

Instructions:

- Read the question paper carefully before you start writing.
- Write your name and the date on the question paper and the answer sheet.
- Write the answers on the answer sheet.
- Write only the question numbers followed by the answers. Do not write the questions.

Choose the correct options.**(16 × 1 = 16 marks)**

- 1) Which of the following components gives green colour to leaves?
- A. Ribosome B. Mitochondria C. Chloroplast D. Chromosome
- 2) What is the correct formula for the molecule formed by aluminium (valency =3 and chlorine (valency = 1)?
- A. $Al3Cl$ B. $AlCl3$ C. $AlCl2$ D. $AlCl$
- 3) Raj applies a force of 15 N on a box to move it towards the right. As he does that, a frictional force of 10 N acts on the box. What is the net force acting on the box?
- A. 5 N towards the left B. 5 N towards the right
C. 25 N towards the left D. 25 N towards the right
- 4) Which of the following microorganisms cause measles?
- A. Bacteria B. Virus C. Fungi D. Protozoa
- 5) The part of the human eye that acts like a screen is the
- A. iris. B. retina. C. pupil. D. cornea.
- 6) Which of the following is NOT a disadvantage of using chemicals as pesticides?
- A. They decrease soil fertility over time.
B. Upon getting washed out, they can cause water pollution.
C. They interfere with the process of photosynthesis.
D. The chemicals stick to the crops making them unhealthy for consumption.
- 7) Which of the following statements is correct about friction between the brake pad and wheel of the car?
- A. High friction → Car stops quickly → Less wear and tear of brake pads.
B. High friction → Car stops slowly → Less wear and tear of brake pads.
C. High friction → Car stops quickly → More wear and tear of brake pads.
D. High friction → Car stops slowly → More wear and tear of brake pads.

8) Which of the following cell organelles is NOT present in plant cells?

- A. Plastids B. Golgi bodies C. Centriole D. Ribosomes

9) Which of the following statements is/are true with respect to eukaryotic cells?

10) I. They have a well-defined nucleus.

II. Examples of eukaryotic cells are bacteria and blue-green algae.

III. Their genetic material floats freely in the cytoplasm.

- A. I and III B. I and IV C. Only I D. Only II

11) Which of the following statement/s are the reasons for ploughing the soil before sowing seeds?

I. For better root penetration

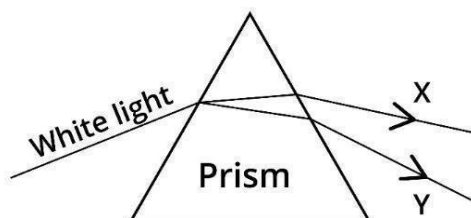
II. To enhance the growth of weeds

III. To promote the growth of earthworms

IV. To make the nutrients easily accessible to the plants

- A. I and II B. III and IV C. I, II, and III D. I, III, and IV

12) A beam of white light strikes the surface of a glass prism and splits into its constituent colours. The diagram below represents two such light rays - X and Y - which emerge out of the glass prism.



Which of the following statements about rays X and Y is true?

A. Ray X bends more than Ray Y.

B. Ray Y bends more than Ray X.

C. Speed of Ray X is greater than the speed of Ray Y in a glass prism.

D. Speed of Ray Y is greater than the speed of Ray X in a glass prism.

12) Zinc displaces copper from copper sulphate to form zinc sulphate. Will copper displace zinc from zinc sulphate as well?

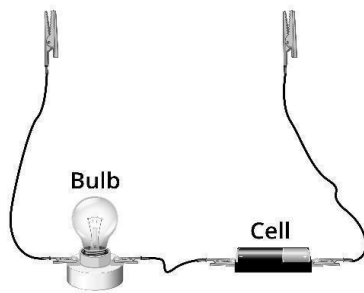
A. Yes, because copper is more reactive than zinc.

B. No, because copper is more reactive than zinc.

C. Yes, because copper is less reactive than zinc.

D. No, because copper is less reactive than zinc.

- 13) Which of the following materials can be used to complete the given circuit and make the bulb glow?



- A. A glass rod
B. A pencil with both ends sharpened
C. An ice cream stick
D. A paper straw
- 14) Why is it not advised to take antibiotics to treat the common cold?
- A. Antibiotics are harmful.
B. Antibiotics decrease immunity.
C. Antibiotics do not work against bacterial diseases.
D. Antibiotics do not work against viral diseases.
- 15) The SI unit of pressure is _____.
A. Pascal
B. Newton
C. Joule
D. Second
- 16) Shabri is a farmer. She is preparing the field to sow seeds in the month of June. Which seeds are suitable to grow during this time of the year?
A. Gram B. Wheat C. Cotton D. Mustard

- 17) **Fill in the blanks.**

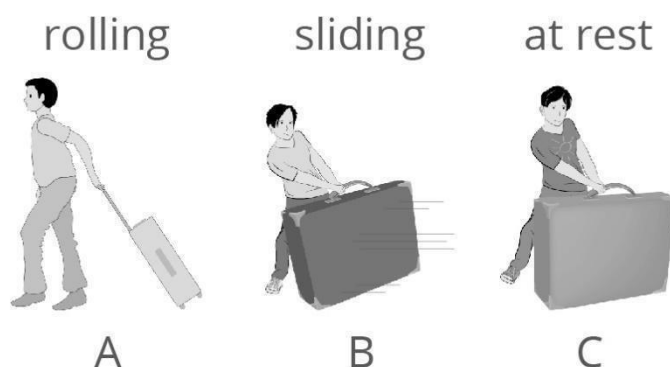
(8 × 1 = 8 marks)

- A. When an object is placed between two parallel mirrors, we get _____ number of images of the object.
- B. Bacteria, _____, protozoa, and algae are four major groups of microorganisms.
- C. If a block slides towards the east, the friction acts on it towards the _____.
- D. _____ contain dead or weakened pathogens introduced in our body to fight diseases.
- E. The _____ is called the powerhouse of the cell.
- F. The property of metals that allows them to be beaten into sheets is called _____.
- G. Silver articles obtain a black coating over a period of time. This is because of the reaction between silver and _____ gas present in the air.
- H. When a box of height 2 cm is kept in front of a plane mirror, the height of its image formed by the mirror will be _____.

Answer the following questions.

(7 × 2 = 14 marks)

- 18) Becca and Brijesh sit next to each on the last bench in their class. Becca finds it hard to read from her textbook while Brijesh finds it difficult to read from the blackboard.
- (a) Identify the defect of visions for each of them.
- (b) Suggest two ways in which we can take care of our eyes.
- 19) Ajay and Rahul grew crops in two separate fields. Ajay had prepared the soil by turning and loosening it before sowing the seeds, whereas Rahul had directly sowed the seeds on his field. Who do you think had a better harvest? Give a reason for your answer.
- 20) Observe the images showing three suitcases being pulled.



Arrange the force required to overcome friction in A, B and C in ascending order. Give reasons for your answer.

- 21) Swati learnt in her science class that the Bengal tigers are at high risk of getting extinct. According to Red Data Book, Bengal tigers belong to which category of species? Explain any one way to conserve animals from getting extinct.
- 22) A student performed an experiment to find out what substances can be used to preserve sliced apples for a week. To do this, he took equal-sized slices of apples and coated them with different substances. The given table shows some of his observations.

| Apple Slice | Substance Used | Observation |
|-------------|----------------|----------------------------------|
| 1 | Salt | No fungal growth |
| 2 | Lemon Juice | Shows fungal growth after 4 days |
| 3 | None | Shows fungal growth after 2 days |

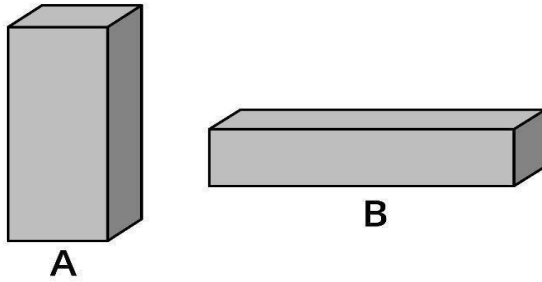
- (a) Why did Slice 1 show no fungal growth even after one week?
- (b) Explain any other method using which sliced apples can be preserved.
- 23) A. Which of these two metals – zinc or silver – will displace iron from iron sulphate solution? Give a reason for your answer.
- B. Name a metal that reacts spontaneously when exposed to air. Write a chemical equation for this reaction.
- 24) Differentiate between an element and a compound, giving one example of each.

Answer the following questions.

(6 × 3 = 18 marks)

25)

- A. Ball A is rolled down a slope covered with a plastic sheet. A similar Ball B is rolled down a similar slope covered with a towel. Which ball will cover a greater distance on flat ground, after rolling down the slope? Give a reason for your answer.
- B. Two similar bricks are placed on a cemented floor in two different ways, as shown. Equal force is applied on each of them to move them 1 meter away from their original positions.



Will the friction acting on the two bricks be different when they are moved? Give a reason for your answer.

- 26) List any three uses of microorganisms in food production.
- 27) Write various effects of force.
- 28) Draw a neat diagram of a plant cell and label any two parts that are absent in animal cells.
- 29) Which organelles are known as the suicidal bags of the cell and why? What is their function in the cell?
- 30) Write any three advantages of manure over fertilisers.

Answer the following questions.

(6 × 4 = 24 marks)

- 31) Define static friction, sliding friction and rolling friction with examples.
- 32) Give scientific reasons for each of the following statements.
- A. The word 'AMBULANCE' is written in reverse on the ambulance vehicle.
 - B. In a dark room, we can see objects to some extent, but we cannot identify colours.
 - C. Nocturnal animals, such as owls, can see much more clearly in the dark than human beings.
 - D. Even in a sufficiently lit room, an object should be kept about 25 cm away from our eyes for us to be able to see it without straining our eyes.
- 33) A substance 'X' burns in the air with white light and forms a powder 'Y'. This powder when mixed with water and tested with red litmus, turns it blue.
- a. Identify the substances X and Y. And write the word equation for the reaction.
 - b. What is the gas produced when X reacts with hot water? Write the word equation to show the reaction.
- 34) What are contact and non-contact forces? Explain with two examples each.
- 35) Just like solids, pressure is exerted by liquids and gases too.
- a. What are the two factors that affect liquid pressure? Give one example for each.
 - b. What is the pressure the air exerts due to its weight called? Why are we not crushed due to this pressure exerted by air?
- 36)
- a. Why do we need to preserve food?
 - b. Give two examples of preservatives.
 - c. Name and describe the method of preserving milk.