DAYANAND ANGLO VEDIC PUBLIC SCHOOL, AIROLI
FIRST TERM EXAM
SAMPLE PAPER
CLASS- VIII (2024-25)
SCIENCE AND TECHNOLOGY

TIME ALLOWED: 3 HOURS **MAXIMUM MARKS: 80**

General Instructions :

1. ***The question paper comprises five sections- A,B,C,D and E. There are 39 questions in the question paper. All questions are compulsory.***
2. ***There will be no overall choice in the question paper, but there will be an internal choice in 1 question of Section B, 1 question of Section C and 3 questions of Section D. Each case study question in Section E, contains 5 very short answer question(VSA) of 1 mark each, out of which only 4 are to be attempted.***
3. ***Section A consists of 20 objective type question (Q. No 1 to 20), carrying 1 mark each. These questions are MCQs and Assertion-Reason question.***
4. ***Section B consists of 6 very short answer type questions (Q. No 21 to 26), carrying 2 marks each.***
5. ***Section C consists of 7 short answer type questions (Q. No 27 to 33), carrying 3 marks each.***
6. ***Section D consists of 3 long answer type questions (Q. No 34 to 36), carrying 5 marks each.***
7. ***Section E consists of 3 source- based/ case-study based units of assessment (Q. No 37 to 39) of 4 marks each with sub-parts.***

SECTION-A

Select and write the most appropriate option out of the four options given for each of the questions 1-20.

1. The table given below has certain terms and four spaces named A, B and C. From the options given below choose the correct combination of terms. (1)

Cell	Feature/Part	Function
Amoeba	**A**	Movement
Plant cell	Plastid	**B**
Nerve Cell	**C**	Stimuli and response

(a) A-Pseudopodia; B-Respirations; C-Muscle cell
(b) A-Pseudopodia; B-Photosynthesis; C-Fibre -like structure
(c) A-Fibre-Like structure ; B-Photosynthesis; C-Blood cell
(d) A-Pseudopodia; B-Photosynthesis; C-Muscle cell

2. I am a rod-shaped cell organelle. I am responsible for cellular respiration to produce energy-rich molecules called ATP for different activities of life. Who am I? (1)
(a) Cell membrane (b) Plastid (c) Nucleus (d) Mitochondria

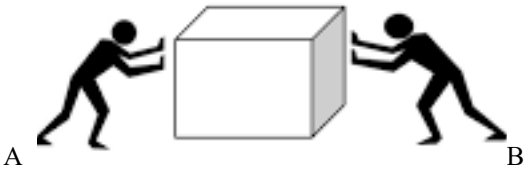
3. A common preservative used in jams and pickles is : (1)
(a) Sodium Benzoate (b) Nitric acid
(c) Sodium sulphate (d) Copper chloride

4. Some plants have nitrogen-fixing bacteria in their root nodules. What are these bacteria called? (1)
(a) Blue green algae (b) Nitrosomonas (c) Azotobacter (d) Rhizobium

5. The moist bread becomes mouldy after a few days when it is left in a container with a cover. Which of the following conditions favour the growth of the fungus? (1)
(a) Absence of water (b) Absence of light
(c) Presence of sunlight (d) Presence of carbon dioxide

6. A black and sticky solid used for making roads. (1)
(a) Paraffin wax (b) Lubricating oil (c) Asphalt (d) Gasoline

7. In the given figure , two boys **A** and **B** are shown applying force on a block. If boy **A** applies 30 N and boy **B** applies 20 N of force on the block, which one of the following statements is correct for the net resultant force acting on the block and the direction in which the box will move? (1)



(a) 50 N, towards right (b) 30 N, towards left
(c) 10 N, towards right (d) 10 N, towards left

8. A batsman hits the ball for a boundary past the bowler to make four runs. The batsman thus: (1)
(a) changes the direction and speed of the ball
(b) does not change the direction but speed only
(c) does not change the speed but direction only
(d) does not change either direction or speed

9. Friction has advantages as well as disadvantages. Dilip prepares a list of some of the advantageous applications of friction. Which among the list is a disadvantage of friction? (1)
(a) walking (b) writing (c) igniting a match stick to light a lamp (d) wearing out of shoes.

10. If the sliding friction between two surfaces is found to be 8 N, then the static friction between these two surfaces is most likely to be: (1)
(a) 5 N (b) 10 N (c) 4 N (d) 2 N

11. The joints of Rafi's garage doors are producing sound. To solve this problem, he must apply: (1)
(a) saw dust in the joints of the door. (b) water in the joints of the door.
(c) oil in the joints of the door. (d) sand in the joints of the door.

12. The metals used for making the alloy- brass are (1)
(a) iron + steel (b) copper + tin (c) copper + zinc (d) copper + iron

13. Birds produces sound through : (1)
(a) Larynx (b) Syrinx (c) Flapping their wings (d) Vocal sacs

14. Which of the following combinations is correct for the below chemical reaction if **X** element reacts with oxygen to form oxides of **X**? (1)
X + Oxygen → **X** Oxide

Sr. No	X	Nature of X Oxide
(i)	Calcium	Acidic
(ii)	Sodium	Acidic
(iii)	Carbon	Acidic
(iv)	Potassium	Basic

(a) (i),(ii) and (iv) (b) (i) and (ii) (c) (iii) and (iv) (d) (i) and(iii)

15. The frequency of a vibrating body is 25 Hz. Calculate its time period (in sec). (1)
(a) 0.4 s (b) 4 s (c) 0.04 s (d) 25 s

16. We hear the sound of thunder a little later than we see the flash of lightning because (1)
(a) sound travels fastest than light in air (b) light travels fastest than sound in air
(c) sound and light travels with the same speed in air (d) sound doesn't propagate through air

For Question number 17 to20, two statements are given. One labelled Assertion (A) and the other labelled reason (R) select the correct answer to these question from the codes (a), (b), (c) and (d)

(a) Both A and R are true and R is the correct explanation of A.
(b) Both A and R are true and R is not the correct explanation of A.
(c) A is true but R is false.
(d) A is false but R is true.

17. **Assertion(A)**: The rough ER plays a vital role in the synthesis of proteins. (1)
Reason(R): The rough ER doesn't have ribosomes attached to it.

18. **Assertion (A)**: Gravitational force is a non-contact force. (1)
Reason (R): When gravitational force acts on an object, it need not be in direct physical contact with the earth.

19. **Assertion(A)**: The property of metals by virtue of which they can be drawn into wires is known as ductility. (1)
Reason(R): Metals are generally good conductor of electricity but poor conductor of heat.

20. **Assertion (A)**: Petroleum is commonly called crude oil. (1)
Reason(R): Petroleum is a dark coloured, viscous and foul-smelling liquid.

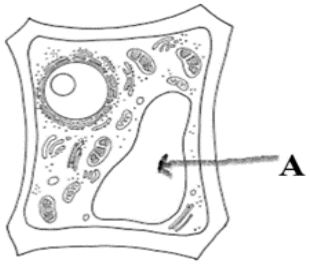
SECTION-B

Question numbers 21 to 26 are short answer(S.A-I) type questions

21. If onion peel cells and cheek cells are observed through a microscope, state the two major differences that the observer is likely to find. (2)

OR

Identify the part labelled as '**A**' in the given diagram, also state its function.



22. (a) What is rancidity?
(b) Give the appropriate method that is used for preservation of the following food items: (2)
(i) Apricot (ii) Milk

23. How is fossil fuel formed? Name two fossil fuels. (2)

24. Account for the following: (2)
(a) High rise buildings and dams have wider foundations.
(b) If some hot water is poured into a plastic bottle and lid is closed, the walls of the plastic bottle gets deformed and may get crushed inwards.

25. State any two ill effects of noise pollution on human health. (2)

26. Explain why, it is easier to drag a mat on floor when nobody is sitting on it but much more difficult to drag the same mat when a person is sitting on it. (2)

SECTION -C

Question numbers 27 to 33 are short answer(S.A-II) type questions

27. All living cells are bound by a membrane called the '**P'.** It surrounds its inner gel like material called '**Q**' which consists of '**R'** and nucleus. The nucleus has a thread like network called 'S' which condenses to form '**T'** responsible for the '**U'.** Name **P, Q, R, S, T and U .** (3)

28.(a) How is food poisoning caused? (3)
(b) Name one bacteria and one fungus causing food poisoning.
(c) State one way to prevent it.

29.(a) Why are Airplanes streamlined? (3)
(b) List two applications of ball bearings in daily life.
(c) Siddhart, a student of class VIII ponders over -- A concrete wall does not move even after applying a larger muscular force by him. What may be the reason for it?

30. A metal 'X' when treated with cold water gives a base 'Y' with formula XOH and liberates a gas 'Z' which easily catches fire. (3)
(a) Identify X and Y.
(b) Identify gas Z and mention the characteristic of gas Z.
(c) Write a balanced chemical equation for the reaction involved.

31. There are four different media **A, B, C** and **D** between a sound producing device and a boy. There is a considerable distance between the boy and the device. Medium **A** brings the sound to the boy more quickly whereas medium **C** takes the maximum time. Medium **B** brings the sound to the boy in more time than **A** but in less time than **C**. There is no sound through medium **D**. (3)
(a) Arrange the given four media **A,B,C and D** in decreasing order of the speed of sound in them.
(b) If the four media randomly are air, Iron, vacuum and water, Which among **A, B , C and D**, would be air?
(c) What could be the reason that the boy is not able to listen any sound through Medium **D** .

OR

(a) Galton's whistle produces a sound heard by dogs only. Which type of sound is it? Also define the type.
(b) Give the audible range of sound in human with normal hearing.
(c) A body vibrates 100 times in 50 second to produce sound. Calculate its frequency in Hz.

32. State one reason for the following. (3)

(a) Bronze is preferred over copper metal for making statues.

(b) Aluminium is used for making Aircraft bodies.

(c) 22 carat gold is better than 24 carat gold for making jewellery.

33. List the three main products obtained through the process of destructive distillation of coal and write any one practical use for each of these products. (3)

SECTION-D

Question numbers 34 to 36 are long answer type questions

34. (a) There are many microorganisms that helps in production of antibiotic. Name any two of them. (5)

(b) How does antibiotic work in our body?

(c) Explain the role of vaccine in producing immunity to a disease.

(d) 'The longer you leave the curd at room temperature, the more sour it tastes'. Give reason for the statement.

OR

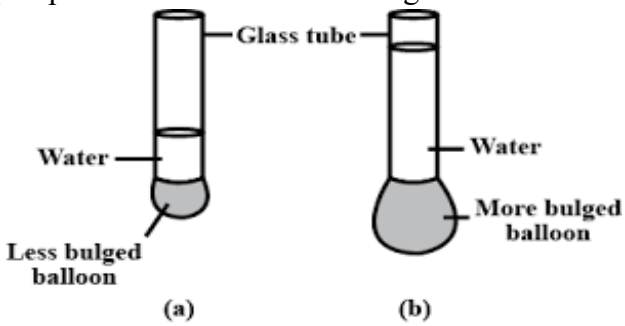
(a) How are viruses different from other microbes? (any two points)

(b) Identify the disease in plant, shown in the figure. Mention its causative microorganism.

(c) Reena is suffering from typhoid. What is the possible mode through which the disease might have got transmitted?

(d) Name the mosquito which causes (i) Malaria (ii) Dengue .

35 (a)Which property of liquid pressure is shown in the diagram? (5)



(b) Mention any two properties of liquid pressure other than the above shown property.

(c) Define Thrust.

(d) If thrust increases and area remains constant, how will be the pressure get affected?

OR

(a) Define atmospheric pressure.

(b) How does atmospheric pressure vary with height of column of air?

(c) Mountain climbers carry oxygen cylinder with them. Give reason.

(d) Give two applications of atmospheric pressure.

36. (a) Arrange the following metals in the order of their decreasing reactivity- K, Mg, Cu and Fe. (5)

(b) State any two observations when a magnesium ribbon is dipped in copper sulphate solution. Give reasons for these observations and also write the chemical equation of the reaction involved.

OR

(a) Complete the given chemical equations.

(i) $Fe_{(s)} + 2HCl_{(aq)} \longrightarrow$

(ii) $Mg_{(s)} + 2H_2O_{(l)} \longrightarrow$

(b) What happens when

(i) a small piece of charcoal is ignited?

(ii) zinc metal is hammered?

(c) List any one use of each of the following non- metals.

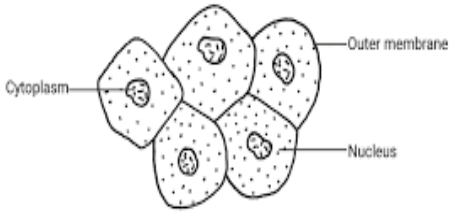
(i) Iodine (ii) Phosphorus .

SECTION- E

Question numbers 37 to 39 are case study based questions and contain five sub-parts each. You are expected to answer any four sub-parts in these questions.

37. In a biology class, students were observing various types of cells under a microscope. (4)

They came across two different cells: one from the leaf of a plant and the other from a human cheek lining. The plant cell appeared to have a rigid outer layer, while the human cheek cell seemed flexible and lacked any rigid structure.



(a) Identify the given cells.

(b) What is the outer rigid layer in plant cell called as?

(c) Name the colourless plastid in a plant cell.

(d) List any one function of these colourless plastids.

(e) Why is cell called a basic structural and functional unit of all living organisms?

38. Friction between the two surfaces depends on the nature of the surfaces in contact. When a pencil cell is released from a certain point on an inclined wooden board, rolls and it travels a distance of 35 cm on floor **A** before it comes to rest. When the same pencil cell is released from the same point on the same inclined board, it travels a distance of 20 cm on floor **B** before coming to rest. (4)

(a) Which floor, **A** or **B**, offers greater friction? Why?

(b) If a glass top is taken instead of the wooden board, will the pencil cell travel the same distance of 35 cm on floor **A?** Give reason for your answer.

(c) Force of friction also depends on the force pressing the two surfaces together. Justify the statement with one example.

(d) If the pencil cell is covered with sand paper, how will it affect the friction?

(e) Why is frictional force called as opposing force?

39. A pie chart about energy sources in country X in the year 2018 is shown. Examine it and answer the questions given: (4)

(a) Define renewable source of energy.

(b) State the fossil fuels consumed by the Country X in that year?

(c) Which fossil fuel used by country X is a clean fuel? Why?

(d) Fossil fuels should be used judiciously. Justify.

(e) For the sustainable development of the country, percentage of which energy sources should be increased?