



ANANDALAYA
ANNUAL EXAMINATION
Class: VII

Subject: Science
Date : 07-03-2025

M M: 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 questions having assessment of 04 marks each with sub-parts.

SECTION - A

1. Among the following options, which one is a source of waste water? (1)
(A) Manholes (B) Sewerage (C) Sewage (D) Homes
2. Mushrooms are an example of _____. (1)
(A) autotrophs (B) heterotrophs (C) parasites (D) saprophytes
3. The table shows the area under forest of different regions. (1)

Region	Forest cover area in sq. km
A	983.24
B	2172.09
C	888.12
D	4894.35

Which region will be more prone to flood?

- (A) Region A (B) Region B (C) Region C (D) Region D
4. Which property does not change in a physical change? (1)
(A) Shape (B) size (C) state (D) chemical composition
 5. Water polluted by various human activities causes a number of water borne diseases. Which of the following is not a water borne disease? (1)
(A) Cholera (B) Typhoid (C) Asthma (D) Dysentery
 6. Which of the following substances is bitter in taste and soapy in touch? (1)
(A) Sodium chloride (B) Hydrochloric acid
(C) Sodium hydroxide (D) Sodium metal
 7. The digestive tract and the associated glands together constitute _____. (1)
(A) Digestive system (B) Alimentary canal
(C) Nutritive system (D) Glandular system

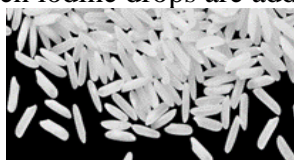
8. Which of the following will turn blue-black when iodine drops are added to it? (1)



(A)



(B)



(C)



(D)

9. The percentage of oxygen in inhaled and exhaled air is _____. (1)

(A) 21% ; 16.4%

(B) 16.4% ; 21%

(C) 21% ; 4.4%

(D) 16.4% ; 4.4%

10. The blood vessels which carry carbon dioxide-rich blood from all parts of the body back to the heart are _____. (1)

(A) superior and inferior vena cava

(B) inferior vena cava and pulmonary vein

(C) superior vena cava and pulmonary vein

(D) superior vena cava and pulmonary artery

11. Which of the following is/are true about sexual reproduction in plants? (1)

(i) Plants are obtained from seeds

(ii) Two parent plants are always required

(iii) Fertilisation occurs only after pollination

(iv) Only insects are the pollinating agents

(A) (i); (ii); (iii)

(B) Only (i)

(C) Only (iii)

(D) (i); (iii)

12. The plant parts that can also give rise to new plants without fruit formation are _____. (1)

(A) potato and sweet potato

(B) onion and turnip

(C) carrot and ginger

(D) ginger and turmeric

13. Abaan wants to measure the speed of a ball rolling down a ramp. Which of these are required to measure the speed of the ball? (1)

(A) Hourglass and elastic tape

(B) Stop watch and measuring Tape

(C) Stopwatch and elastic tape

(D) Hourglass and compass

14. The coil of wire used in electric heaters is known as heating _____. (1)

(A) circuit

(B) filament

(C) element

(D) handle

15. An object is placed at a distance of 0.5 m in front of a plane mirror. The distance between the object and its image will be (1)

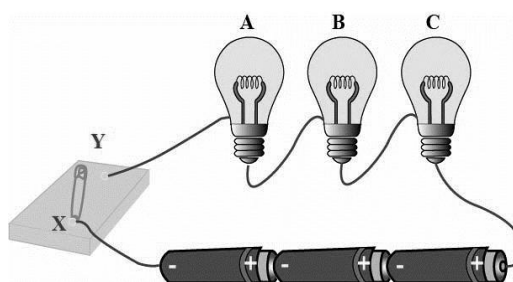
(A) 2 m

(B) 1 m

(C) 0.5 m

(D) 0.25 m

16. Three bulbs A, B and C are connected in a circuit as shown in the figure below. If the switch XY is turned 'ON' then, (1)



(A) Bulb B and C will glow simultaneously and A will glow after sometime.

(B) Bulb C will glow first.

(C) All the bulbs A, B and C will glow at the same time.

(D) The bulbs will glow in the order A, B and C.

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. (A): In uniform motion, the speed of the object changes with time. (1)
(R): Motion of a car in a traffic jam is an example of uniform motion.
18. (A): Heating of a metal blade strongly in air is a chemical change. (1)
(B): During heating a metal blade it gets rusted and turns reddish brown in colour.
19. (A): Digestion of carbohydrates, like starch, begins in the buccal cavity. (1)
(R): The digested food is absorbed in the blood vessels from small intestines.
20. (A): Bisexual flowers contain both stamen and pistil. (1)
(R): Cross-pollination occurs mostly in bisexual flowers.

SECTION - B

21. What is an electric fuse? How can it help us to keep our electrical appliances safe? (2)
22. Explain the following. (2)
 - (a) Tungsten is exclusively used as a filament of an electric bulb.
 - (b) Copper or aluminium is used in wires to transmit electricity.

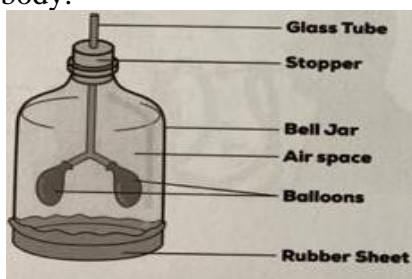
OR

- (a) Draw lines to indicate how you will connect the terminals using wires to make a battery of four cells.



- (b) What is the use of a battery in a circuit?

23. (a) Suggest two alternative arrangements for sewage disposal where there is no sewerage system. (2)
(b) Differentiate between sewage and sewers.
24. Give reason: (2)
 - i) Crystallisation is regarded as a physical change.
 - ii) Curdling of milk is a chemical change.
25. Name the body part/s that perform the following functions: (2)
 - (a) The membranous flap-like structure in veins for unidirectional flow of blood
 - (b) The blood component that provides immunity against diseases
 - (c) Tissue that transports water and minerals in plants
 - (d) The process that cools down the overall temperature of the plant
26. The figure below is the model that demonstrates the workings of the respiratory system in our human body. (2)



A



B

- (a) What does this model demonstrate?
 (b) What does the following in the model correspond to in our human respiratory system?
 (i) Glass tube (ii) Rubber Sheet (iii) Bell jar

SECTION - C

27. Forests are often considered vital to the health of our planet and the well-being of human societies. Discuss the various ecological and economic reasons for conserving forests. (3)
28. A student took a solution of copper sulphate in a beaker and put a clean iron nail in to it and left it undisturbed for an hour. (3)
 (a) Write any two possible changes you expect during this reaction.
 (b) Write a word equation for this chemical change.

OR

A substance 'X' burns in air with white dazzling light and forms a powder 'Y'. This powder 'Y' when mixed with water and tested with red litmus, turned it blue.

- (a) Identify the substances 'X' and 'Y'.
 (b) What is the nature of the solution formed after mixing powder 'Y' with water?
29. (a) Define frequency and time period of a simple pendulum. Write their SI units. (3)
 (b) A simple pendulum takes 20s to complete 100 oscillations. Find its time period.
30. (a) Differentiate between a real and a virtual image. (3)
 (b) Manit has spherical mirrors and spherical lenses in his Science lab kit. He wishes to obtain a real image of a distant tree. Explain two possible ways in which he can obtain the image.
31. (a) What is an electromagnet? (3)
 (b) How do you increase the strength of the electromagnet?
 (c) Write any two devices in which electromagnets are used.
32. Write a scientific reason for the following statements: (3)
 (a) Humans cannot digest cellulose.
 (b) Our small intestine is narrower and longer than the large intestine
 (c) Humans and Amoeba are said to exhibit similar modes of nutrition.
33. The three types of blood vessels in the human body transport respiratory gases, nutrients, hormones and nitrogenous waste to the target site. (3)
 (a) Name the three types of blood vessels.
 (b) Why is the pulmonary artery called so, though it carries deoxygenated blood?
 (c) What is dialysis?

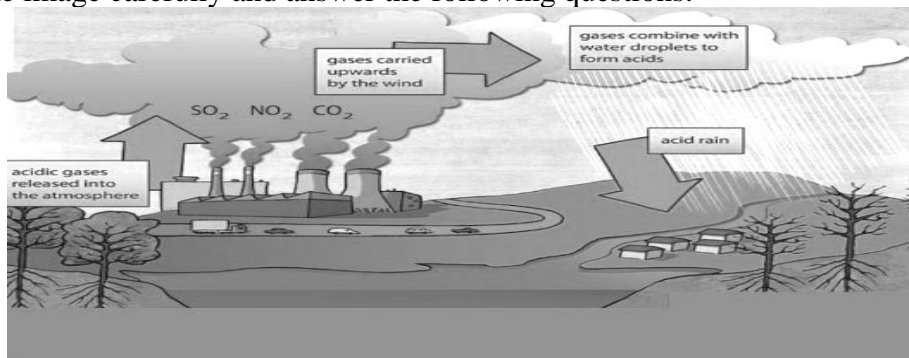
SECTION - D

34. (a) Justify whether the following statement is true or false. 'Both acids and bases change colour of all indicators.' Take an example to explain your answer. (5)
 (b) A student took some dilute hydrochloric acid in a flask, added a few drops of phenolphthalein and mixed it gently. After that the student added sodium hydroxide drop by drop to this solution and continued until he saw some change in colour of the solution.
 (i) Name the type of reaction that experiment demonstrates.
 (ii) Represent this chemical reaction in the form of word equation.
 (iii) Describe the change in colour of the solution when sodium hydroxide was added.

OR

- (a) A person is suffering from the problem of acidity after overeating. Which of the following would you suggest as remedy? Lemon juice, vinegar, baking soda solution
 (b) Why are organic matter added to the soil?

(c) Study the image carefully and answer the following questions.



- (i) Name the gases responsible for acid rain.
- (ii) Write two harms caused due to acid rain.

35. (a) You are given three mirrors- plane, convex and concave. How will you identify them based on the type of images they form? Explain in detail. (5)
- (b) Mention any one use of convex mirror and concave mirror in daily life.

OR

- (a) Dhruvi dropped a water droplet on a newspaper. She found out that the letters are appearing larger than the droplet. Why is it so?
 - (b) A lens always forms a virtual, erect and small image of an object placed before it. Identify the type of lens and draw the same.
 - (c) What is dispersion of light? Describe Newton's disc experiment.
36. (a) Show cross-pollination in flowering plants with the help of a labelled diagram. (5)
- (b) Explain any two differences between self-pollination and cross-pollination.
- (c) How can we grow a plant from the rose parent plant?

OR

- (a) How can you grow money plants by vegetative propagation?
- (b) Draw the male and female reproductive parts of a flower and label the parts.
- (c) Explain the benefits of seed dispersal to the plants.

SECTION - E

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

37. Mr. Rudra lives in Anand. He visited Surat for official purpose by taking a cab. While in his cab, he noticed the odometer and started to record odometer readings at different time intervals throughout the journey. The reading at the start of the journey was 23550 km. The table shows the odometer readings at different time intervals.

TIME	ODOMETER READING
0 min	23550 km
30 min	23575 km
60 min	23620 km
90 min	23670 km
120 min	23730 km
150 min	23750 km

- (i) What is the total distance covered by Mr. Rudra? (1)
- (ii) Find the average speed of the cab in km/h. (1)
- (iii) Plot the distance-time graph of the cab's journey and also identify the type of motion. (2)

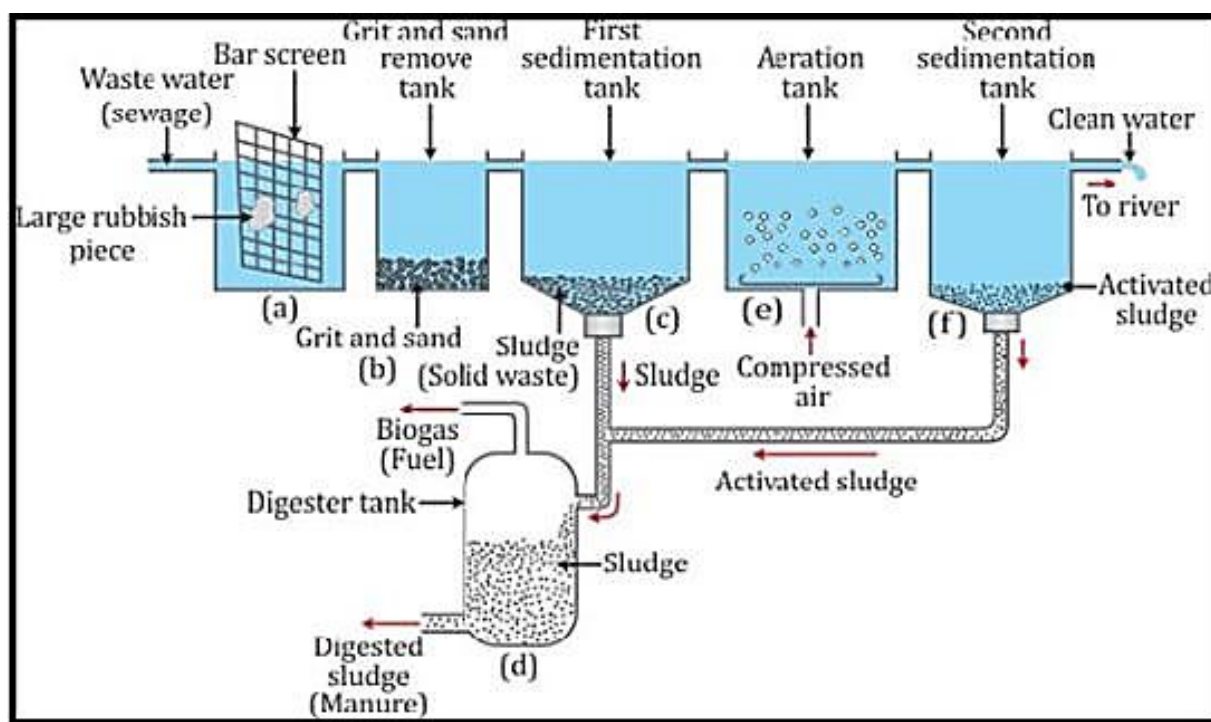
OR

- (iii) Draw the distance-time graph for uniform and non-uniform motion and also define the motions.

38. It used to be said that “the solution to pollution is dilution.” When small amounts of sewage are discharged into a flowing body of water, a natural process of stream self-purification occurs. Densely populated communities generate such large quantities of sewage, however, that dilution alone does not prevent pollution. This makes it necessary to treat or purify wastewater to some degree before disposal.

The removal of impurities from wastewater, or sewage, before it reaches aquifers or natural bodies of water such as rivers, lakes, estuaries and oceans is known as waste water treatment.

The following is the schematic diagram of sewage treatment plant.



- (i) What is the function of bar screens in waste water treatment plant? (1)
(ii) Why is air bubbled through the aeration tank during the treatment of sewage? (1)
(iii) Name two organic and two inorganic impurities present in waste water. (2)

OR

- (iii) What is Activated sludge and Dried sludge?

39. Respiration is a biochemical process that occurs within the cells of all living organisms. Like other living organisms, plants also exchange gases with their environment. However, plants do not possess any transport system for the gases. Different parts of plants exchange gases independently. The plant parts respire at different rates. The energy liberated during the oxidation of the respiratory substrate is partly stored as energy.

- (i) Why is respiration, a vital biological process in all living organisms? (1)
(ii) Do plants and animals breathe or respire to obtain energy? (1)
(iii) Write any two respiratory pathways that provide energy in various organisms. (2)

OR

- (iii) Compare the tracheae of a cockroach with that of the trachea of the human respiratory system and describe both.