

Date : 03-01-2021

Max. Mark : 100

SOLUTIONS

Time allowed : 120 mins.

1. Match the major types of vegetation in List -I with their important trees in List - II.

List-I	List-II
(p) Mangrove Forests	(i) Teak
(q) Montane Forests	(ii) Babool (Acacia)
(r) Tropical Thorn Forests	(iii) Pine
(s) Tropical Deciduous Forests	(iv) Sundari

- (A) (p)-(i), (q)-(iii), (r)-(iv), (s)-(ii) (B) (p)-(ii), (q)-(iii), (r)-(iv), (s)-(i)
(C) (p)-(iv), (q)-(iii), (r)-(ii), (s)-(i) (D) (p)-(iii), (q)-(ii), (r)-(iv), (s)-(i)

Ans. C

Sol. Sundari trees found in Mangrove forests in Sundarban delta West Bengal

Pine found in Montane Forests

Bamboo and Acacia found in Tropical Thorn forests

Teak found in Tropical Deciduous forests

2. The experimental projects for generating which type of energy can be found in Puga valley in Ladakh and Manikaran in Himachal Pradesh?

- (A) Solar energy (B) Wind energy (C) Atomic energy (D) Geothermal energy

Ans. D

Sol. The experimental projects for generating Geothermal energy can be found in puga valley in ladakh and Manikaran in Himachal Pradesh.

3. Which mine is found in Khetri, situated at the foothills of the Aravalli Range, Rajasthan?

- (A) Bauxite (B) Lignite (C) Coal (D) Copper

Ans. D

Sol. Copper Mine is found in Khetri, situated at the foothills of the Aravali Range, Rajasthan

4. Match the rivers in List -I with the state of their origin in List-II

List-I	List-II
(p) Mahanadi	(i) Uttarakhand
(q) Godavari	(ii) Chhattishgarh
(r) Kaveri	(iii) Maharashtra
(s) Ganga	(iv) Karnataka

- (A) (p)-(ii), (q)-(iii), (r)-(iv), (s)-(i) (B) (p)-(iii), (q)-(ii), (r)-(iv), (s)-(i)
(C) (p)-(i), (q)-(iii), (r)-(iv), (s)-(ii) (D) (p)-(iv), (q)-(i), (r)-(ii), (s)-(iii)

Ans. A

Sol. Mahanadi originated from Chhattisgarh
Godavari originated from Maharashtra
Kaveri originated from Karnataka
Ganga originated from Uttarakhand

5. Which of the following types of soils have mostly come into existence due to weathering of ancient crystalline and metamorphic rocks?

- (A) Regur and Black soils (B) Red and yellow soils
(C) Arid and Semi-arid soils (D) Peaty and Marshy soils

Ans. B

Sol. Red and yellow soils and have mostly come into existence due to weathering of ancient crystalline and metamorphic rocks.

6. What is the full form of ITCZ?

- (A) Indian Tropical Convergence Zone (B) Inter Tropical Climate Zone
(C) Inter Tropical Convergence Zone (D) Inter Temperate Convergence Zone

Ans. C

Sol. The full form of ITC Z is inter tropical convergence zone.

7. Chambal is a tributary of which of the following rivers?

- (A) The Narmata (B) The Yamuna (C) The Godavari (D) The Tapti

Ans. B

Sol. The Chambal is the tributary of the Yamuna River.

8. The cultivation of which plantation crop was initially introduced on the Baba Budan hills In Kamataka?

- (A) Coffee (B) Tea (C) Rubber (D) Sugarcane

Ans. A

Sol. The cultivation of coffee plantation crop was initially introduced on the Baba Budan Hills in Karnataka.

9. Which of the following islands is the largest inhabited riverine island located in the Himalayan river system of India?

- (A) Majuli island (B) Teressa island (C) Hope island (D) Umananda island

Ans. A

Sol. Majuli Island is the largest inhabited Riverine Island located in the Himalayan River system of India.

10. What is the criteria to consider a person as a literate according to census of India 2001?

- (A) 6 years old and above, and can read and write with understanding in any language
(B) 7 years old and above, and can read and write with understanding in any language
(C) 5 years old and above, and can read and write with understanding in any language
(D) 9 years old and above, and can read and write with understanding in any language

Ans. B

Sol. 7 years old and above and can read and write with understanding in any language consider a person as a literate according to census of India 2001.

11. Which of the following is the CORRECT classification of resources on the basis of origin?

- (A) Biotic resources and Abiotic resources
(B) Renewable and non-renewable resources
(C) National resources and International resources
(D) Individual resources and Community owned resources

Ans. A

Sol. Resources can be classified on the basis of origin that Biotic resources and Abiotic resources.

12. Which of the following options is the youngest mountain range of India?
(A) Himalayan mountain range (B) Aravalli mountain range
(C) Vindhya mountain range (D) Satpura mountain range

Ans. A

Sol. Himalayan mountain range is the youngest mountain range of India.

13. Who among the following leaders represented Great Britain in the Treaty of Versailles' that was signed at Paris and brought World War I to an end?
(A) Georges Clemenceau (B) Woodrow Wilson
(C) Vittorio Emanuele Orlando (D) David Lloyd George

Ans. D

Sol. David Lloyd George represented Great Britain in the Treaty of Versailles that was signed at Paris and brought World War I to an end.

14. Identify the first satellite completely designed and fabricated in India and launched by a Soviet Kosmos-3M rocket in 1975.
(A) Rohini (B) Bhaskara-I (C) INSAT-1A (D) Aryabhata

Ans. D

Sol. Aryabhata the first satellite complete designed and fabricated in India and launched by the Soviet Cosmos 3M rocket in 1975.

15. Which eminent personality from Odisha was appointed as a member of the Royal Agricultural Commission in 1927?
(A) Karmaveer Gourishankar Ray (B) Kashinath Das
(C) Maharaja Krushna Chandra (D) Sashi Bhusan Rath

Ans. C

Sol. Maharaja Krishna Chandra Gajapati from Orissa was appointed as a member of the royal agricultural commission in 1927.

16. Which of the following options is INCORRECT with reference to the important aspects of the process of Urbanisation in India?
(A) Economic aspects (B) Socio-cultural aspects
(C) The demographic and spatial aspects (D) Religious aspects

Ans. D

Sol. Religious aspect is not important for the process of urbanization in India.

17. Who of the following became Prime Minister of Italy in 1922 and gave rise to fascism?
(A) Benito Mussolini (B) Victor Emmanuel (C) Dino Grandi (D) Marie Jose

Ans. A

Sol. Benito Mussolini became prime minister of Italy in 1922 and gave rise to Fascism.

18. Which of the following countries was formally granted independence in 1946 after being ruled by United States?
(A) Philippines (B) Sri Lanka (C) Egypt (D) China

Ans. A

Sol. Philippines was formally granted independence in 1946 after being ruled by the United States.

19. Which of the following options listed amongst UNESCO World Heritage Sites is known for its Kalinga Architecture?
(A) Black Pagoda (Sun Temple), Konark (B) Mahabodhi Temple, Bodh Gaya
(C) Jantar Mantar, Jaipur (D) Rani ki Vav, Patna

Ans. A

Sol. Black Pagoda (Sun temple) Konark listed among UNESCO World Heritage Sites is known for its Kaling architecture.

20. Who of the following was arrested at Chandol for having addressed a meeting during the civil disobedience movement in Odisha?
 (A) Harekrushna Mahatab (B) Surendranath Das
 (C) Gopabandhu Choudhury (D) Acharya Harihar

Ans. C

Sol. Gopabandhu Chaudhary was arrested at Chandol for having addressed a meeting during the civil disobedience movement in Odisha.

21. North Atlantic Treaty Organization (NATO) came into existence to provide collective security against the threat posed by which of the following power blocks?
 (A) West Germany (B) Imperial China (C) Arab League (D) Soviet Union

Ans. D

Sol. North Atlantic Treaty organisation (NATO) came into existence to provide collective security against the threat posed by Soviet Union.

22. The famous Treaty of Tordesillas' was signed between which of the following two European powers aimed at settling conflicts over lands newly discovered or explored by Christopher Columbus and other late 15th-century voyagers?
 (A) British and French (B) Portugal and Spain
 (C) Dutch and Denmark (D) Austrian and Germans

Ans. B

Sol. The famous Treaty of Tordesillas was signed between the Portugal and Spain two European Powers aimed at settling conflicts over lands newly discovered or explored by Christopher Columbus and other late 15th century voyagers.

23. The rule of Qing Dynasty ended in 1911 in which of the following Asian countries?
 (A) Thailand (B) Vietnam (C) North Korea (D) China

Ans. D

Sol. The rule Qing Dynasty ended in 1911 in China.

24. Laxman Naik who was arrested from Koraput district of Odisha is associated with which of the following movements of freedom Struggle?
 (A) Salt Satyagraha (B) Quit India Movement
 (C) Khilafat Movement (D) Non-Cooperation Movement

Ans. B

Sol. Laxman Nayak was arrested from Koraput district of Odisha is associated with Quit India Movement Freedom struggle.

25. Choose the alternative that correctly matches the species in Group 1 with their features in Group 2

List-I	List-II
a. Hydra	(i) Species live in colonies
b. Corals	(ii) Species have a solitary-like span
c. Spongilla	(iii) Organism with holes
d. Roundworm	(iv) Species found in the intestine

- (A) a-(iii), b-(i), c-(iv), d-(ii) (B) a-(i), b-(iii), c-(ii), d-(iv)
 (C) a-(ii), b-(i), c-(iii), d-(iv) (D) a-(iv), b-(ii), c-(iii), d-(i)

Ans. C

Sol. Hydra is a fresh water coelenterate that leads a lonely life (Solitary life span)
Corals of phylum coelenterata live in compact colonies of many identical individual polyps.
Spongilla belongs to porifera phylum so are organisms with holes.
Roundworms are generally parasitic and found in the intestine.

- 26.** It does not have a mouth for ingestion of food. It ingests the food by encircling it by forming pseudopodia. When the food is completely encircled, the food is engulfed in the form of a bag called food vacuole. The excess food absorbed is stored in the form of glycogen and lipids. The undigested food gets collected in the food vacuole and thrown out of the body by rupturing cell membrane. Identify the organism.
(A) Chlamydomonas (B) Amoeba (C) Hydra (D) Sea anemone

Ans. B

Sol. Amoeba undergoes phagocytosis to ingest food by encircling it through its pseudopodia (false - foot)

27. Gymnosperms is a term made from two Greek words: Gymno and Sperma which means
(A) Whip-like, flagella (B) Hair-like, cilia (C) Covered, seed (D) Naked, seed

Ans. D

Sol. Gymnosperms means naked seed (seeds not enclosed by fruits) Gymno-naked, sperma-seed

- 28.** The endoskeleton and exoskeleton of various animals are formed from it. It is incorporated into life-forms through the basic process of photosynthesis which is performed in the presence of Sunlight by all life-forms that contain chlorophyll. This molecule's cycle process converts itself from the atmosphere or dissolved in water into glucose molecules. Name the molecule.
(A) Nitrogen (B) Carbon (C) Water (D) Nitrate

Ans. B

Sol. The endoskeleton and exoskeleton of various animals is made up of calcium carbonate. Carbon is incorporated into life forms through photosynthesis (in the form of glucose). Carbon can also convert itself from the atmosphere or dissolved in water into glucose.

So, the molecule is 'carbon'.

- 29.** Two healthy potted plants A and B were taken and kept in dark room for 3 days, they were placed in separate glass plates and a watch-glass containing potassium hydroxide was placed by the side of Plant A. Both the plants were covered with separate bell jars, and vaseline has been used to seal the bottom of the jars and were set-up as air tight. Both the plants were kept in sunlight for 2 hours. Leaves were plucked from each plant and checked for the presence of starch. Due to the non-availability of which of the following components, photosynthesis did not occur in the plant A?
(A) Water (B) Carbon dioxide (C) Chlorophyll (D) Starch

Ans. B

Sol. The KOH kept beside plant A will absorb CO_2 . Due to unavailability of 'carbon dioxide', photosynthesis did not occur in plant A

- 30.** Diverse organisms use different ways to break-down glucose completely into carbon dioxide and water. Sometimes when there is a lack of oxygen in our muscle cells, another pathway for the break-down of pyruvate is taken. Here the pyruvate is converted into lactic acid which is a
(A) Six-carbon molecule (B) Two-carbon molecule
(C) Three-carbon molecule (D) Five-carbon molecule

Ans. C

Sol. Lactic acid formula is $\text{C}_3\text{H}_6\text{O}_3$. So it's a 'three-carbon molecule'.

31. Match the following essential components of environment given in List-I with their meaning given in List-II

List-I	List-II
a. Reduce	(i) plastic bottles can be used for storing things in the kitchen
b. Recycle	(ii) switching off unnecessary lights and fans
c. Reuse	(iii) segregation of wet and dry waste
	(iv) buying individual plastic bottles of water every time after use

(A) a-(ii), b-(iii), c-(i)

(B) a-(i), b-(ii), c-(iii)

(C) a-(iv), b-(i), c-(iii)

(D) a-(iii), b-(iv), c-(i)

Ans. A

Sol. a. Switching off unnecessary lights and fans is an example of reducing the usage of resource.
 b. Prior to the recycling process, segregation of wet & dry wastes are done
 c. Plastic bottles can be used for storing things in the kitchen - one of the ways to reuse resources.

32. Niacin is an important nutrient found in the fish which is an animal product. It is a form of

(A) Vitamin B3

(B) Vitamin B2

(C) Vitamin B1

(D) Vitamin B12

Ans. A

Sol. Niacin Vitamin B3 is an important nutrient found in the fish.

33. Read the following statements regarding function of Golgi apparatus and choose the CORRECT option:

(A) It plays a central role in cellular reproduction, the process by which a single cell divides and forms two new cells

(B) It contains ribosome attached to its surface which are sites for protein manufacture

(C) It helps in storage, modification and packaging of products in vesicles

(D) It helps to keep the cell clean by digesting any foreign material as well as worn-out cell organelles

Ans. C

Sol. Golgi apparatus helps in storage modification and packaging of products in vesicles.

34. Which of the following gas makes up 78% of our atmosphere and it is also a part of many molecules essential to life like proteins, nucleic acids and some vitamins?

(A) Nitrogen

(B) Carbon

(C) Oxygen

(D) Argon

Ans. A

Sol. Nitrogen makes up 78% of our atmosphere and is also a part of proteins, nucleic acids & some vitamins.

35. They are found to be very sensitive to the levels of contaminants like sulphur dioxide in the a, They are commonly found growing on the bark of trees as a thin greenish-white crust. They are considered to be useful bioindicators for air pollution. Name the organism.

(A) Mycorrhiza

(B) Lichens

(C) Amoeba

(D) Euglena

Ans. B

Sol. Lichens are considered as bioindicators for air pollution as they are very sensitive to high levels of pollutants like SO₂ in the air. They commonly grow on bark of trees as a thin crust.

36. Read the following statements regarding the function of Lymph in transportation within the human body and choose the CORRECT option:

- (A) It carries the blood away from the heart to various organs of the body and it ensures that the blood flows only in one direction
- (B) It is divided into smaller vessels to bring blood in contact with all the individual cells
- (C) It circulates around the body and helps to clot the blood during the time of injury
- (D) It carries digested and absorbed fat from intestine and drains excess fluid from extracellular space back into the blood

Ans. D

Sol. Lymph transports absorbed fat from intestine (absorption takes place through lacteals) and also drains excess fluid from extracellular spaces back into blood.

37. Plants also require nutrients for growth and development. Which of the following nutrients are supplied to plants by air and water?

- (A) Nitrogen
- (B) Argon
- (C) Helium
- (D) Oxygen

Ans. D

Sol. Non-mineral elements are supplied to plant by air & water. Those are carbon, oxygen and hydrogen. Among the options given, the answer is oxygen.

38. Match the following scientists given in List-I with their respective discovery given in List-II

List-I	List-II
a. Robert Hooke	(i) Discovered the free-living cells in pond water
b. Antonie van Leeuwenhoek	(ii) Observed the cells in a cork slice with the help of microscope
c. Robert Brown	(iii) Discovered the nucleus in the cell
d. J.E. Purkinje	(iv) Coined the term protoplasm for the fluid substance of the cell

- (A) a-(ii), b-(i), c-(iii), d-(iv)
- (B) a-(iii), b-(i), c-(iv), d-(ii)
- (C) a-(i), b-(iii), c-(ii), d-(iv)
- (D) a-(iv), b-(ii), c-(iii), d-(i)

Ans. A

Sol. a. Robert Hooke observed the cork cells of Quercus (oak tree)
 b. Antonie Van Leeuwenhoek discovered the free-living cells in pond water (protozoans) for the first time.
 c. Robert Brown discovered nucleus in 1831
 d. J.E. Purkinje coined the term protoplasm.

39. If a and b are rational numbers and $(3 + \sqrt{5}) / (3 - \sqrt{5}) = a + b\sqrt{5}$, then the values of a and b are

- (A) a = 5/2 and b = 3/2
- (B) a = 7/2 and b = 3/2
- (C) a = 1/2 and b = 5/2
- (D) a = 3/2 and b = 1/2

Ans. B

Sol. $\frac{3 + \sqrt{5}}{3 - \sqrt{5}} = a + b\sqrt{5}$

rationalising the denominator

$$\frac{3 + \sqrt{5}}{3 - \sqrt{5}} \times \frac{3 + \sqrt{5}}{3 + \sqrt{5}} = a + b\sqrt{5}$$

$$\frac{(3 + \sqrt{5})^2}{(3)^2 - (\sqrt{5})^2} = a + b\sqrt{5}$$

$$\frac{14 + 6\sqrt{5}}{4} = a + b\sqrt{5}$$

$$\frac{7}{2} + \frac{3}{2}\sqrt{5} = a + b\sqrt{5}$$

Now comparing L.H.S. with R.H.S.

$$a = \frac{7}{2}, b = \frac{3}{2} \text{ Hence option(B) is correct.}$$

40. A pair of linear equations in two variables can be presented by two straight lines. In case of which pair of equations do the straight lines coincide?

- (A) $2x + 3y - 9 = 0$ and $4x + 6y - 18 = 0$
 (B) $5x - 4y + 8 = 0$ and $7x + 6y - 9 = 0$
 (C) $2x - y + 9 = 0$ and $6x - 3y + 10 = 0$
 (D) $2x - 3y = 7$ and $3x + 2y = 5$

Ans. A

Sol. Conditions of a pair of linear equations in two variables to coincide.

$$a_1x + b_1y + c_1 = 0$$

$$\text{and } a_2x + b_2y + c_2 = 0$$

$$\text{is } \frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$$

in option (A) $2x + 3y - 9 = 0$ and

$$4x + 6y - 18 = 0$$

$$\frac{2}{4} = \frac{3}{6} = \frac{-9}{-18}$$

$$\frac{1}{2} = \frac{1}{2} = \frac{1}{2}$$

Hence option (A) is correct

41. A bag contains red, white and green balls In the ratio 3 : 4 : 5. If the bag contains 80 green balls, then the total number of balls in the bag is

- (A) 145 (B) 156 (C) 192 (D) 187

Ans. C

Sol. Let the red balls = $3x$

white balls = $4x$

and green balls = $5x$

it is given that $5x = 80$

$$\Rightarrow x = 16$$

So total number of balls in the bag

$$= 3x + 4x + 5x$$

$$= 12x$$

$$= 12 \times 16$$

$$= 192$$

Hence option (C) is correct

42. The elements of a set X are $\{4, 6, 2, 8, A, 12, 15, 10\}$. If the average of the elements of the set X is 8, then the median of the set X is

(A) 7.5

(B) 8

(C) 8.5

(D) 9

Ans. A

Sol. $X = \{4, 6, 2, 8, A, 12, 15, 10\}$

average of elements of X = 8

$$\frac{4+6+2+8+A+12+15+10}{8} = 8$$

$$57 + A = 64$$

Now arranging the elements of Set X in ascending order

2, 4, 6, 7, 8, 10, 12, 15

total no. of elements, $n = 8$ i.e. even

hence median of set

$$X = \frac{\left(\frac{n}{2}\right)^{\text{th}} \text{ term} + \left(\frac{n}{2} + 1\right)^{\text{th}} \text{ term}}{2}$$

$$= \frac{\left(\frac{8}{2}\right)^{\text{th}} \text{ term} + \left(\frac{8}{2} + 1\right)^{\text{th}} \text{ term}}{2}$$

$$= \frac{4^{\text{th}} \text{ term} + 5^{\text{th}} \text{ term}}{2}$$

$$= \frac{7+8}{2} = 7.5$$

Hence option (A) is correct.

43. If a vertical pole of height 9m casts a shadow $3\sqrt{3}$ m long on the ground, then the angle of elevation of the Sun is

(A) 30°

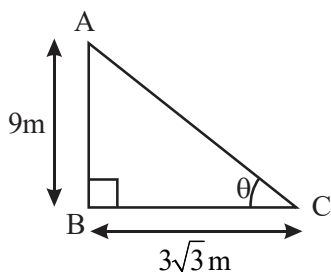
(B) 45°

(C) 60°

(D) 90°

Ans. C

Sol. Let angle of elevation is θ . AB is a vertical pole and BC is shadow.



Now in $\triangle ABC$

$$\tan \theta = \sqrt{3}$$

$$\Rightarrow \theta = 60^\circ$$

Hence option (C) is correct

44. Which are the 2 factors that we get when the below expression is factorized?

$$4(3a - 2)^2 - 3(3a - 2)(a + 5) - 7(a + 5)^2$$

(A) $(a + 3)$ and $(19a - 3)$

(B) $(4a + 8)$ and $(19a + 43)$

(C) $(a + 3)$ and $(a - 43)$

(D) $(4a + 3)$ and $(5a - 43)$

Ans. D

Sol. $4(3a - 2)^2 - 3(3a - 2)(a + 5) - 7(a + 5)^2$

Let $(3a - 2) = x$ and $(a + 5) = y$

$$\Rightarrow 4x^2 - 3xy - 7y^2$$

$$\Rightarrow 4x^2 - 7xy + 4xy - 7y^2$$

$$\Rightarrow x(4x - 7y) + y(4x - 7y)$$

$$\Rightarrow (4x - 7y)(x + y)$$

now replacing values of x and y

$$\Rightarrow [4(3a - 2) - 7(a + 5)][(3a - 2) + (a + 5)]$$

$$\Rightarrow [12a - 8 - 7a - 35][4a + 3]$$

$$\Rightarrow (5a - 43)(4a + 3)$$

Hence option (D) is correct

45. If the distance between the points $(-1, -2)$ and $(2, x)$ is 5, then one of the values of x is

(A) 3

(B) -2

(C) 6

(D) -6

Ans. D

Sol. Distance between two points (x_1, y_1) and (x_2, y_2) is $= \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

$$\therefore \sqrt{[2 - (-1)]^2 + [x - (-2)]^2} = 5$$

Squaring both sides

$$9 + (x + 2)^2 = 25$$

$$(x + 2)^2 = 16$$

Taking square roots both sides

$$x + 2 = \pm 4$$

if $x + 2 = +4$

$x = 2$ and if $x + 2 = -4$

$x = -6$

Hence option (D) is correct

46. What is the value of the expression given below?

- (A) 2^{-9n} (B) 2^{-8n} (C) 2^{-7n} (D) 3^{-7n}

Ans. GRACE

Sol. Data is missing.

47. The mean of five numbers is 30. A sixth number added. The new mean of six numbers is found to be 31. The sixth number is:

- (A) 34 (B) 32 (C) 36 (D) 30

Ans. C

Sol. Let the numbers are a_1, a_2, a_3, a_4, a_5

$$\text{mean} = \frac{a_1 + a_2 + a_3 + a_4 + a_5}{5}$$

$$30 = \frac{a_1 + a_2 + a_3 + a_4 + a_5}{5}$$

$$\therefore (a_1 + a_2 + a_3 + a_4 + a_5) = 150 \quad \dots(i)$$

let the sixth number is a_6

$$\text{new mean} = \frac{(a_1 + a_2 + a_3 + a_4 + a_5) + a_6}{6}$$

$$31 = \frac{150 + a_6}{6} \quad \{\text{from equation (i)}\}$$

$$a_6 = 186 - 150$$

$$a_6 = 36$$

hence option (C) is correct

48. Consider the following statements:

- (i) If the angles subtended by the chords of a circle at the centre are equal, then the chords are equal.
 (ii) If two chords of a circle are equal, then their corresponding arcs are congruent.

Which of the following is CORRECT?

- (A) Both (i) and (ii) are TRUE (B) (i) is TRUE and (ii) is FALSE
 (C) (i) is FALSE and (ii) is TRUE (D) Both (i) and (ii) are FALSE

Ans. A

Sol. Both statements are true

hence option (A) is correct

49. Area of the rhombus whose length of the diagonals are 9 cms and 12 cms respectively is

- (A) 45 sq.cms (B) 52 sq.cms (C) 54 sq.cms (D) 64 sq.cms

Ans. C

Sol. Area of a rhombus = $\frac{1}{2}$ (product of diagonals)

$$= \frac{1}{2}(9 \times 12) = 54 \text{ sq. cms}$$

hence option (C) is correct

50. If the 8th term of an arithmetic progression is 51 and 5th term is 33, then the sum of the first 10 terms of the arithmetic progression is
 (A) 312 (B) 320 (C) 345 (D) 360

Ans. D

Sol. n^{th} term of an A.P.

$$T_n = a + (n - 1)d$$

$$8^{\text{th}} \text{ term of an A.P.} = 51$$

$$a + (8 - 1)d = 51$$

$$a + 7d = 51 \dots\dots\dots(i)$$

$$\text{and } 5^{\text{th}} \text{ term of A.P.} = 33$$

$$a + (4 - 1)d = 33$$

$$a + 3d = 33 \dots\dots\dots(ii)$$

from equation (i) and (ii) $a = 9$ and $d = 6$

Sum of n terms of A.P.

$$S_n = \frac{n}{2}[2a + (n-1)d]$$

Sum of first 10 terms of A.P.

$$S_{10} = \frac{10}{2}[2 \times 9 + (10-1)6]$$

$$= 5[18 + 54] = 360$$

hence option (D) is correct

51. If the area of an equilateral triangle is $16\sqrt{3}$ sq units, then the length of each side of the triangle is
 (A) 7 units (B) 8 units (C) 9 units (D) 10 units

Ans. B

Sol. Area of an equilateral triangle = $\frac{\sqrt{3}}{4}(\text{side})^2$

$$\frac{\sqrt{3}}{4}(\text{side})^2 = 16\sqrt{3}$$

$$(\text{side})^2 = 64$$

$$\text{side} = 8 \text{ units}$$

hence option (B) is correct

52. The value of the expression

$$[\sec(75^\circ - \theta) - \operatorname{cosec}(15^\circ + \theta) - \tan(55^\circ - \theta) + \cot(35^\circ + \theta)]$$

is equal to

- (A) $3/2$ (B) 0 (C) -1 (D) 1

Ans. B

Sol. $\sec(75 - \theta) = \sec[90 - 15 - \theta]$

$$= \sec[90 - (15 + \theta)]$$

$$\sec(75 - \theta) = \operatorname{cosec}(15 + \theta) \quad \{\because \sec(90 - \theta) = \operatorname{cosec} \theta\}$$

$$\begin{aligned} \text{and } \tan(55 - \theta) &= \tan(90 - 35 - \theta) \\ &= \tan[90 - (35 + \theta)] \\ \tan(55 - \theta) &= \cot(35 + \theta) \quad \{\because \tan(90 - \theta) = \cot \theta\} \\ \therefore (75 - \theta) - \operatorname{cosec}(15 + \theta) - \tan(55 - \theta) + \cot(35 + \theta) \\ &\Rightarrow \operatorname{cosec}(15 + \theta) - \operatorname{cosec}(15 + \theta) - \cot(35 + \theta) + \cot(35 + \theta) \\ &\Rightarrow 0 \end{aligned}$$

hence option (B) is correct

- 53.** The perimeter of a rectangle is 90 cms and its breadth is 15 cms. What is the area of the rectangle?
 (A) 450 sq cms (B) 400 sq cms (C) 390 sq cms (D) 320 sq cms

Ans. A

Sol. Let the length of rectangle = ℓ
 and breadth = n

$$\text{Perimeter of rectangle} = 2(\ell + b)$$

$$90 = 2(\ell + 15)$$

$$\ell = 30$$

$$\text{area of rectangle} = \ell \times b$$

$$30 \times 15 = 450 \text{ sq. cms}$$

hence option (A) is correct

- 54.** Two triangles $\triangle ABC$ and $\triangle DEF$ are similar. Their corresponding angles are:

$$\angle A = \angle D$$

$$\angle B = \angle E$$

$$\angle C = \angle F$$

The similarity between $\triangle ABC$ and $\triangle DEF$ can be symbolically expressed as

$$(A) \triangle CAB \sim \triangle FDE$$

$$(B) \triangle CAB \sim \triangle EFD$$

$$(C) \triangle BCA \sim \triangle EDF$$

$$(D) \triangle BCA \sim \triangle DFE$$

Ans. A

Sol. If in triangles $\triangle ABC$ and $\triangle DEF$

$$\angle A = \angle D$$

$$\angle B = \angle E$$

$$\angle C = \angle F$$

by A - AA criterion of similarity

$$\triangle ABC \sim \triangle DEF$$

$$\triangle CAB \sim \triangle FDE$$

hence option (A) is correct

55. The quadratic equation $2x^2 - \sqrt{7}x + 1 = 0$ has
 (A) more than two real roots (B) no real root
 (C) two equal real roots (D) two distinct real roots

Ans. B

Sol. $2x^2 - \sqrt{7}x + 1 = 0$

Comparing with $ax^2 + bx + c = 0$

$a = 2, b = -\sqrt{7}, c = 1$

Discriminant, $D = b^2 - 4ac$

$= (-\sqrt{7})^2 - 4 \times 2 \times 1$

$= 7 - 8$

$= -1$

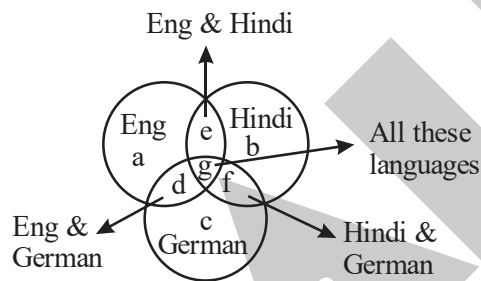
hence $D < 0$

\Rightarrow roots will be imaginary or not real hence option (B) is correct

56. In a school, all the 310 students have to study atleast one language among English, Hindi and German. 200 students study English, 220 students study Hindi and 180 students study German. 125 students study English and Hindi, 140 students study Hindi and German, 100 students study English and German and 75 students study all the three subjects. How many students study only one language?
 (A) 95 (B) 85 (C) 80 (D) 75

Ans. A

Sol.



as the data given

$a + e + g + d = 200$ (1)

$b + e + g + f = 220$ (2)

$c + d + g + f = 180$ (3)

$g + e = 125$ (4)

$g + d = 100$ (5)

$g + f = 140$ (6)

and $g = 75$ (7)

from equation (4) and (7), (4) and (5), (4) and (6)

$e = 50, d = 25$ and $f = 65$

By using these values

from equation (3) $c = 15$

from equation (2) $b = 30$

and from equation (1) $a = 50$

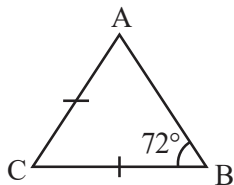
$$\begin{aligned} \text{hence number of students study only one language} &= a + b + c \\ &= 50 + 30 + 15 \\ &= 95 \end{aligned}$$

hence option (A) is correct

57. In a triangle ABC, if $BC = AC$ and angle $B = 72$ degrees, then the measure of the angle C is equal to
 (A) 72 degrees (B) 15 degrees (C) 42 degrees (D) 36 degrees

Ans. D

Sol.



as in ΔABC , $BC = AC$

then $\angle B = \angle A = 72$

{If two sides of a triangle are equal then angles opposite to the sides are equal}

in ΔABC , angle sum property

$$\angle A + \angle B + \angle C = 180$$

$$\angle C = 180 - (72 + 72)$$

$$\angle C = 36^\circ$$

hence option (D) is correct

58. If the complement of an angle is $1/5$ times of its supplement, then the angle is
 (A) 24.5 degrees (B) 67.5 degrees (C) 72.5 degrees (D) 86.5 degrees

Ans. B

Sol. Let the angle = x

\therefore Complement of angle = $90 - x$

and supplement of angle = $180 - x$

as per question

$$(90 - x) = \frac{1}{5} \text{ of } (180 - x)$$

$$(90 - x) \times 5 = 180 - x$$

$$450 - 5x = 180 - x$$

$$4x = 270$$

$$x = 67.5 \text{ degrees}$$

hence option (B) is correct.

59. A compound known as ammonium phosphate has the chemical formula

- (A) $(\text{NH}_4)_3\text{PO}_4$ (B) $(\text{NH}_3)_3\text{PO}_4$ (C) $(\text{NH}_4)_3\text{PO}_3$ (D) $(\text{NH}_3)_3\text{PO}_3$

Ans. A

Sol. Ammonium phosphate $\rightarrow (\text{NH}_4)_3\text{PO}_4$



60. From the Earth's surface, a stone is thrown vertically upwards with a velocity of 4 ms^{-1} . During its motion, a downward acceleration due to gravity of 10 ms^{-2} acts on the stone. What will be the height attained by the stone?

- (A) 1.25 m (B) 1 m (C) 0.96 m (D) 0.8 m

Ans. D

Sol. $u = 4 \text{ m/s}$

$$v = 0 \text{ m/s}$$

$$a = -g$$

$$0^2 = 4^2 - 2 \times g \times h$$

$$h = \frac{16}{20} = 0.8 \text{ m}$$

61. An elderly woman can clearly watch birds flying at a large distance but is unable to read the newspaper. Which of the following statements is correct?

- (A) The near point of her eyes has come closer to her
 (B) The near point of her eyes has receded away
 (C) The far point of her eyes has come closer to her
 (D) The far point of her eyes has receded away

Ans. B

Sol. The inability to see nearby objects comes from hypermetropia. The near point of eye recedes away in this defect

62. What is the value of the minimum resistance which can be made by connecting four resistors each of $1/4 \Omega$?

- (A) $1/4 \Omega$ (B) $1/8 \Omega$ (C) 1Ω (D) $1/16 \Omega$

Ans. D

Sol. The minimum resistance is when all elements are in parallel.

$$\frac{1}{R_{\text{eq}}} = \frac{1}{R} + \frac{1}{R} + \frac{1}{R} + \frac{1}{R}$$

$$R_{\text{eq}} = \frac{R}{4} = \frac{1}{16} \Omega$$

63. At room temperature, sucrose ($\text{C}_{12}\text{H}_{22}\text{O}_{11}$) has the appearance of a white solid powder. How many oxygen atoms are present in 17.1 grams of sucrose?

- (A) 6.022×10^{22} (B) 3.31×10^{22} (C) 3.31×10^{23} (D) 6.022×10^{23}

Ans. C

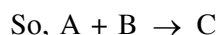
Sol. Molecular mass sucrose ($\text{C}_{12}\text{H}_{22}\text{O}_{11}$) is =

$$(12 \times 12) + (22 \times 1) + (11 \times 16) = 342$$

$$\text{No of molecules of sucrose} = \frac{17.1}{342} \times 6.022 \times 10^{23}$$

No of oxygen atoms present in 17.1 gram of sucrose = $\frac{17.1}{342} \times 6.022 \times 10^{23} \times 11$
= 3.31×10^{23}

64. Two chemical species A and B chemically combine to form a product C.



A and B cannot be broken down into simpler substances by simple chemical reactions. Choose the alternative in which all statements are correct.

- (i) A and B are compounds (ii) C is a compound
(iii) A and B are elements (iv) C has a fixed composition
(A) (i), (ii) and (iii) (B) (ii), (iii) and (iv) (C) (i), (iii) and (iv) (D) (i), (ii) and (iv)

Ans. B

Sol. A and B are elements as they cannot be broken down into simpler substances by simple chemical reactions. C is a compound having fixed composition.

65. For testing pH of the soil, a student mixed a sample of soil thoroughly with distilled water and allowed the container to sit undisturbed. Blue litmus turned red on dipping in the soil-water mixture. Which of the following would change the colour of the red litmus to blue?

- (A) Common salt (B) Vinegar
(C) Baking powder (D) Hydrochloric acid

Ans. C

Sol. As baking powder can produce basic solution, it can change red litmus to blue.

66. Water is stored in a dam at a height above the ground. This stored water possesses
(A) Potential energy (B) Electrical energy (C) Heat energy (D) Kinetic energy

Ans. A

Sol. Any body at rest at some height above surface of Earth possesses Potential energy only.

67. A train starts from rest and moves with uniform acceleration. It attains a velocity of 72 kmh^{-1} in 6 minutes. What is the acceleration of the train?

- (A) $1/12 \text{ ms}^{-1}$ (B) $1/15 \text{ ms}^{-1}$ (C) $1/18 \text{ ms}^{-1}$ (D) $1/21 \text{ ms}^{-1}$

Ans. C

Sol. $v = u + at$

or $a = \frac{v - u}{t}$

$v = 72 \text{ km/h} = 20 \text{ m/s}$

$u = 0 \text{ m/s}$

$t = 6 \text{ min} = 360 \text{ sec}$

$a = \frac{20}{360} = \frac{1}{18} \text{ m/s}^2$

68. The reddening of the sun at sunrise and at sunset as viewed from the Earth's surface is due to

- (A) Dispersion of light (B) Atmospheric refraction of light
(C) Scattering of light (D) Total internal reflection of light

Ans. C

Sol. At sunrise and sunset the rays travel greater distance through atmosphere causing reddish appearance.

69. The incident light is light from a point source. Which of the following can produce a parallel beam of light?

- (A) Concave mirror only (B) Two plane mirror placed at 90° to each other
(C) Convex lens only (D) Both concave mirror and convex lens

Ans. D

Sol. Both convex lens and concave mirror act as converging optical devices and can produce parallel beam when object is placed at focus.

70. Atomic number of sulphur is 16. Mass number of sulphur is 32. The number of electrons in M-shell of sulphur is

- (A) 5 (B) 6 (C) 7 (D) 8

Ans. B

Sol. Electronic configuration of sulphur - 2, 8, 6
so the no of electrons in M-shell = 6.

71. In a solar cooker, the phenomenon of greenhouse effect raises the temperature inside the solar cooker much higher than the temperature of the surroundings. Greenhouse effect in solar cookers is caused by

- (A) A double glass lid covering the inner box (B) A reflective mirror fitted to the outer lid
(C) The outer box cover of the solar cooker (D) The inner cooking box painted in black

Ans. A

Sol. The glass lid allows heat to enter but does not allow it to escape.

72. Consider the following statements:

- (i) Most carbon compounds are poor conductors of electricity.
(ii) Carbon compounds usually have strong forces of attraction between their molecules.

Which of the following is CORRECT?

- (A) Both (i) and (ii) are TRUE (B) (i) is TRUE and (ii) is FALSE
(C) (i) is FALSE and (ii) is TRUE (D) Both (i) and (ii) are FALSE

Ans. B

Sol. Most of the carbon compounds can not produce ions. So they are poor conductors of electricity. Carbon compounds usually have weak force of attraction between molecules.

73. Choose the alternative that gives the correct answer. The particles of the following type of mixture scatter a beam of light passing through it and make its path visible.

- (i) Solution
(ii) Suspension
(iii) Colloidal solution
(A) Both (i) and (iii) are correct (B) Only (ii) is correct
(C) Only (iii) is correct (D) Both (ii) and (iii) are correct

Ans. D

Sol. Colloidal solution and some type of suspension scatter a beam of light passing through it and make its path visible.

74. A 2 cm long awl pin is fixed vertically in front of a vertically placed concave mirror. A 1 cm long image of the awl pin is formed at a distance of 30 cm in front of the mirror. The focal length of the concave mirror is

- (A) -60 cm (B) -45 cm (C) -30 cm (D) -20 cm

Ans. D

Sol. $h_0 = 2 \text{ cm}$

$h_i = -1 \text{ cm}$

$$\text{magnification} = \frac{h_i}{h_0} = \frac{-v}{u}$$

$$\frac{-1}{2} = -\frac{(-30)}{u}$$

or $u = -60 \text{ cm}$

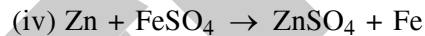
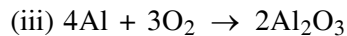
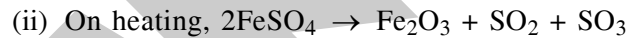
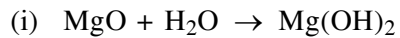
using mirror formula

$$\frac{1}{v} + \frac{1}{u} = \frac{1}{f}$$

$$\frac{1}{-30} + \frac{1}{-60} = \frac{1}{f}$$

$f = -20 \text{ cm}$

75. Which of the following is a displacement reaction?



(A) (i)

(B) (ii)

(C) (iii)

(D) (iv)

Ans. D

Sol.

76. A person cannot see distinctly objects kept beyond 4m. For correcting this defect of vision, he needs a lens of power

(A) -0.25D

(B) $+0.25\text{D}$

(C) $+0.5\text{D}$

(D) -0.5D

Ans. A

Sol. For correction

$$u = -\infty$$

$$v = -25$$

using lens formula

$$\frac{1}{v} - \frac{1}{u} = \frac{1}{f}$$

$$\frac{1}{f} = -\frac{1}{4} \Rightarrow P = -0.25 \text{ D}$$

77. With reference to the magnetic field due to a current in a solenoid, consider the following statements:

(i) The relative strength of the magnetic field is shown by how faraway the magnetic field lines are. In other words, as the magnetic field becomes stronger, the distance between any two adjacent field lines increases.

(ii) The strong magnetic field produced inside the solenoid can be used to magnetize a piece of magnetic material like soft iron, when placed inside the coil.

Which of the following is CORRECT?

(A) Both (i) and (ii) are TRUE

(B) (i) is TRUE and (ii) is FALSE

(C) (i) is FALSE and (ii) is TRUE

(D) Both (i) and (ii) are FALSE

Ans. C

Sol. Statement-1 is FALSE

Field lines are closer when field is stronger. Statement-2 is TRUE.

78. From a height h , a body has a free fall to the surface of the earth. After it has fallen a height $h/2$, the body possesses
- (A) Both potential energy and kinetic energy, where potential energy is greater than kinetic energy
 (B) Equal amounts of potential energy and kinetic energy
 (C) Only kinetic energy
 (D) Both potential energy and kinetic energy, where kinetic energy is greater than potential energy

Ans. B

Sol. When body has fallen through $h/2$ the potential energy reduces from mgh to $mgh/2$ so exactly half of mechanical energy is kinetic & other half potential.

79. Before the main shock waves of an earthquake start, the first sound waves produced by an earthquake are of
- (A) Either Low frequency infrasound or High frequency ultrasound depending on the nature of earthquake
 (B) Audible range of frequency for human beings
 (C) Low frequency infrasound only
 (D) High frequency ultrasound only

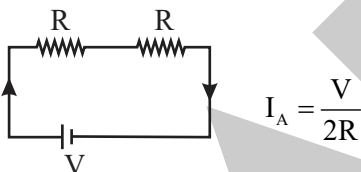
Ans. A

Sol. The P-waves travel fastest & are usually infrasonic but sometimes maybe in lower audible frequencies

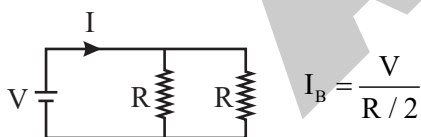
80. Two conducting wires of the same material and of equal lengths and equal diameters are taken. They are first connected in series with a battery in circuit A. Next, they are connected in parallel with the same battery in circuit B. What is the ratio between the current through circuit A (in series) to the current through circuit B (in parallel)?
- (A) 1 : 2 (B) 4 : 1 (C) 1 : 4 (D) 2 : 1

Ans. C

Sol. For circuit A



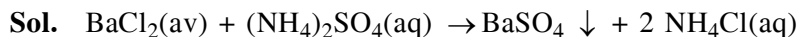
For circuit B



$$I_A : I_B = 1 : 4$$

81. Barium chloride on reacting with ammonium sulphate forms barium sulphate and ammonium chloride. This chemical reaction is an example of
- (A) Double displacement reaction (B) Decomposition reaction
 (C) Displacement reaction (D) Combination reaction

Ans. A



It is a double displacement reaction.

- 82.** A person speaking with a loud voice starts to talk softly. Which characteristic of the sound wave did the person reduce?
(A) Wavelength (B) Amplitude (C) Time period (D) Frequency
- Ans.** B
- Sol.** Loudness is due to the intensity of the wave which is directly proportional to the amplitude squared
- 83.** The laws of reflection hold good for
(A) Concave mirror only (B) Plane mirror only
(C) Convex mirror only (D) Concave mirror, plane mirror and convex mirror
- Ans.** D
- Sol.** Laws of reflection hold for all mirrors.
- 84.** From the third law of motion, we can conclude that action and reaction always
(A) Have the same magnitude and the same direction
(B) Act simultaneously on the same body
(C) Act simultaneously on different bodies in opposite directions
(D) Act simultaneously on different bodies normal (that is, at 90° angle) to each other
- Ans.** C
- Sol.** According to 3rd law.
Action & reaction are equal & opposite and act on different bodies.
- 85.** Who among the following Prime Ministers of India convened the National Integration Conference in 1961?
(A) V. P. Singh (B) Lai Bahadur Shastri
(C) Jawaharlal Nehru (D) V.V Giri
- Ans.** C
- Sol.** Jawaharlal Nehru was the prime minister of India Convened the National Integration conference in 1961.
- 86.** Which of the following principal organs of the United Nations is NOT headquartered at New York?
(A) The General Assembly (B) The Security Council
(C) The Economic and Social Council (D) The International Court of Justice
- Ans.** D
- Sol.** International Court of Justice headquarter is in Netherland Hague but others are in New York.
- 87.** Which among the following is NOT a power of the Election Commission?
(A) Supervises the nomination of candidate (B) Appointment of ministers
(C) Preparation of the electoral rolls (D) Allotment of symbols
- Ans.** B
- Sol.** Election Commission cannot appoint to any ministers of the Government of India and also in state governments.
- 88.** Treaty of Peace and Friendship between the Government of India and Government of Nepal, under which the Nepalese citizens can avail facilities and opportunities at par with Indian citizens was signed in the year:
(A) 1949 (B) 1950 (C) 1956 (D) 1960
- Ans.** B
- Sol.** Treaty of peace and friendship between the Government of India and the Government of Nepal on which the Nepal, under which the Nepalese citizens can avail facilities and opportunities at par with Indian citizens was signed 1950.
- 89.** Which of the following Articles deals with the fundamental right, 'Right to Education'?
(A) Article 16 (B) Article 20A (C) Article 21A (D) Article 25
- Ans.** C
- Sol.** Article 21 A deals with the fundamental right that right to education.

90. Who appoints the Chief Election Commissioner and other Election Commissioners in India?

- (A) The Governor (B) The Chief Justice of India
 (C) The Prime Minister (D) The President

Ans. D

Sol. The President appoints the chief election commissioner and other election commissioners in India.

91. As per the RTI act, which of the following is the CORRECT option with reference to the time period mandated for supply of information to an applicant in normal course?

- (A) Within 45 days from the receipt of application by the public authority
 (B) Within 7 days from the receipt of application by the public authority
 (C) Within 15 days from the receipt of application by the public authority
 (D) Within 30 days from the receipt of application by the public authority

Ans. D

Sol. As per the RTI act within 30 days from the receipt of application by the public authority mandated for supply information to an applicant in normal course.

92. Which of the following options can be defined as the process of rapid integration or interconnection between countries due to which more and more goods and services, investments and technology are moving between countries?

- (A) Globalisation (B) Industrialisation (C) Colonization (D) Decentralization

Ans. A

Sol. Globalisation is defined as the process of rapid integration or interaction between the countries due to which more and more goods and services investments and Technology are moving between countries.

93. Match the following:

List-I	List-II
(i) Primary Sector	(a) It includes activities that generate services rather than goods
(ii) Secondary Sector	(b) It includes economic activities that produce goods by exploiting natural resources
(iii) Tertiary Sector	(c) It covers all the activities directly related to scientific reserch and innovation
	(d) It covers activities in which natural products are charged into other forms through some process of manufacturing

- (A) (i)-(a), (ii)-(c), (iii)-(d) (B) (i)-(b), (ii)-(d), (iii)-(a)
 (C) (i)-(d), (ii)-(c), (iii)-(b) (D) (i)-(c), (ii)-(b), (iii)-(a)

Ans. B

Sol. Primary sector includes economic activities that produce goods by exploiting natural resources.

Secondary sector it covers activities in which natural products are changed into other forms through some process of manufacturing.

Tertiary Sector includes activities that generate services rather than goods.

94. Read the following statements and choose the CORRECT option.

- (i) Disguised unemployment occurs when the number of workers engaged in the job is much more than actually required to accomplish it.
 - (ii) Disguised unemployment is rampant in Indian agriculture owing to joint family system and lack of vocational avenues outside agriculture.
 - (iii) Disguised unemployment occurs when people are not able to find employment for some part of the year and is prevalent only in agriculture sector.
 - (iv) Disguised unemployment is common in all wage earners and is a situation wherein marginal productivity of labour is always greater than unity
- (A) (i)-TRUE, (ii)-TRUE, (iii) - FALSE, (iv) - TRUE
(B) (i)-TRUE, (ii)-FALSE, (iii) - TRUE, (iv) - FALSE
(C) (i)-TRUE, (ii)-TRUE, (iii) - FALSE, (iv) - FALSE
(D) (i)-FALSE, (ii) - TRUE, (iii) - FALSE, (iv) - TRUE

Ans. C

Sol. I and II is True and III and IV are False.

95. Which of the following option listed below can be categorised as the Modern Farming Methods that help in increasing agricultural production?

- (i) Use of High Yielding Varieties (HVYs) of seeds.
 - (ii) Use of electrical pump sets, canal and dam water for irrigation.
 - (iii) Use of chemical fertilizers and pesticides.
 - (iv) Use of cow-dung and other natural manure as fertilizers.
 - (v) Use of cow-dung and other natural manure fertilizers.
 - (vi) Use of farm machinery like and threshers.
- (A) Only (i), (ii), (iii), (iv) (B) Only (ii), (iii), (iv), (vi)
(C) Only (iii), (iv), (v), (vi) (D) Only (i), (ii), (iii), (vi)

Ans. D

Sol. Modern farming methods that help in increasing agricultural production are:-

- Use of High Yielding Varieties of Seeds
- Use of electrical pump sets, canal and dam water for irrigation
- Use of Chemical Fertilizers and Pesticides
- Use of farm machinery like tractors

96. Read the following statements and choose the CORRECT answer.

- (i) The concept of Poverty line is commonly used to identify poor and is estimated periodically (normally every five years) by conducting sample surveys which are carried out by the National Sample Survey Organisation (NSSO) in India.
 - (ii) International organisations like the World Bank use a uniform standard for the poverty line which is minimum availability of the equivalent of \$1.90 per person per day, for making comparisons between developing countries.
- (A) (i) is TRUE and (ii) is FALSE (B) (i) is TRUE and (ii) is TRUE
(C) (i) is FALSE and (ii) is TRUE (D) (i) is FALSE and (ii) is FALSE

Ans. B

Sol. I and II is True

97. This Act provides for food and nutritional security in human life at affordable prices and enables people to live a life with dignity, and under this act, 75% of the rural population and 50% of the urban population have been categorised as eligible households for food security. Identify the Act being referred to.
- (A) The National Food Security Act, 2013
 (B) Food Safety and Standards Act, 2006
 (C) The Prevention of Food Adulteration Act, 1954
 (D) Essential Commodities Act, 1955

Ans. A

Sol. The National Food Security Act 2003 provides for food and nutritional security in human life and affordable prices and enables people to live with dignity and under this act 75% of the rural population and 50% of the urban population have been categorised as eligible households for food security.

98. Match the following:

List-I	List-II
(i) Revamped Public Distribution System (RPDS)	(a) Introduced in 2000 and was specifically targeted towards 'indigent senior citizens',
(ii) Antyodaya Anna Yojana (AAY)	(b) Introduced in 1997 and for the first time a differential price policy was adopted for poor and non-poor-
(iii) Targeted Public Distribution System (TPDS)	(c) Introduced in 1992 and the target was to provide the benefits of PDS to remote and backward areas.
(iv) Annapurna Scheme (APS)	(d) Introduced in 2000 and was specifically targeted towards 'poorest of the poor'.

- (A) (i)-(a), (ii)-(d), (iii)-(b), (iv)-(c) (B) (i)-(c), (ii)-(d), (iii)-(b), (iv)-(a)
 (C) (i)-(d), (ii)-(c), (iii)-(b), (iv)-(a) (D) (i)-(d), (ii)-(c), (iii)-(d), (iv)-(a)

Ans. B

Sol. Revamped Public Distribution system (RPDS) introduced in 1992 and the target was to provide the benefits of PDS to remote and backward areas.

Antyodaya Anna Yojana (AAY) introduced in 2000 and was specifically targeted towards poorest of the poor Targeted Public Distribution system (TPDS) introduced in 1997 and for the first time a differential pricing Policy was adopted for poor and non-poor.

Annapurna scheme (APS) was introduced in 2000 and was specifically targeted towards I in this indigent senior citizens.

99. Which of the following terms is used to denote total value of all the final goods and services produced within the geographical boundaries of a country during a particular year?
- (A) Net National Product (B) Gross National Product
(C) Net National Income (D) Gross Domestic Product

Ans. D

Sol. Gross Domestic Product (GDP) is the total value of all the final goods and services produced within the geographical boundaries of a country during a particular year.

100. Given below are some of the terms related to Food Security system in India. Identify which one of the following terms is INCORRECTLY described
- (A) Public Distribution System - It is a system in which food procured by the FCI is distributed through government regulated ration shops among the poorer section of the society
(B) Buffer Stock - It is the stock of foodgrains namely wheat and rice, procured by the government through the Food Corporation of India (FCI)
(C) Fair Price Shop - It is a Ration shop that keeps stock of foodgrains, sugar and kerosene and these items are sold to people to people at a price lower than the market price
(D) Issue Price - It is the price declared by the government every year before the sowing season to provide incentives to farmers for raising the production of the crops.

Ans. D

Sol. It is the price declared by the government every year before the sowing season to provide incentives to farmers for raising the production of the crops is called Minimum Support Price (MSP).