

## 10<sup>th</sup> Class Exam 2018 SAMPLE PAPER -4

**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

#### one mark question

- 1 What do you understand by the statement that the potential difference between two points is 1 volt?
- 2 State any two methods of artificial vegetative propagation with examples.

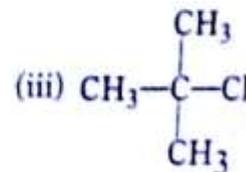
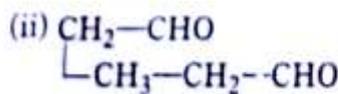
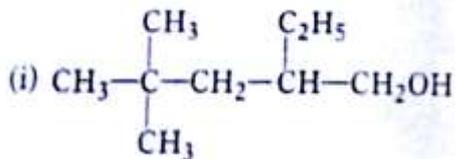
#### Two marks question

- 3 Determine maximum power of accommodation of a person having normal vision of eye
- 4 It is seen that chromosome number is 16 in zygote, embryonal cells as well as adult or a particular organism. Justify.
- 5 In the given food chain—plants → rats → snakes. If the energy produced by snakes is 20 J. How much of the energy plants and rats would have?

#### Three marks question

- 6 In a class, a physics teacher told her students that our eyes can see even after our death. She told that by donating our eyes after we die, one pair of our eyes can give vision to two corneal blind people. Eye donors may belong to either sex or from any age group. People who are suffering from diabetes, hypertension, asthma or from any other non-communicable disease can also donate eyes. Eye banks have been established for this purpose. Where you can pledge to donate your eyes after your death. Read the above text and answer the following questions.
    - (i) Is it possible that people using spectacles or those who have been operated for cataract, donate their eyes?
    - (ii) Why is the pledge necessary?
    - (iii) Do you intend to make such a pledge? Why?
  - 7
    - (i) Which of the following compounds give substitution reactions and why?  $C_4H_8, C_4H_{10}, C_5H_{10}, C_5H_{12}$
    - (ii) Which hydrocarbons burn with (a) non sooty blue flame? (b) sooty yellow flame?
    - (iii) What happens when methane reacts with chlorine?
  - 8 Draw a flowchart to show the change of oxygen and carbon dioxide in alveoli.
- Or
- Write three points of difference between aerobic and anaerobic respiration.

- 9 How many information can be obtained from electronic configuration of the outermost orbit? Mention at least, three information regarding the element.
- 10 Hydrogen occupies a unique position in the modern periodic table. Justify this statement.
- 11 Write the IUPAC name of the following compounds.



- OR, The neutral atom of an element E consists of 12 electrons in its atoms. (i) In which period and group E should be placed? (ii) Name the element E. (iii) How many electrons does it need to lose or gain to achieve noble gas configuration. (iv) What will be the nature of oxide (acidic/basic) of E? Justify your answer. (v) Write the formula of chloride of E
- 12 How would you distinguish between baking soda and washing soda by heating?
- 13 Why is it more to compare the process of evolution with branches of a tree rather than with a ladder?
- 14 Under what conditions permanent magnet is obtained if a current-carrying solenoid is used? Support your answer with the help of a labelled circuit diagram.
- 15 Answer the following questions: (i) In countries where it snows heavily, roads are cleared by sprinkling salt. What is the reason behind this?  
(ii) Name the three chemical substances obtained when electricity is passed through an aqueous solution of brine.  
(iii) The pH value of pure water below 25°C is greater than 7. Will the nature of water become basic? Give reason.

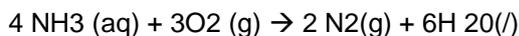
### Five marks question

- 16 What constitutes the central and peripheral nervous system? How are the components of central nervous system protected?
- 17 17. (i) State the laws of refraction of light. Explain the term absolute refractive index of a medium and write an expression to relate it with the speed of light in vacuum. (ii) The absolute refractive indices of two media A and B are 2 and 1.5, respectively. If the speed of light in medium B is  $2 \times 10^8$  m/s, calculate the speed of light in (a) vacuum, (b) medium A
- 18 (i) What does STD stand for? Name two such diseases with their causative organisms caused by bacteria. (ii) Name the causative organism of AIDS. What are the modes of transmission of AIDS?
- 19 In order to complete the circuit, which devices are connected in parallel and in series to the resistor combination and why? Draw a circuit diagram to find equivalent resistance of two resistors R<sub>1</sub> and R<sub>2</sub> connected in parallel.
- Or
- (i) Name and define the smallest commercial unit of electricity?  
(ii) Nichrome is used to make the element of an electric heater. Why?  
(iii) Calculate the potential difference between the terminals of a battery, if 250 J of work is required to transfer 20 C of charge from one terminal of the battery to the other  
(iv) Define potential difference.

20 (i) Identify the compound which is oxidized in the following reaction.



(ii) Identify the reducing agent in the following reaction.



(iii) Write the balanced chemical equation for the following reaction:

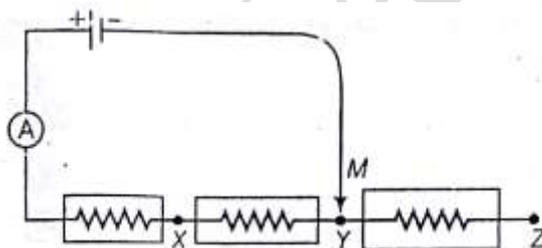
Aluminium + Copper chloride  $\rightarrow$  Aluminium chloride + Copper

(iv) Write one equation each for decomposition reactions where energy is supplied in the form of heat, light or electricity.

21 Give the principle, construction and working of a box type solar cooker.

### Section- B (Two marks question)

22 In an experiment a student connected a cell in series with an ammeter and three resistors (10Ω, 20Ω, 30Ω). The circuit can be completed by a movable contact M. When he connected M with X, the ammeter read 0.6A. What is the ammeter reading when M is connected to Y?



23 A metal that exists as a liquid at room temperature is obtained by heating its sulphide in the presence of air. Identify the metal and its ore and give the reaction involved.

24 The table shows protein, fat and carbohydrate content in 10 gm of rice and white fish.

Food	Protein/gm	Fat/gm	Carbohydrate/gm
Rice	0.6	0.1	8.7
White fish	1.6	0.005	0.0

From the above observation, what would be the main end products of digestion of a meal of rice and white fish?

25 A student was asked to use convex lens and he obtained a sharp image of a distant object on a screen. In order to determine the focal length of a lens, what should he do?

26 If two pink colored flowers on crossing resulted in 1 red, 2 pink and 1 white flower progeny. What would be the nature of cross?

27 In an experiment there are two coils wound on a non-conducting cylindrical rod. Initially, key is not inserted. Discuss the case when key is inserted and when it is removed.

