the centre of the table).

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

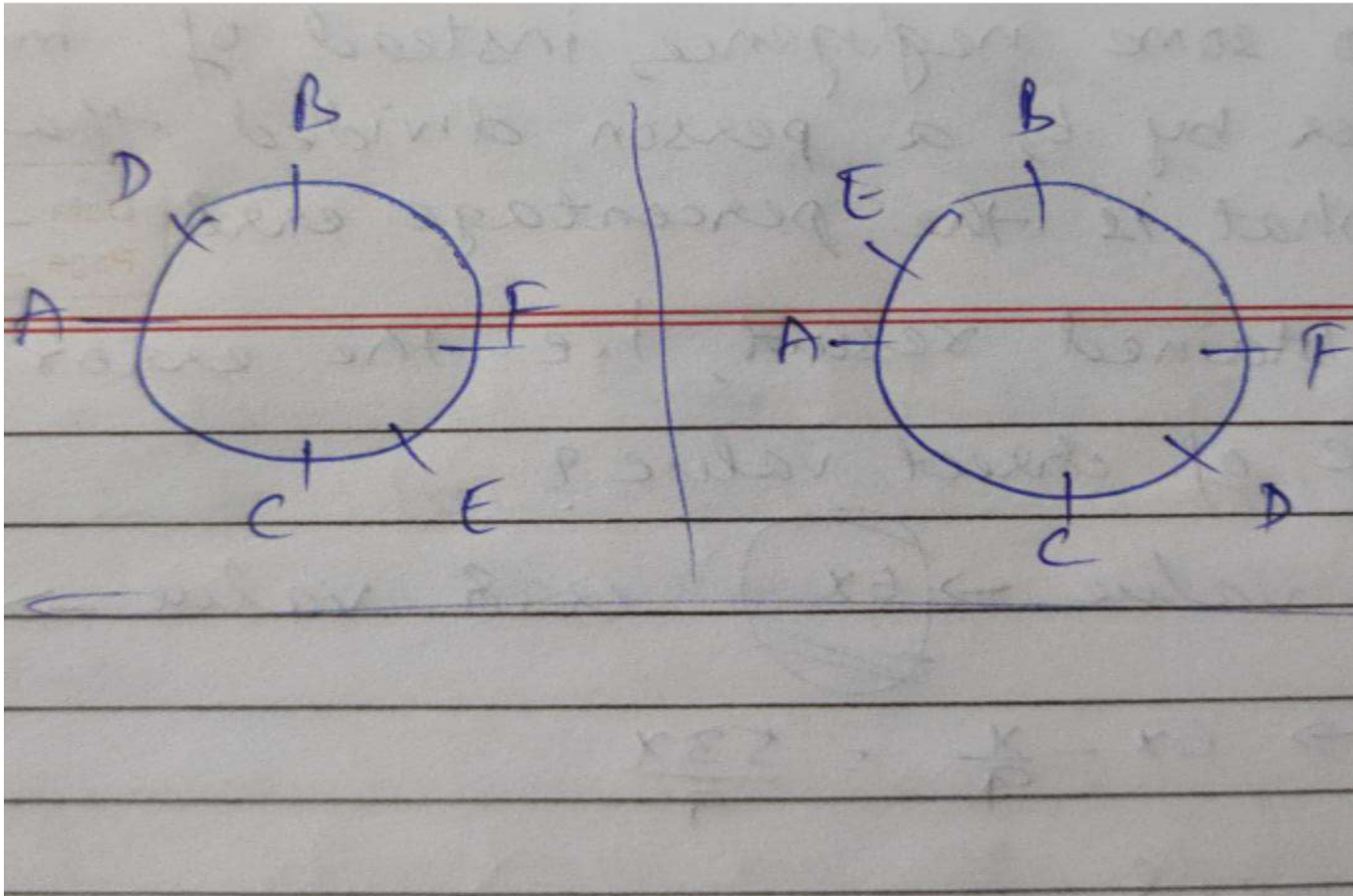(d) Both Statement-1 and Statement-2 are not sufficient to answer the Question

Answer: D

we have two possibilities as shown in the diagram. so we cannot say for sure who is sitting to the immediate left of A.

Q.49. Consider the Question and two Statements given below:
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 Statement?
(a) Statements-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

Answer: C
From statement 1, manisha=mother-24.
From statement 2, (manisha+5) : (mother+5) = 3 : 5.
Solving the above, we get mother = 60, manisha = 44

Q.50. Six lectures A B C D E and F, each of one hour duration, are scheduled between 8:00 am, and 2:00 p.m.
Consider the Question and two Statements given below:
Question: Which lecture is in the third period?
Statement-1: Lecture F is preceded by A and followed by C
Statement-2: There is no lecture after lecture 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

Answer: D

From statement 1, we can write the order of periods as A F C.
From statement 2, we can say that B is the last period.
We do not know the position of lectures D & E. So we cannot say anything about the third period from the above 2 statements.

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

Passage-1
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.

Q.51. 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.

Answer: A
Option a is correct: The educated population only make best use of leisure time to gain technical knowledge.
Option b & d are incorrect: Usage of machines may create leisure for people. But all economic development will not lead to creation of leisure. The author has cautioned that too much of leisure can be tedious, and has recommended that education is required to best use leisure time.

Option c is incorrect: For leisured population to be happy, they must be educated. If they are not educated, the leisure time might be detrimental to the population. So, it would be incorrect to say that an increase in the educated population leads to an increase in happiness among people.

Passage-2
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

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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.

Q.52. 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.

Answer: B

Option a is incorrect: The author only says about a tendency for adults to be less thrilled by happy events, nowhere the author makes an inference that adults cannot be thrilled by presents at all.

Option b is correct: Adults they look too forward or too backward, they are too anxious, too skeptical.

Option c is incorrect: The author says, "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." and "Perhaps we are too cautious, too anxious, too sceptical."

Option d is incorrect: The author nowhere mentions about the capacity of the adult to feel loved or joy.

Q.53. 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

Answer: A

Option a is correct: The passage clearly states that we look too forward or too backward. The author says that children do not worry about past or present.

Option b is incorrect: The author says that adults, like children, must not look forward or far backward. The focus should be on living with joy in the present.

Option c is incorrect: The author states that "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." From which we can say that adults feel less thrilled with new things.

Option d is incorrect: The author is against receiving and giving joy only partially, but it is only one of the objections.

Q.54. Let A, B and C represent distinct non-zero digits. Suppose x is the sum of all 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

Answer: A
The three-digit numbers are represented by ABC, where A, B, and C are non-zero digits.
Using 3 distinct digits we can make $3 \times 2 \times 1 = 6$ three-digit numbers.
Let us assume x will be the sum of these 6 three-digit numbers.
We need to find the two values of x closest to 1000, one just below it (which will be the greatest 3-digit value of x), and the other just above it (which will be the lowest 4-digit value of x).
Going by hit and try, we to have to find the value of x that reaches close to 1000.
Let the three digits be the minimum possible ones, i.e. 1, 2, and 3.
So, we get x = 123 + 132 + 213 + 231 + 312 + 321 = 1332
This is the least possible value of x. So, statement 1 is correct, and statement 2 is incorrect.

Q.55. 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?
(a) 6
(b) 8
(c) 10
(d) 12

Answer: C
Since the difference between two digits is atleast 2 and the numbers are in decreasing order.
So the numbers can be, 753, 752, 751, 742, 741, 731, 642, 641, 631, 531.

Q.56. 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?
(a) 24
(b) 16
(c) 12
(d) 8

Answer: (a)

Q.57. 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?
(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

Answer: (d)

Since the comparative efficiencies of man and women are not known, we cannot determine the time taken by 12 men and 24 women to complete the given work. Hence, the data is inadequate to draw any conclusion.

Q.58. What is the remainder when 91x92x93x94x95x96x97x98x99 is divided by 1261?
(a) 3
(b) 2
(c) 1
(d) 0

Answer: (d)

$(91 \times 92 \times 93 \times 94 \times 95 \times 96 \times 97 \times 98 \times 99)$. So remainder is zero.

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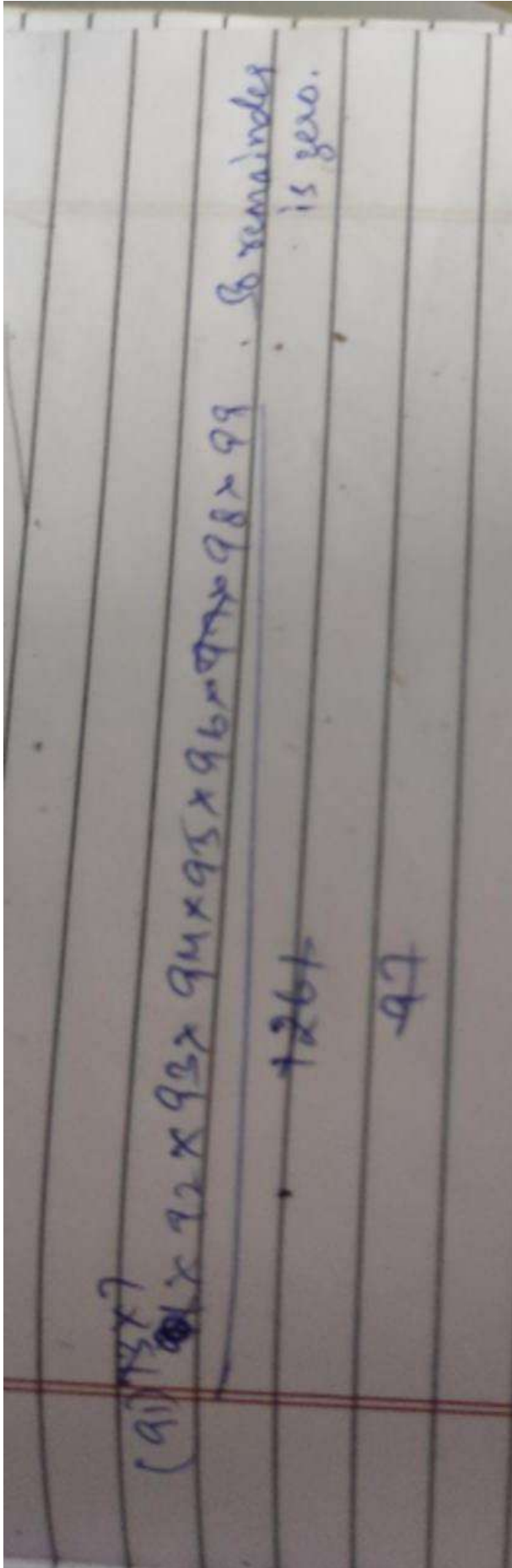
Q.59. Consider the following statements in respect of a rectangular sheet of length 20 cm and breadth 8 cm:
1. It is possible to cut the sheet exactly into 4 square sheets.
2. It is possible to cut the sheet into 10 triangular sheets of equal area.

Which of the above statements is are correct?
(a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

Answer: (c)

Q.60. 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 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

Answer: (a)

Directions for the following 3 (three) items:
*Read the following **two passages** and answer the items that follow the passages. Your answers to these items should be based on the passages only.*
Passage–1
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.
Q.61. 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.

Answer: (c)

Q.62. 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

Answer: (a)

Passage–2

"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."

Q.63. 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

Answer: (c)

Q.64. 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?
(a) 15000
(b) 12000
(c) 9600
(d) 5000

Answer: (a)

Q.65. 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?
(a) 1063
(b) 1073
(c) 1083
(d) 1183

Answer: (c)

Q.66. Let p be a two-digit number and q be the number consisting of same digits written in reverse order. If p x q = 2430, then what is the difference between p and q?
(a) 45
(b) 27
(c) 18
(d) 9

Answer: (d)

Q.67. Consider the following statements in respect of two natural numbers p and q such that p is a prime number and q is a composite number:
1. p x 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

Answer: (d)

Q.68. Consider the following statements :
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

Answer: (c)

Q.69. There are two containers X and 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?
(a) m=n
(b) m> n
(c) m<n
(d) Cannot be determined due to insufficient data

Answer: (a)

Q.70. A pie chart gives the expenditure on five different items A, B, Q 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?
(a) 112/9
(b) 125/6
(c) 155/9
(d) 250/9

Answer: (d)

Directions for the following 3 (three) items:
*Read the following **two passages** and answer the items that follow the passages.*
Your answers to these items should be based on the passages only.
Passage–1
To encourage research is one of the functions of a university. Contemporary universities have encouraged research, not only in those cases where research is

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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 objects is not scientific but literary or historical, then there is a risk of the whole business becoming merely futile.

Q.71. 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

Answer: (c)

Q.72. 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

Answer: (c)

Passage–2
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.

Q.73. Which one of the following best reflects the practical, rational and lasting solutions?
(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

Answer: (d)

Q.74. $15 \times 14 \times 13 \times ... \times 3 \times 2 \times 1 = 3^m \times n$
Where m and n are positive integers, then what is the maximum value of m?
(a) 7
(b) 6
(c) 5
(d) 4

Answer: (b)
$15 \times 14 \times 13 \times 12 \times 11 \times 10 \times 9 \times 8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1 = 3^m \times n$

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Numbers which are multiple of 3 = 15 × 12 × 9 × 6 × 3 = (3 × 5) × (3 × 4) × (3 × 3) × (3 × 2) × 3 = 3_6 × (5 × 4 × 2)

Therefore, the maximum value of m is 6.

Hence, option (b) is the correct answer.

Q.75. What is the value of X in the sequence 2, 12, 36, 80, 150, X?

(a) 248

(b) 252

(c) 258

(d) 262

Answer: (b)

Q.76. One non-zero digit, one vowel and one consonant from English alphabet (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

Answer: (c)

Q.77. There are 9 cups placed on a table arranged in equal number of rows 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

Answer: (d)

Q.78. The sum of three consecutive integers is equal to their product. How many such possibilities are three?

(a) Only one

(b) Only two

(c) Only there

(d) No such possibility is there

Answer: (c)

Q.79. What is the number of numbers of the form 0.XY, where X and Y are distinct non-zero digits?

(a) 72

(b) 81

(c) 90

(d) 100

Answer: (a)

Q.80. 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?
(a) 40.5 kg
(b) 40.8 kg
(c) 41 kg
(d) Cannot be determined as data is inadequate

Answer: (c)