

## 10<sup>th</sup> Class SAMPLE PAPER - 5 (Annual Exam 2018)

Time Allowed: 3 hours

Subject: Science

Maximum marks: 80

### General Instructions

- (1) Question numbers 1 and 2 in Section-A are one mark question. They are to be answered in one word or in one sentence.
- (2) Question numbers 3 to 5 in Section- A are two marks questions. These are to be answered in 30 words each.
- (3) Question numbers 6 to 15 in Section-A are three marks questions. These are to be answered in about 50 words each.
- (4) Question numbers 16 to 21 in Section-A are 5 marks questions. These are to be answered in 70 words each.
- (5) Question numbers 22 to 27 in Section- B are based on practical skills. Each question is a two marks question. These are to be answered in brief.
- (6) There is no overall choice. However, there is an internal choice in two questions of three marks each and one question of five marks.

### Section {A}

1. Determine the value of minimum resistance that can be made using 6 resistors each of  $1/4 \Omega$ .
2. Give two uses of bleaching powder.
3. The absolute refractive indices of glass and water are  $4/3$  and  $/2$ , respectively.

If the speed of light in glass is  $2 \times 10^8$  m/s, then determine the speed of light in (i) vacuum (ii) Water

4. 'No indicator is suitable for titrating of the mixture of acetic acid and ammonium hydroxide .Justify?
5. You have wood. Kerosene, coal and LPG. Which one of the source of energy would you use for cooking food.and why?
6. (i) Name the type of movement of plants in following cases:
  - (a)Growth of pollen tube towards chemicals (b) Shoot growing towards sunlight,
  - (ii) Name the plant hormone which (a) inhibits growth (b)promotes cell division (c) helps the cells to grow longer(d), helps in growth of the stem
7. Mr. Sharma is suffering from many diseases simultaneously. After undergoing a thorough health check-up, he was diagnosed as HIV +ve. Soon this news spread in his neighborhood, He was socially isolated.

Read the above passage and answer the following questions.

- (i) Do you think peoples indifferences towards HIV +ve people is justifiable? (ii)What kind of approach should we have towards the person suffering from AIDS? (iii) How can one protect oneself from this disease?

Or Draw well belled diagram of a neuron showing the following parts: dendrites, axon, node of Ranvier, Nissl's granules and myelin sheath.

8. (i) Why are some patients of, diabetes treated by giving injections of insulin?

- (ii) Name the hormone that regulates carbohydrate, protein and fat metabolism in the body?

9. Tarnished copper vessels are cleaned with lemon or tamarind. Why?
10. What happens when (i) Ethene reacts with bromine water? (ii) A small piece of sodium metal is dropped in ethanol? (iii) Ethanol reacts with acidified potassium dichromate solution?
11. Part of the periodic table is given below where atomic numbers of elements are given in the parenthesis.  
B (4), O (8), Mg (12), S (16), Ca (20), Se(34), Sr(38) and Te(52)
- (i) Write the electronic configuration of Sulphur (s) and calcium (Ca).
- (ii) What is the number of shells in the atoms of magnesium (Mg) and selenium (Se)?
- (iii) Write the chemical formula of the compound when calcium (Ca) combines with Oxygen (O) and also write its electron dot structure.
12. (i) Define isomerism. (ii) How many structural isomers can you draw for pentane?
- OR,
- Consider the following elements B, Si, F, N, and C
- (i) Arrange the given elements in the increasing order of Non-metallic characters
- (ii) Write the electronic configuration of Si and N'.
13. (i) A concave mirror is used as a head mirror by ENT specialists. The same mirror can also be used as a saving mirror. Why?
- (ii) Between which two points of a concave mirror should an object be placed to get magnification of - 3?
14. Define resistance. State its SI unit? How does resistance vary with area of cross section of the wire?
15. The position of three elements A, B and C are shown below:
- |          |          |
|----------|----------|
| Group 16 | Group 17 |
| -----    | -----    |
| -----    | A        |
| -----    | -----    |
| B        | C        |
- Giving reasons, explain the following.
- (1) Element A is a non-metal.
- (ii) Element B has a larger atomic size than element C.
- (iii) Element C has a valency of 1.
16. Bacteria have simpler body functions when compared with the human beings. Do you mean that human beings are more evolved than bacteria?
17. Explain the following with reason:
- (i) The Sun appears reddish early in the morning?
- (ii) The sky appears dark instead of blue to an astronaut?
- (iii) Red lights are used for danger signals?
18. Describe the process of digestion of food in humans with the help of diagram.

19. (i) What is meant by 'magnetic field'.(ii) List four properties of magnetic field lines (iii) Trace the magnetic field lines around and inside a bar magnet.

**Or,** (i) Write any two differences between permanent magnet and electromagnet?

(ii) Write any two factor on which strength of an electromagnet depends.

(iii) Write in which direction does the wire in a diagram given below tend to move.

20. Compare metal and non-metals on the basis of (i) Physical state (ii) Luster (iii) Ductility (iv) Melting and boiling points (v) Density

21. (i) What are decomposers? What will be the consequence of their absence in an ecosystem? (ii) Which of the following is always at the third trophic level in food chain? Carnivores, herbivores, producers.

### Section {B}

22. You are given an ammeter that has 20 divisions between zero mark and 2A marks on its scale. Determine its least count.

23. What happens when crystals of lead nitrate are heated strongly in a dry test tube? Write chemical equation.

24. While performing the experiment to observe the embryo of a dicot seed, the teacher asked you to prepare three set-ups as following:

Set-up (A) Maize seeds at room temperature.

Set-up (B) Gram seeds at room temperature.

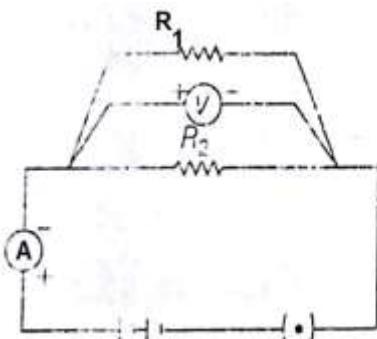
Set-up (C) Pea seeds at 4°C temperature.

Which set up will be used by the students to observe appropriate results.

Give reason

25. In an experiment student was given the following circuit.

On plugging the key in the circuit, the voltmeter reads 2.0 V, but ammeter reads 0.6A. Determine the resistance of the combination?



26. Germinating seeds are used for experimentally showing the release of CO<sub>2</sub> during the process of respiration.

Why?

27. The following table of refractive indices of a few media was given to you.

Medium	Ice	Kerosene	Benzene	Rock salt	Sapphire
Refractive index	1.31	1.44	1.50	1.54	1.77

Using the table you have to determine the following quantities.

(i) A medium pair so that light speeds up as it goes from one medium to another medium

(ii) A medium pair so that light slows down as it goes from one medium to another - medium.