

1. In a school there are 300 pupils. X of them are girls. What fraction of the pupils are boys?

- A. $\frac{X}{300}$
 B. $\frac{300}{300 - X}$
 C. $\frac{300}{X}$
 D. $\frac{300 - X}{300}$

2. If $\bigcirc = -1$, $\square = +1$, Then $7 \times \bigcirc + 6 \times \square$ equals

- A. $\bigcirc$
 B. $\square$
 C. $\bigcirc \bigcirc$
 D. $\square \square$

3. If the total number of dots on opposite faces of a dice is 7, find the correct figure among the following?

- A. 
 B. 
 C. 
 D. 

4. Solve the following questions if the symbols are as given below:

$$? = +$$

$$* = \div$$

$$\# = \times$$

$$+ = -$$

$$\div = \times$$

$$- = \div$$

$$\times = +$$

$$40 * 10 \# 100 - 5 = ?$$

- A. 80
 B. 90
 C. 70
 D. 65

5. Monika answered $\frac{3}{4}$ of the questions on her quiz correctly. What percent of the questions did she answer correctly?

- A. 25%
- B. 34%
- C. 50%
- D. 75%

6. The equation $3x + 3 = x + 9$ is modeled below what value of x makes the equation true

$$\triangle x \triangle x \triangle x \bigcirc 1 \bigcirc 1 \bigcirc 1 = \triangle x \begin{array}{c} \bigcirc 1 \bigcirc 1 \bigcirc 1 \bigcirc 1 \\ \bigcirc 1 \bigcirc 1 \bigcirc 1 \bigcirc 1 \bigcirc 1 \end{array}$$

What value of x makes the equation true?

- A. 3
- B. 6
- C. 12
- D. 4

$$\begin{array}{r} 1 \\ \hline 2 \\ 3 \\ \hline 1 + \frac{8}{3} \\ 1 + \frac{2}{3} + \frac{9}{1 - \frac{2}{3}} \end{array}$$

7. Simplify

- A. $\frac{11}{13}$
- B. $\frac{13}{15}$
- C. $\frac{13}{11}$
- D. $\frac{15}{13}$

8. What fraction of an hour is a second?

- A. $\frac{1}{24}$
- B. $\frac{1}{60}$
- C. $\frac{1}{120}$
- D. $\frac{1}{3600}$

9. What is the value of x in equation $3x - 4(x + 1) + 10 = 0$?

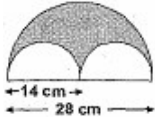
- A. 2
- B. 6
- C. 10
- D. 11

10. Which of the following shows the next step using the least common denominator to simplify

$$\frac{7}{8} - \frac{5}{6}$$

- A. $\left(\frac{7}{8} \times \frac{3}{3}\right) - \left(\frac{5}{6} \times \frac{4}{4}\right)$
- B. $\left(\frac{7}{8} \times \frac{4}{4}\right) - \left(\frac{5}{6} \times \frac{3}{3}\right)$
- C. $\left(\frac{7}{8} \times \frac{5}{5}\right) - \left(\frac{5}{6} \times \frac{7}{7}\right)$
- D. $\left(\frac{7}{8} \times \frac{7}{7}\right) - \left(\frac{5}{6} \times \frac{5}{5}\right)$

11. In the given figure, the area of the shaded portion is



- A. 308 cm^2
- B. 154 cm^2
- C. 462 cm^2
- D. 150 cm^2

12. Meena bicycled 3 days in a row.

- She travelled 12.87 Km on the first day.
- She travelled 19.04 Km on the second day.
- She travelled 22.86 Km on the last day. What is Meena's total distance covered rounded to the nearest tenth?

- A. 50.0 Km
- B. 54.6 Km
- C. 54.8 Km
- D. 55.0 Km

13. If m represents a positive number, which of these is equivalent to $m + m + m + m$?

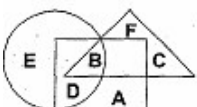
- A. $4m$
- B. $4m+1$
- C. $m/4$
- D. $m/4+1$

14. An organization sent out 420 invitations for a fund-raiser function. Of the people invited, 315 attended. What percent of the people invited attended the fund-raiser?

- A. 33%
- B. 25%
- C. 43%
- D. 75%

15. In the given diagram, three classes of population are represented by three figures. The triangle represents the school teachers, the square represents the married persons and the circle represents the persons living in joint families.

Married persons living in joint families but not working as school teachers are represented by



- A. C
B. F
C. D
D. A

16. Which of the following cannot be proved experimentally?

- A. Light is necessary for photosynthesis
B. Chlorophyll is necessary for photosynthesis
C. CO₂ is necessary for photosynthesis
D. None of the above

17. Most crops require a lot of nitrogen to make proteins. For this the bacterium Rhizobium helps the crops to get nitrogen. Which of the following statements is incorrect for Rhizobium?

- A. It converts atmospheric nitrogen into a soluble form that the plants can absorb
B. It can make its own food
C. It lives in the roots of leguminous plants like gram, peas and moong
D. Leguminous plants provide food and shelter to Rhizobium

18. Which of the following two terms are related to silk production?

- A. Sericulture and floriculture
B. Floriculture and moriculture
C. Apiculture and silviculture
D. Sericulture and moriculture

19. Match the two columns and select the correct option from the codes given below.

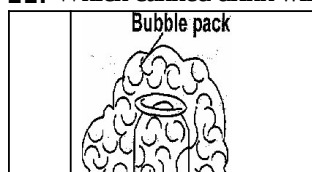
Column I	Column II
(a) Clothing material	(i) Nylon
(b) Twisted fibre	(ii) Fabric
(c) Synthetic fibre	(iii) Yarn
(d) Animal fibre	(iv) Cotton
(e) Plant fibre	(v) Silk

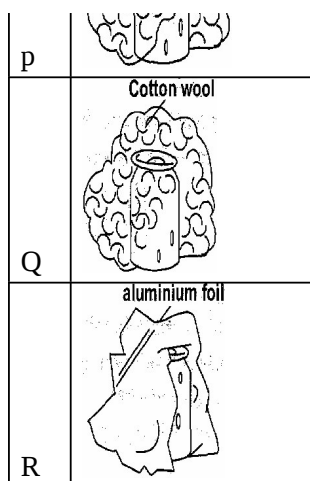
- A. (a) - (i), (b) - (ii), (c) - (iii), (d) - (iv), (e) - (v)
B. (a) - (ii), (b) - (iii), (c) - (v), (d) - (i), (e) - (iv)
C. (a) - (ii), (b) - (iii), (c) - (i), (d) - (v), (e) - (iv)
D. (a) - (i), (b) - (iv), (c) - (iii), (d) - (ii), (e) - (v)

20. Amit found that a glass P was stuck inside another glass Q. What could he do to separate the two glasses

- A. Pour hot water into glass P and put glass Q in hot water
B. Pour hot water into glass P and put glass Q in cold water
C. Pour cold water into glass P and put glass Q in cold water
D. Pour cold water into glass P and put glass Q in hot water

21. Which canned drink will remain cold the longest?





- A. P
- B. Q
- C. R
- D. None of these

22. How do you think a soil should be treated, to which excessive chemical fertilizers have been added?

- A. Such a soil can be treated by adding base
- B. Such a soil can be treated by adding CaO
- C. Such a soil can be treated by adding $\text{Ca}(\text{OH})_2$
- D. All of these

23. Neha was performing an experiment bare handed. After the experiment was over, she realised that her palms became slippery and slimy. What do you think is the reason for it?

- A. She must have dropped NaOH on her hands
- B. She must have dropped H_2SO_4 on her hands
- C. She must have dropped NaCl on her hands
- D. None of these

24. In a pressure-kerosene stove

- (i) We pump kerosene and convert it into vapours.
- (ii) The vapours are then ignited.

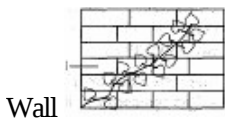
Which of the following is true about the above statements?

- A. (i) is a chemical change; (ii) is a physical change
- B. (i) is a physical change; (ii) is a chemical change
- C. (i) and (ii) both are physical changes
- D. (i) and (ii) both are chemical changes

25. What happens when we cut an apple and keep the slices exposed to air for sometime?

- A. The colour of the cut surface becomes brown
- B. The change in colour is due to chemical reaction between air and enzymes
- C. Both (A) & (B)
- D. None of these

26. How does the plant in the figure adapt to reach sunlight?



Wall

- A. By creeping along the ground
- B. By growing thorns to hook on for support
- C. By growing tendrils
- D. By growing clasping roots

27. In northern hemisphere, usually the longest day and the shortest day are respectively

- A. 21st December and 21st June
- B. 21st June and 22nd December
- C. 21st July and 22nd December
- D. 22nd December and 21st July

28. A lightning conductor installed in a building

- A. Does not allow the lightning to fall on the building
- B. Repels the lightning
- C. Forces the lightning to fall in an area where there are no buildings
- D. Conducts electric charge to the ground when lightning strikes the building

29. Wind currents are generated due to

- A. Shape of earth
- B. Sea breeze
- C. Thunderstorm
- D. Cyclone

30. Air exerts pressure in

- A. Downward direction only
- B. Upward direction only
- C. Sideways only
- D. All directions

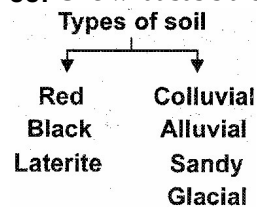
31. Which of the following is not a correct food chain?

- A. 
- B. 
- C. 
- D. Both (A) & (B)

32. Any sample of natural water which contains more than 2% of dissolved salts, especially the common salt, is caused

- A. Potable water
- B. Saline water
- C. Distilled water
- D. Decanted water

33. On what basis the given classification of soil is done?



- A. Residual soil and mountain soil
- B. Transported soil and mountain soil
- C. Residual soil and transported soil
- D. Chemical nature and size of mineral particles

34. Which of the following is correct about inspiration?

- A. Relaxation of diaphragm and intercostal muscles
- B. Contraction of diaphragm and intercostal muscles
- C. Contraction of diaphragm muscles
- D. Contraction of intercostal muscles

35. The table shows the percentage composition of four samples of air. Which sample of air could be breathed out by a person during exercise?

A. Percentage composition

Carbon dioxide	0
Nitrogen	83
Oxygen	17
Water	0

B. Percentage composition

Carbon dioxide	5
Nitrogen	80
Oxygen	15
Water	0

C. Percentage composition

Carbon dioxide	4
Nitrogen	77
Oxygen	16
Water	3

D. Percentage composition

Carbon dioxide	0
Nitrogen	76
Oxygen	21
Water	3

36. Why do we have muscular cramps after strenuous exercise?

- A. It is due to accumulation of lactic acid

- B. It is due to breakdown of glucose
- C. It is due to slow circulation of blood
- D. It is due to muscle cells respiring aerobically

37. A blood pressure is developed when the blood rushes through the veins in our body. Which of the given statements is incorrect with reference to the above fact?

- A. The instrument used to measure the blood pressure is called as sphygmomanometer
- B. The pressure is higher in ventricles when they contract to pump the blood out
- C. The pressure is lower in ventricles when they relax to receive the blood
- D. None of the above

38. Select a mechanism which humans do not use for excreting their wastes from the body

- A. Exhalation
- B. Perspiration
- C. Defecation
- D. Transfusion

39. Each structure is a bean-shaped dark red and consists of thousands of nephrons. These structures are situated in the abdominal cavity, one on each side of the vertebral column, just above the waist. Which structures are we referring to?

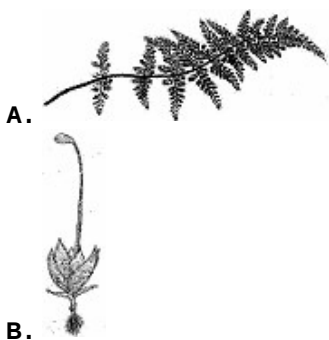
- A. Ovaries
- B. Adrenal glands
- C. Lymph nodes
- D. Kidneys

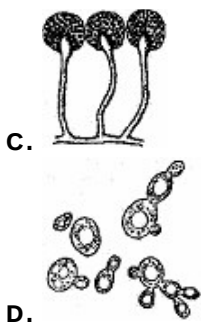
40. The statements (i) to (vii) describe the events that lead to the maturation of a plant. They are not in the correct order. Select the correct option to show the correct order.

- (i) The root grows first.
- (ii) The seedling obtains the food it needs from the cotyledons.
- (iii) The part that comes out next is the shoot.
- (iv) It grows downwards because of gravity.
- (v) The seedling develops its leaves and starts making food.
- (vi) More leaves will develop as the plant grows.
- (vii) The seed leaves now no longer needed, wither, die and fall off

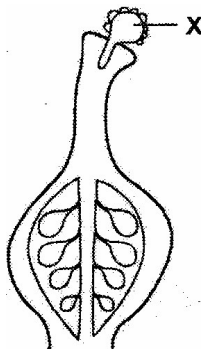
- A. (i) → (iii) → (ii) → (iv) → (v) → (vii) → (vi)
- B. (i) → (iii) → (v) → (iv) → (ii) → (vii) → (vi)
- C. (i) → (iv) → (iii) → (v) → (ii) → (vii) → (vi)
- D. (i) → (iv) → (iii) → (ii) → (v) → (vii) → (vi)

41. Which of the following organisms does not reproduce through spores?



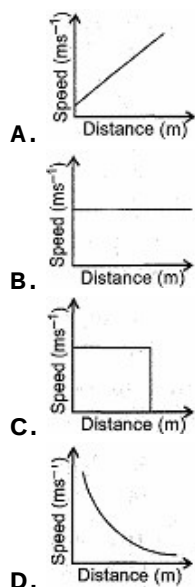


42. The diagram shows part of a flower at one stage during reproduction.
What is structure X?



- A. An ovule before pollination, but after fertilization
- B. An ovule before fertilization, but after pollination
- C. A pollen grain before pollination, but after fertilization
- D. A pollen grain before fertilization, but after pollination

43. Speed-distance graph of an object in uniform motion which comes to rest suddenly is



44. Which of these is closest to uniform motion?

- A. Car travelling on a busy straight road
- B. Car travelling on a straight empty road
- C. Car travelling on a busy curved road
- D. Car travelling on a curved empty road

45. When the switch of an electric bell is pushed

- A. Follow of the current stops through the electromagnet in the bell
- B. A current starts to flow through the electromagnet
- C. Voltage decreases in the current flowing through the electromagnet
- D. None of these

46. Marking on a bulb is 60 W, 220 V. What does it signify?

- A. The bulb is connected across the 220 Volts, 60 Joules of energy is consumed for every second
- B. The is connected 60 Joules, 220 Volts of energy is consumed
- C. 60 Unit of current will flow in the bulb
- D. 220 Unit of current will flow in the bulb

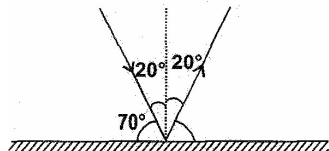
47. Which of these is not circuit element?

- A. Battery
- B. Voltmeter
- C. Potential difference
- D. Resistor

48. In lateral inversion

- A. Right side of the object will be right side of the image
- B. Left side of the object will be left side of the image
- C. Upside of the object will be down side of the object
- D. Right side of the object will be left side of the image

49. From the diagram below, what is the angle between the incident ray and the reflected ray?



- A. 20°
- B. 40°
- C. 70°
- D. 90°

50. On holding a stainless steel spoon near our face, we see

- A. Our inverted image on outer side of the spoon
- B. Our erect image on inner side of the spoon
- C. Our inverted image on inner side of the spoon
- D. Our laterally inverted image on inner side of the spoon