



विद्या सर्वार्थ साधिका

**ANANDALAYA**  
**ANNUAL EXAMINATION**  
Class: VII

Subject: Science  
Date : 09-03-2024

MM : 80  
Time: 3 hours

**General Instructions:**

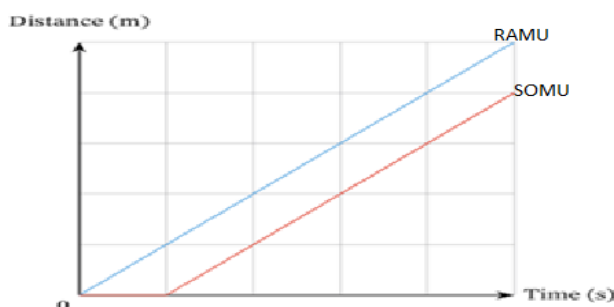
1. This question paper consists of 39 questions in 5 sections.
2. All questions are compulsory. However, an internal choice is provided in some questions. A student is expected to attempt only one of these questions.
3. Section A consists of 20 objective type questions carrying 1 mark each.
4. Section B consists of 6 Very Short questions carrying 02 marks each. Answers to these questions should be in the range of 30 to 50 words.
5. Section C consists of 7 Short Answer type questions carrying 03 marks each. Answers to these questions should be in the range of 50 to 80 words.
6. Section D consists of 3 Long Answer type questions carrying 05 marks each. Answer to these questions should be in the range of 80 to 120 words.
7. Section E consists of 3 source-based/case-based units of assessment of 04 marks each with sub-parts.

**SECTION A**

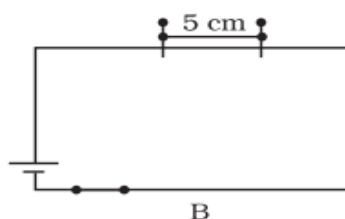
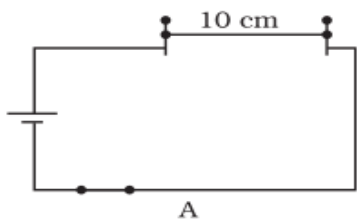
1. Turmeric is a natural indicator. On adding its paste to acid and base separately, which colours would be observed? (1)  
(A) Yellow in both acid and base (B) Yellow in acid and red in base  
(C) Pink in acid and yellow in base (D) Red in acid and blue in base
2. Which of the following is incorrect for a chemical change? (1)  
(A) Heat may be given out but never absorbed (B) Sound may be produced.  
(C) A colour change may take place (D) A gas may be evolved
3. The gas we use in the kitchen is called Liquefied Petroleum Gas (LPG). In the cylinder it exists as a liquid. When it comes out from the cylinder it becomes a gas (Change – (i)) then it burns (Change – (ii)). The following statements pertain to these changes. Choose the correct one. (1)  
(A) (i) is a chemical change. (B) Both (i) and (ii) are chemical changes.  
(C) (ii) is a chemical change. (D) None of these is a chemical change.
4. Which of the following is a part of inorganic impurities of sewage? (1)  
(A) Pesticides (B) Urea (C) Phosphates (D) Vegetable waste
5. Forests are not responsible for \_\_\_\_\_. (1)  
(A) providing medicinal plants (B) maintaining the flow of water into the streams  
(C) creating flood conditions (D) absorbing rainwater and maintaining water table
6. The finger-like outgrowths of the human intestine help to \_\_\_\_\_. (1)  
(A) absorb the undigested food (B) digest the fatty food substances  
(C) secrete bile juice (D) absorb the digested food
7. Identify the gland from the given options: (1)  
(A) Muscle (B) Heart (C) Lungs (D) Pancreas
8. Select the odd combination from the given animal groups based on their respiratory structures/organs. (1)  
(A) cockroach; grasshopper; beetle (B) fish; lizard; snake  
(C) crocodile; whale; dolphin (D) crow; goat; rabbit

9. Which of the following parts of the human excretory system performs the filtration of the nitrogenous waste from the body fluids? (1)  
 (A) Kidneys (B) Urinary bladder (C) Ureter (D) Urethra
10. After fertilisation in flowering plants, the zygote develops into \_\_\_\_\_ and \_\_\_\_\_ (1)  
 develops into seeds.  
 (A) embryo; ovary (B) fruit; embryo (C) embryo; ovules (D) ovules; embryo
11. Fruits having winged seed is a characteristic of seed dispersed by \_\_\_\_\_. (1)  
 (A) water (B) wind (C) cattle (D) birds
12. Asexual reproduction takes place through spore formation in \_\_\_\_\_. (1)  
 (A) Mosses (B) *Spirogyra* (C) Hydra (D) Bryophyllum

13. The distance-time graph of the motion of two athletes Ramu and Somu is shown here. Choose the correct answer based on the given graph. (1)



- (A) Ramu runs faster than Somu.  
 (B) Somu runs faster than Ramu.  
 (C) Both run at the same speed.  
 (D) None of the above.
14. The number of oscillations per second of a pendulum is called \_\_\_\_\_. (1)  
 (A) amplitude (B) frequency (C) time period (D) speed
15. Concave lenses always form \_\_\_\_\_ of an object. (1)  
 (A) virtual, erect and big image (B) virtual, erect and small image  
 (C) virtual, inverted and small image (D) virtual, inverted and big image
16. Two wires of same material and same thickness but different lengths are connected in the circuits A and B. The current flowing in both circuits is the same. In which circuit is the heat produced across the wire maximum? (1)



- (A) A only (B) B only (C) Both A and B (D) None of them

For question numbers 17 to 20, two statements are given—one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (A), (B), (C) and (D) as given below.

- (A) Both A and R are true and R is the correct explanation of A.  
 (B) Both A and R are true but R is NOT the correct explanation of A.  
 (C) A is true but R is false  
 (D) A is false and R is also false.
17. Assertion (A): A simple pendulum oscillates about its mean position. (1)  
 Reason (R): The time period of the pendulum is always constant.
18. Assertion (A): Cleaning of water is a process of removing pollutants before it enters a water body. (1)  
 Reason (R): The process of cleaning of water and removal of pollutants from it is called “sewage treatment”.

19. Assertion (A): Loss of top soil is called soil erosion. (1)  
Reason (R): Heavy rains and deforestation causes loss of top soil.
20. Assertion (A): Plants lose water in the form of vapour through stomata. (1)  
Reason (R): Transpiration generates a force that pulls up water from the soil to reach the stem and leaves.

### SECTION B

21. Describe Newton's disc experiment with the help of a diagram. (2)
22. What is a fuse? How does it work in an electrical circuit? (2)
23. Explain why burning of wood and cutting the wood into small pieces are considered as two different types of changes. (2)

### OR

Explain why rusting of iron is faster in coastal areas than in deserts.

24. Name two alternative arrangements for sewage disposal where there is no sewerage system. (2)
25. Falguni took some grains of boiled rice in test tube 'R' while Bhavish took boiled and chewed rice in test tube 'S'. Both poured 1-2 drops of iodine solution into the test tube and observed the colour change of the rice. (2)  
(a) What colour change would have been observed in each of their test tube?  
(b) Justify their observation by stating the scientific reason.
26. Describe the mechanism that is involved during the inhalation phase of breathing in humans. (2)

### SECTION C

27. How are open drains harmful to human health? Discuss (3)
28. You are provided with four test tubes containing sugar solution, baking soda solution, tamarind solution, and salt solution. Write down the activity to find the nature (acidic/basic/neutral) of each solution. (3)
29. The odometer of a car reads 57380.0 km when the clock shows the time 08:30 AM. What is the distance moved by the car, if at 08:50 AM, the odometer reading has changed to 57400.0 km? Calculate the speed of the car in km/min during this time. (3)
30. Draw the symbols of the following circuit components and write any one use of each component in the circuit (i) Electric cell (ii) switch in off position and (iii) electric bulb. (3)
31. How does the magnetic effect of electric current help in the working of an electric bell? Explain with the help of a diagram. (3)
32. Observe the figures X, Y and Z that depict various stages of nutrition in amoeba. (3)



- (a) Rearrange the figures in the proper sequence of nutrition diagrammatically.  
(b) Explain the various stages of nutrition in amoeba.
33. A food stall owner while preparing dough for making bhaturas added a pinch of yeast and sugar in the flour. He kept the mixture in a warm place. After a few minutes, the dough increases in volume. (3)  
(a) What would have happened if the dough was kept in the refrigerator soon after it was prepared?

- (b) Write one similar phenomenon that you have observed in making of other such food items.
- (c) Why did he add yeast and sugar while preparing the dough?

**SECTION D**

34. Describe an activity with a neat labelled diagram to explain the process of neutralisation reaction. (5)

**OR**

A farmer was unhappy because of his low crop yield. He discussed the problem with an agricultural scientist and realised that the soil of his field was either too acidic or too basic. What remedy would you suggest to the farmer to neutralise the soil?

35. (a) State the characteristics of the image formed by a plane mirror. (5)  
 (b) Rani is observing her image in a plane mirror. The distance between the mirror and her image is 5m. If she moves 2m towards the mirror, then what will be the distance between Rani and her image?  
 (c) Write any two common points among all three types of mirrors.

**OR**

- (a) Write any two differences between real and virtual images.  
 (b) Give reason for the following:  
 (i) Concave mirrors are preferred by dentists to see tooth decay.  
 (ii) Convex mirrors are used as rear-view mirrors in vehicles.  
 (iii) Convex lens is used as a magnifying glass.
36. (a) Draw the male and female reproductive parts of a flower and label its parts. (5)  
 (b) What happens when pollen lands on the stigma of the same flower?  
 (c) Where and how does fertilisation occur in a flower after pollination?

**OR**

- (a) What is cross pollination?  
 (b) Write two differences between self-pollination and cross pollination.  
 (c) Why is seed dispersal essential to flowering plants?  
 (d) Name two plants that exhibit seed dispersal by animals.

**SECTION E**

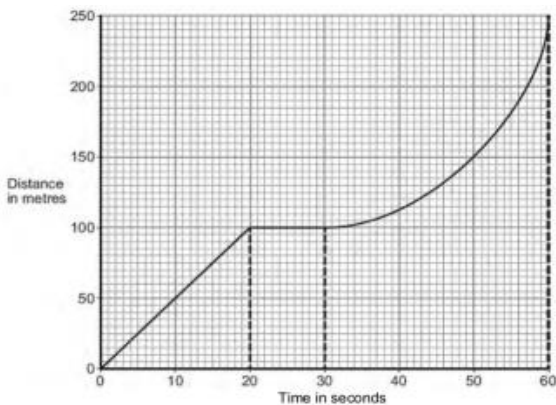
Questions 37 to 39 are Source-based/Case study-based questions of 4 marks with sub-parts.

37. Graphs play a crucial role in our everyday lives, often going unnoticed as powerful tools that convey information in a visual and accessible manner. The important use of line graph is to track the changes over the short and long period of time. It is also used to compare the changes over the same period of time for different groups. The distance-time graph of a cyclist is shown in the figure. Study the graph carefully and answer the following questions. (4)

- (i) What type of motion is described by the cyclist during his entire trip? Justify your answer.
- (ii) Find average speed of the cyclist.
- (iii) Draw distance- time table for the given graph.

**OR**

- (iii) Calculate the speed of the bus during the time intervals (a) 0 to 20s and (b) 20 to 30s.



38. Prof Saren explained why forests are called Green lungs to Sarita who is studying in 7<sup>th</sup> class. He explained that plants release oxygen through the process of photosynthesis. The plants help to provide oxygen for animal respiration. They also maintain the balance of oxygen and carbon dioxide in the atmosphere. That's why forests are called lungs. The children saw clouds forming in the sky. Trees take in water from their roots and release water vapour into the air through evaporation. If there were fewer trees, how will the water cycle be affected? He told them that the forest is not just home to plants and animals. Many people also live in the forest. Some of them may belong to different tribes and also explained that these people depend mostly on the forests. The forest provides them with food, shelter, water and medicines. They have traditional knowledge about many medicinal plants in the forest.

- (i) Name the process through which plants release oxygen. (1)
- (ii) Trees take in water through \_\_\_\_ and release it to the environment in the form of \_\_\_\_\_. (1)
- (iii) What do forests provide to humans? (2)

**OR**

(iii) What does the presence of humus ensure?

39. In the human blood circulatory system, there are different types of blood vessels in the body. During inhalation, oxygen-rich air fills the lungs. Oxygen rich blood is transported by the blood vessels to the rest of the body. Also, the blood picks up the waste materials including carbon dioxide from the cells. This blood goes back to the heart for transport to the lungs for removal of carbon dioxide during exhalation. Blood vessels carry oxygen-rich blood from the heart to all parts of the body and carry carbon dioxide-rich blood from all parts of the body back to the heart.

- (i) \_\_\_\_\_ is present in the veins that allow only unidirectional flow of blood in the human body. (1)
- (ii) Name the blood vessels that carry deoxygenated blood to the heart. (1)
- (iii) How many types of blood vessels are present in the human body? Name them. (2)

**OR**

(iii) Is the aorta an artery or vein? Write a scientific reason for your answer.