

# SAMPLE QUESTION PAPER

**1. In which seasons is wheat grown?**

- (A) Winter (B) Kharif  
(C) Monsoon (D) Summer  
(E) None of these.

**2. X is a system where water falls drop by drop at the position of the roots. Water is not wasted in this system. It is beneficial to places with poor water supply. Identify X.**

- (A) Sprinkler Irrigation system (B) Dhekli System  
(C) Pulley System (D) Drip Irrigation System  
(E) None of these.

**3. What class of organism, living in the body of termites, digests wood cellulose converting it to soluble carbohydrates?**

- (A) Algae (B) Fungi  
(C) Protozoa (D) Nematoda  
(E) None of these.

**4. Which of the following groups represents the bacterial diseases?**

- (A) Cholera, tuberculosis, malaria, measles  
(B) Small pox, tuberculosis, malaria, typhoid  
(C) Cholera, tuberculosis, typhoid, measles  
(D) Cholera, anthrax, tuberculosis, typhoid  
(E) None of these.

**5. X appears like silk. It is strong and flexible. Non-availability of X caused riots after world war-II. X is**

- (A) Cotton (B) Nylon  
(C) Polyester (D) Rayon  
(E) None of these.

**6. Which of the following materials is the best for making garments and jackets that can be used in wet or damp environments?**

- (A) Polyester (B) Wool  
(C) Cotton (D) All of these  
(E) None of these.

7.  $S + O_2 \rightarrow 'X'$  What is X?

- (A) Sulphuric acid
- (B) Sulphur dioxide
- (C) Sulphurous acid
- (D) Sulphuric acid
- (E) None of these.

8. Which of these is correct?

- (A)  $SO_2 + H_2O \rightarrow S_2SO_4$
- (B)  $SO + H_2O \rightarrow HSO_2$
- (C)  $SO_2 + H_2O \rightarrow H_2SO_3$
- (D)  $SO_2 + H_2O \rightarrow H_2SO_3$
- (E) None of these.

9. In the oil wells, natural gas forms the top most layer. Followed by oil finally water. This is because

- (A) Oil and gas are heavier than water
- (B) Oil and gas are lighter than water
- (C) Oil and gas stick to each other
- (D) All of these
- (E) None of these.

10. The process in which the wood of the forests was converted into coal under to high temperature and pressure over millions of years is called

- (A) Destructive distillation
- (B) Carbonization
- (C) Pyrolysis
- (D) Fermentation
- (E) None of these.

11. The LPG stove at home gives a yellow flame. This means that \_\_\_\_.

- (A) The fuel undergoes complete combustion.
- (B) The fuel on burning gives out yellow sparkling flames.
- (C) The fuel undergoes partial combustion.
- (D) The content of LPG in the cylinder is less.
- (E) None of these.

12. Statement 1: We get heat and light from the sun.

Statement 2: Heat and light produced in the sun are due to combustion.

- (A) Statement 1 is true but statement 2 is not the correct explanation for statement 1.
- (B) Statement 1 and 2 are both true.
- (C) Statement 1 is not completely true while statement 2 is false.
- (D) Statement 1 is true and statement 2 is somewhat true.
- (E) None of these.

**13. Which of these animals are extinct?**

- (A) Wild buffalo (B) Tiger  
(C) Dodo (D) Panda  
(E) None of these.

**14. Periyar in Kerala is a \_\_\_\_\_.**

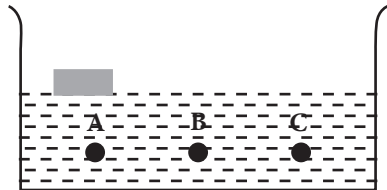
- (A) Biosphere  
(B) Zoo  
(C) National park  
(D) Wildlife sanctuary  
(E) None of these.

**15. Does a falling body accelerate? Why?**

- (A) Yes, because the gravity is a force that causes it to move faster.  
(B) No, because the gravity is a force that causes it to move at constant speed.  
(C) Yes, because the air causes it to accelerate.  
(D) No, because air keeps it moving at constant speed.  
(E) None of these.

**16. A wooden block floats in a beaker of water. The block is near the wall of the beaker as shown in the figure. If  $P_1$ ,  $P_2$  and  $P_3$  be the pressure at the three points A, B and C respectively at the bottom of the container, then**

- (A)  $P_1 = P_2 > P_3$   
(B)  $P_1 = P_2 < P_3$   
(C)  $P_1 > P_2 > P_3$   
(D)  $P_2 = P_3 > P_1$   
(E) None of these.

**17. To avoid slipping while walking on ice, one should take smaller steps because**

- (A) Frictional force ice is large  
(B) Of larger normal reaction  
(C) Frictional force of ice is small  
(D) Of smaller normal reaction  
(E) None of these.

**18. The force of friction between two bodies is**

- (A) Parallel to the contact surfaces  
(B) Perpendicular to the contact surfaces  
(C) Inclined at  $30^\circ$  to the contact surfaces  
(D) Inclined at  $60^\circ$  to the contact surfaces  
(E) None of these.

19. In a biology lecture, the teacher is dictating the organelles of a cell, which are endoplasmic reticulum, mitochondria, nucleus, ribosome, centriole and centrosome. Which type of cell is she referring?
- (A) Prokaryotic cell  
(B) Plant cell  
(C) Animal cell  
(D) It is not possible to predict from the given data.  
(E) None of these.
20. What is one major difference between a human skin cell and a human egg cell?
- (A) The egg cell twice as many chromosomes as the skin cell.  
(B) The egg cell has half as many chromosomes as the skin cell.  
(C) The skin cell has no genetic information in its chromosomes.  
(D) Only the egg cell has a nucleus.  
(E) None of these.
21. Raghav wants to enlarge a photograph that measures 4 inches by 9 inches. If both the dimensions are doubled, what happens to the area of the photograph?
- (A) It is doubled  
(B) It remains the same  
(C) It is multiplied by 8  
(D) It is multiplied by 4  
(E) None of these.
22. Fiona's teacher asked her to solve the problem below.  $(-115 - 75) + (115 - 75) + 75$  Rama's answer was  $(-175)$ . What is the correct answer?
- (A) 230  
(B) 225  
(C)  $(-225)$   
(D)  $(-255)$   
(E) None of these.
23. The total area of Maharashtra is 560, 000 sq. miles. Which of the following is 560, 000 sq. miles in scientific notation?
- (A)  $5.6 \times 10^5$   
(B)  $56 \times 10^6$   
(C)  $0.56 \times 10^8$   
(D)  $0.056 \times 10^4$   
(E) None of these.
24. Find the value of A, B, C in the adjoining matrix, such that the sum of matrix row wise or column wise is same.
- (A)  $A = 15, B = 12, C = 8$   
(B)  $A = 18, B = 13, C = 10$   
(C)  $A = 16, B = 12, C = 11$   
(D)  $A = 18, B = 15, C = 10$   
(E) None of these.

25. Select a Pythagorean triplet whose one number is 15.

- (A) 25, 15, 12
- (B) 15, 20, 30
- (C) 15, 25, 30
- (D) 15, 35, 32
- (E) None of these.

26. A man is 24 years older than his son. In 3 year, his age will be twice the age of his son. Find their present ages.

- (A) 21, 45
- (B) 23, 46
- (C) 21, 58
- (D) 21, 54
- (E) None of these.

27. In triangle ABC,  $\angle A : \angle B : \angle C = 7 : 8 : 9$ . Which is the largest side of the triangle?

- (A) BC
- (B) AB
- (C) AC
- (D) All are equal
- (E) None of these.

28. The amount of work done by 3 men and 4 boys in one hour is same as work done by 4 men and 2 boys. What is the ratio of a man to a boy efficiency?

- (A) 1:2
- (B) 2:1
- (C) 3:1
- (D) 1:
- (E) None of these.

29. If set  $A = \{X, Y, Z\}$ , how many proper subsets will it have?

- (A) 5
- (B) 3
- (C) 7
- (D) 12
- (E) None of these.

30. A man spends  $\frac{3}{8}$ th of his monthly income on food and 0.4 times of the remaining on entertainment. If he has 2400 remaining with him, find his monthly income.

- (A) Rs. 4800
- (B) Rs. 3200
- (C) Rs. 3600
- (D) Rs. 2400
- (E) None of these

31. What is metachlor?

- (A) Fertilizer
- (B) Fungicide
- (C) Rodenticides
- (D) Weedicide
- (E) None of these.

**32. Which of these differences is/are incorrect?**

(A)	Fertilizers are chemical substances.	Manure is an organic substance.
(B)	Fertilizers are prepared in the factories.	Manure is prepared in field
(C)	Fertilizers provide most humus to soil.	Manures provide some to soil.

- (A) (a) & (b)  
 (B) Only (c)  
 (C) Only (b)  
 (D) (b) & (c)  
 (E) None of these.

**33. The microorganism shown in the given figure is a**

- (A) Phase in the cycle of bacteria  
 (B) Bacterium that eats other bacteria  
 (C) Virus that uses bacteria as a host  
 (D) All of these  
 (E) None of these.

**34. Bacteria have been grouped into four different types based on their shapes. Identify the different types and select the correct statement regarding this.**

- (A) Vibrio cholera is an example of type S, which causes cholera  
 (B) Lactobacillus is an example of type P which helps in curdling of milk.  
 (C) Type R bacteria are rod-shaped and are called as bacilli bacteria.  
 (D) Type S bacteria are comm.-shaped and are called as cocci bacteria.  
 (E) None of these.

**35. Which of these is incorrect?**

	Metals	Non- metals	
(A)	Lustre	✓	×
(B)	Sonorous	✓	×
(C)	Ductile	✓	×
(D)	Reactive with oxygen	React to produce acidic oxides	React to produce basic oxide
(E)	None of these.		

36. (A) PVC (i) Poor conductor of heat  
 (B) Melamine (ii) Polyester  
 (C) PET (iii) Thermoplastic  
 (D) Synthetics (iv) Melt on heating  
 (a) A – ii, B – i, C – iii, D – iv (b) A – iii, B – ii, C – i, D – iv  
 (c) A – iv, B – iii, C – i, D – ii (d) A – iii, B – i, C – ii, D – iv  
 (e) None of these.
37. (A) Source of synthetic fibres (i) Can be drawn in very fine fibres  
 (B) Terylene (ii) Non-stick cookware  
 (C) Teflon (iii) Parachutes & ropes for climbing  
 (D) Nylon (iv) Petrochemical.  
 (E) None of these.  
 (A) A – ii, B – i, C – iv, D – ii (B) A – iv, B – i, C – ii, D – ii  
 (C) A – i, B – iii, C – ii, D – iv (D) A – iv, B – iii, C – ii, D – i  
 (E) None of these.
38. When a copper vessel is exposed to moist air for long, a dull green coating is seen on it. This is a mixture of \_\_\_\_.  
 (A) Copper hydroxide and copper carbonate.  
 (B) Copper hydroxide and copper oxide.  
 (C) Copper oxide and copper sulphide.  
 (D) Copper sulphate and copper oxide.  
 (E) None of these.
39. Statement 1: Bitumen is used for surfacing roads.  
 Statement 2: Bitumen is obtained from coal tar.  
 (A) Statement 1 is true while Statement 2 is not.  
 (B) Statement 1 is incorrect while Statement 2 is correct.  
 (C) Both statements are correct  
 (D) Both statements are incorrect  
 (E) None of these.
40. Coal is used for which of these purpose?  
 (A) Fertilizer (B) Purifier  
 (C) Fuel (D) Insecticide  
 (E) None of these.
41. A fuel is always a \_\_\_\_\_.  
 (A) Solid (B) Liquid  
 (C) Gas (D) All of these  
 (E) None of these.

42. Goldsmith uses \_\_\_\_\_ part of the flame for melting gold

- (A) Outermost
- (B) Middle
- (C) Innermost
- (D) Both (B) and (C)
- (E) None of these.

43. The population of a species may decline as a consequence of change of habitat. Such a species slowly become 'A' This means that the verge of becoming 'B' If care is not taken to protect these animals, they can become 'C' Some animals become 'D' as no member of their species is still alive. Which is the correct sequence for A, B, C and D in the paragraph?

- | A                  | B          | C          | D .                |
|--------------------|------------|------------|--------------------|
| (A) Vulnerable     | Endemic    | Extinct    | Endangered         |
| (B) Endangered     | Extinct    | Threatened | Endemic            |
| (C) Extinct        | Endemic    | Endangered | Extinct            |
| (D) Vulnerable     | Endangered | Critically | Extinct Endangered |
| (E) None of these. |            |            |                    |

44. What is a species?

- (A) A group of population which are capable of interbreeding.
- (B) A group of animals belonging to the same family.
- (C) Animals belonging to different families.
- (D) All animals of the jungle.
- (E) None of these.

45. Read the statements carefully and mark the correct option.

**Statement 1: Inertia is the property by virtue of which the body is unable to change by itself the state of rest.**

**Statement 2: The bodies do not change their state unless acted upon by an unbalanced external force.**

- (A) Both statement 1 and 2 are true and statement 2 is the correct explanation of statement 1.
- (B) Both statements 1 and 2 are true but statement 2 is not the correct explanation of statement 1.
- (C) Statement 1 is true and statement 2 is false.
- (D) Both statement 1 and 2 are false.
- (E) None of these.



46. A wooden block is floating in water contained in a beaker. During the free fall of the beaker, the upthrust on the block will be

- (A) Equal to the weight of the block
- (B) Slightly more than weight of the block
- (C) Slightly less than the weight of the block
- (D) Zero
- (E) None of these.

47. We need energy to overcome friction. During friction, unwanted heat energy is produced. Frictions can be reduced by the use of \_\_\_\_\_.

- (i) Rollers
  - (ii) Gears
  - (iii) Lubricants
  - (iv) Ball bearing
- (A) (i), (ii). & (iii)
  - (B) (i), (iii), (iv)
  - (C) (ii), (iii), & (iv)
  - (D) (i),(ii) & (iv)
  - (E) None of these.

48. John carried out an experiment to find out how different surfaces (P, Q, R and S) affect the distance a car travelling at 50 km/h needed to stop once the brakes are applied The results are shown below:

Type of road surface	P	Q	R	S
Stopping distance (m)	18	15	19	27

Which type of road will provide the most friction for the car to stop?

- (A) P
- (B) Q
- (C) R
- (D) S
- (E) None of these.

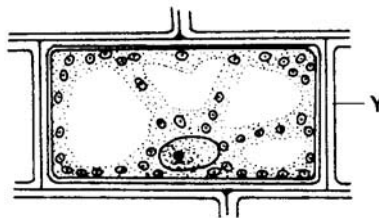
49. The given figure shows a typical animal cell. What is the function of the part labeled 'X'?

- (A) It contains the genes.
- (B) New substances are formed here.
- (C) It gives the cell a regular shape.
- (D) It controls all the activities of the cell.
- (E) None of these.



50 Look at the given cell carefully. Identify the function of the part labeled 'Y'.

- (A) It controls the movement of materials in and out of the cell.
- (B) It controls all the activities of the cell.
- (C) It takes part in protein synthesis.
- (D) It provides protection to the cell.
- (E) None of these



*Note: The actual Question Paper will translated in Hindi at the time of exam.*

Darken your choice with HB Pencil

1	A B C D E	14	A B C D E	27	A B C D E	40	A B C D E
2	A B C D E	15	A B C D E	28	A B C D E	41	A B C D E
3	A B C D E	16	A B C D E	29	A B C D E	42	A B C D E
4	A B C D E	17	A B C D E	30	A B C D E	43	A B C D E
5	A B C D E	18	A B C D E	31	A B C D E	44	A B C D E
6	A B C D E	19	A B C D E	32	A B C D E	45	A B C D E
7	A B C D E	20	A B C D E	33	A B C D E	46	A B C D E
8	A B C D E	21	A B C D E	34	A B C D E	47	A B C D E
9	A B C D E	22	A B C D E	35	A B C D E	48	A B C D E
10	A B C D E	23	A B C D E	36	A B C D E	49	A B C D E
11	A B C D E	24	A B C D E	37	A B C D E	50	A B C D E
12	A B C D E	25	A B C D E	38	A B C D E		
13	A B C D E	26	A B C D E	39	A B C D E		