



**Indian School Al Wadi Al Kabir**  
**Mid Term Examination**  
**SCIENCE – SET II**

Class : VII  
Date : 20.09.2022

Time: 2 ½ Hours  
Max. Marks : 80

**General Instructions:**

- i. All questions are compulsory. Marks are indicated against each Section.
- ii. The question paper comprises **10** pages and **32** questions in 5 sections A, B, C, D and E
- iii. Q 1 to Q 16 in **section A MCQ** carries 1 mark each. Write the correct answer along with the option only in the answer script.
- iv. Q 17 to Q 19 in **section B CASE STUDY BASED** carry the **THIRTEEN** marks.
- v. Q 20 in **section C SOURCE BASED** carry **THREE** marks.
- vi. Q 21 TO Q 26 in **section D** are Short Answer Type Questions and carry **THREE** marks each.
- vii. Q 27 to Q 32 in **section E** are Long Answer Type Questions and carry **FIVE** marks each.
- viii. Write the same question number as given in the question paper.
- ix. Ink killer or whitener should not be used in the answer script.
- x. Diagrams should be drawn using a pencil.

**SECTION A (16X1=16)**

1. The table shows the mode of nutrition in two different organisms:

ORGANISM 1	Feed on insects to obtain nitrogen.
ORGANISM 2	Depends on a host organism to obtain nutrients.

What is the likely mode of nutrition of the two organisms?

- (a) Organism 1- Parasitic, Organism 2- Symbiotic
- (b) Organism 1- Saprotrophic, Organism 2- Symbiotic
- (c) Organism 1- Parasitic, Organism 2- Insectivorous
- (d) Organism 1- Insectivorous, Organism 2- Parasitic

2. The role of chlorophyll is:

- (a) to trap the solar energy.
- (b) to help in the exchange of gases.
- (c) to absorb nutrients from the soil.
- (d) to help in the synthesis of proteins.





3. A steel spoon is dipped in a hot soup. Its other end:

- (a) Becomes hot by the process of convection.
- (b) Becomes cold by the process of convection.
- (c) Becomes hot by the process of conduction.
- (d) Becomes cold by the process of radiation.

4. David took two identical tin cans. He painted the outer surface of one black and the other white. An equal amount of water was added to each can and left them in the mid-day sun for an hour. He measured the temperature of both cans and noticed that the temperature of the black can was higher compared to the white can. What can be the reason for the difference in temperatures?

- (a) Black colour absorbs more heat.
- (b) Black colour reflects more heat.
- (c) White colour absorbs more heat.
- (d) Water in the white can evaporates faster.

5. Which of the given components represents the symbol of an electric bulb?

P	
Q	
R	
S	

- (a) P
- (b) Q
- (c) R
- (d) S

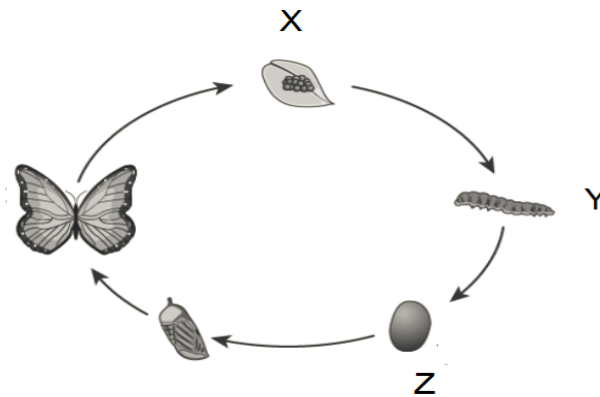
6. The amount of heat produced in a wire depends on its:

- (a) material
- (b) length
- (c) thickness
- (d) all of these

7. A student performed an experiment where she placed a magnetic compass near a current-carrying wire. She notices some deflection in the compass needle. What causes the deflection of the needle in the compass?

- (a) Magnetic effect of electric current
- (b) Biological effect of electric current.
- (c) Heating effect of electric current.
- (d) Heating effect of the compass.

8. The figure represents the stages of the life cycle in a silk moth.



Which of these explains the stages indicated by X, Y, and Z in the cycle?

- (a) X- Silkworm, Y-Egg, Z- Cocoon
- (b) X- Cocoon, Y- Silkworm, Z- Egg
- (c) X- Egg, Y-Cocoon, Z- Silkworm
- (d) X- Egg, Y- Silkworm, Z- Cocoon

9. Which of these explains the process of scouring?

- (a) Straightening of the woollen fibres.
- (b) Picking out small fluffy fibres.
- (c) Separating the hair of different textures.
- (d) Washing wool to remove dust and dirt.

10. Which of the following time-keeping devices is based on the study of the shadow cast by the sun?

- (a) A Sand clock
- (b) An atomic clock
- (c) A Sundial
- (d) A Quartz clock

11. When an object changes its position with respect to its surroundings in a given time, it is said to be:

- (a) at rest
- (b) a stationary body
- (c) in motion
- (d) in mean position

12. Time period of a simple pendulum depends upon:

- (a) mass of the bob
- (b) length of the string
- (c) colour of the bob
- (d) both a and c

13. A bus travels 54 km in 3h. The speed of the bus is:

- (a) 18 km/h
- (b) 162 km/h
- (c) 0.056 km/h
- (d) 51 km/h

14. When a deflated balloon is attached to the mouth of an empty test tube, and the tube is immersed in a glass filled with boiling water, which of the following would be observed?



- (a) The test tube breaks.
- (b) The balloon gets inflated.
- (c) The balloon remains deflated.
- (d) The balloon gets burnt at the rim.

15. A student was asked by the teacher to blow into a bottle that had a small paper ball placed just inside its mouth. The paper ball did not move into the bottle, during this exercise.

Why does the paper ball remain at the mouth?

- (a) The wind speed was not enough to push the ball inwards.
- (b) Air pressure was higher at the mouth than inside the bottle.
- (c) The ball exerted pressure that resisted the wind at the mouth.
- (d) Air pressure was lower at the mouth and higher inside the bottle.

16. A fire alarm usually detects smoke in case of fire. Where should such an alarm be placed in a room?

- (a) Near the door handle
- (b) On the floor
- (c) On the windows
- (d) On the ceiling

### SECTION B (13 marks)

#### 17. Case study A

**Tanya was asked by her teacher to prepare an article on cyclones. She asked her mother to help her and her mother gave an old newspaper and asked her to go through the article on the destruction caused by the cyclone. The article is as follows:**

**Orissa was hit by a cyclone with wind speed of 200 km/h on 18 October 1999. The cyclone smashed 45,000 houses making 7,00,000 people homeless. On 29 October the same year, a second cyclone with wind speed of 260 km/h hit Orissa again. It was accompanied by water waves about 9 m high. Thousands of people lost their lives. Property worth crores of rupees was destroyed. The cyclone affected agriculture, transport, communication, and electricity supply.**

(i) The centre of a cyclone is a calm area and is called the----- of the cyclone.

(a) Eye

(b) Focus

(c) Radius

(d) Diameter

(ii) What is meant by a cyclone? Why does a cyclonic storm die after reaching the land?

(iii) Mention any two precautions to be taken during a cyclone.

(iv) What are the destructions caused by a cyclone?

### **18. Case study B**

**Sam observes every day some cattle grazing in the field near his house. But one thing that makes him fascinated is that always these animals are chewing even when they are not eating grasses. He asked his teacher about it and his teacher told him that cattle quickly swallow the grass and store it in a part of the stomach called the rumen. Here the food gets partially digested and is called cud. But later the cud returns to the mouth in small lumps and the animal chews it. This process is called rumination and these animals are called ruminants. Cattle, Camel, and sheep are examples of ruminants.**

(i) Cud is the name given to the food of ruminants which is:

(a) swallowed and undigested.

(b) swallowed and partially digested.

(c) properly chewed and partially digested.

(d) properly chewed and completely digested.

(ii) Name the type of carbohydrate that can be digested by ruminants but not by humans. Give the reason also.

(iii) What is meant by Rumination?

(iv) Name any two Ruminants.

## 19. Case study C

Rakesh was suffering from a fever. He was given a cup of hot milk. Then, his mother kept a clinical thermometer under his tongue and noted the reading of the thermometer after taking it out of his mouth. Rakesh wanted to know the temperature of hot milk by the same thermometer but was stopped by his mother. She told him that a laboratory thermometer is suitable for measuring the temperature of hot milk.

(i) What is the average human body temperature?

(a) 40°C

(b) 30°C

(c) 37°C

(d) 42°C

(ii) Give any two differences between a clinical and a laboratory thermometer.

### SECTION C (1X3=3)

20. Read the passage given below and answer the following questions.

Sewage is wastewater released by homes, industries, hospitals, offices and other users. It also includes rainwater that has run down the street during a storm or heavy rain. The water that washes off roads and rooftops carries harmful substances with it. Sewage is mainly liquid waste. Most of it is water, which has dissolved and suspended impurities. These impurities are called contaminants. In a home or a public building generally, one set of pipes brings clean water and another set of pipes takes away wastewater. Imagine that we could see through the ground. We would see a network of big and small pipes, called sewers, forming the sewerage. It is like a transport system that carries sewage from the point of being produced to the point of disposal, i.e. treatment plant. Treatment of wastewater involves physical, chemical, and biological processes, which remove physical, chemical and biological matter that contaminates the wastewater. Wastewater is passed through bar screens. Large objects like rags, sticks, cans, and plastic packets, are removed. Water then goes to a grit and sand removal tank. The speed of the incoming wastewater is decreased to allow sand, grit and pebbles to settle down. The water is then allowed to settle in a large tank which is sloped towards the middle. Solids like faeces settle at the bottom and are removed with a scraper. This is the sludge. A skimmer removes the floatable solids like oil and grease. Water so cleared is called clarified water. Air is pumped into the clarified water to help aerobic bacteria to grow. Bacteria consume human waste, food waste, soaps and other unwanted matter remaining in clarified water. The treated water has a very low level of organic material and suspended matter. It is discharged into a sea, a river or the ground. Nature

**cleans it up further. Sometimes it may be necessary to disinfect water with chemicals like chlorine and ozone before releasing it into the distribution system.**

i. Sewage is mainly a:

- (a) liquid waste
- (b) Solid waste
- (c) gaseous waste
- (d) a mixture of solid and gas

ii. Which of the following is **not** a part of wastewater treatment?

- (a) Disinfection with chemicals.
- (b) Evaporation
- (c) Grit and sand removal.
- (d) Passing the wastewater through bar screens.

iii. The network of big and small pipes carrying wastewater is called:

- (a) Sewers
- (b) Sediments
- (c) Clarified water
- (d) Sludge

#### **SECTION D (6X3=18)**

21. (a) What do you understand by photosynthesis? Write the **word equation** for it.

(b) Why are stomata important for photosynthesis?

22. (a) How do woollen clothes keep us warm in winter?

(b) What is meant by conduction of heat? Name any two good conductors of heat.

23. (a) Why is it important to have an electric fuse in all electronic devices?

(b) Expand MCB? Mention one advantage of MCB over an electric fuse.

(c) Why does a fuse wire have a very low melting point?

24. (a) What are villi? Write its importance.

(b) What is the effect of saliva on starch?

25. (a) What are natural fibres? Give any two examples.

(b) What is shearing? Why is shearing done only in summer?

26. (a) Show the slope of the distance-time graph for:

i. A bus parked on a side road.

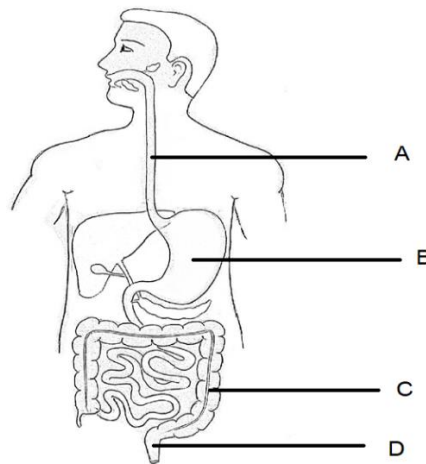
ii. A bus moving at a uniform speed.

(b) Convert 25 m/s to km/h



**SECTION E (6X5=30)**

27. (a) Write the difference between autotrophic and heterotrophic nutrition.  
(b) How does the pitcher plant trap an insect?  
(c) Explain the symbiotic relationship in lichens.
28. (a) The mercury does not fall or rise in a clinical thermometer when taken out of the mouth.  
Explain why.  
(b) Explain the reason for the general fitting of the air conditioner at a higher level on the wall of the room.  
(c) Write **any two** precautions to be taken while measuring the temperature using a laboratory thermometer?
29. (a) Explain how to make a simple electromagnet.  
(b) Give any two uses of an electromagnet.  
(c) Draw a neat diagram of a closed circuit using the symbols of its components.
30. (a) Identify and label the parts marked in the given diagram of the human digestive system.

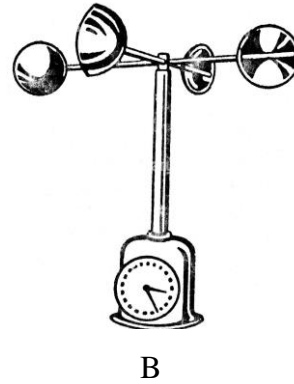
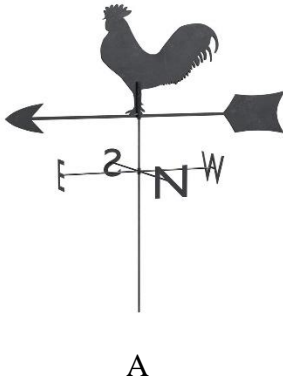


- (b) Explain the role of the following glands.
- A- Liver  
B- Pancreas
- (c) In which part of the human digestive system are the bacteria present in the food killed?  
Explain how.
31. (a) Draw a neat diagram of a simple pendulum and label its mean and extreme positions.  
(b) A simple pendulum takes 46 seconds to complete 23 oscillations. Calculate the time period of the pendulum.

(c) What is meant by periodic motion? Give an example of a body which shows periodic motion.

32. (a) Do you find it easier to ride a bicycle in the direction of blowing wind or against the direction of the wind? Give reason.

(b) **Identify** and mention the **uses** of the given devices:



(c) Observe the given figure and answer the following:



A student cuts a long strip of paper, holds one end of it firmly and blows over it, from that end. Will the paper strip be lifted upwards or downwards? **Give a reason** to support your answer.

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