

10th Class Exam 2018 SAMPLE PAPER -6

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 Why is a biogas plant a safe and efficient method of waste disposal ? Justify,
- 2 A bacterial cell is different from cells of other organisms. Name the feature which makes it different from others.

Two marks question

- 3 Metals are said to be shiny. Then why do metals generally appear to be dull? How can their 2 brightness be restored?
- 4 Name the hormone which is released when we are in a scary situation ? Write two effects of this hormone on our body that enable the body to deal with the situation.
- 5 Explain why there should be equitable distribution of resources ?

Three marks question

- 6 How will you extract mercury from its sulphide ore? Write chemical equation for extraction. Identify the sulphide ore.
- Or Give reason for the following ; (a) Ionic compounds are usually hard. (b) Sodium chloride has a high melting point. (c) Non-metals do not displace hydrogen from dilute acids.
- 7 Mention the cause & symptom of disease Goitre. How can it be controlled. Name the Endocrine gland associated with it.
- 8 List three factors that provide evidences in favour of evolution in organisms and state the role of each in brief-
- 9 List the various factors on which the resistance of a cylindrical conductor depends. Write an expression relating these factors. How is resistance of a conductor different from its resistivity?
- 10 (a) Symbolically a plant with green pod colours (GG) is known as homozygous. What will be the following plants known as ? (i) Gg (ii) gg
(b) Did Mendel obtain any difference in result of original and reciprocal cross ?
- 11 Li, Be, B, C, N, O, F and Ne are placed in the same period.

- (i) What is the criterion for placing elements in the same period ?
(ii) Identify the non – metals among them.
(iii) How does the atomic radius changes as we go from left to right in a period ?
- Or, Name two metals which do not corrode easily. Give an example in each of the following case to support that :
(i) Corrosion of some metals is an advantage (ii) Corrosion of a metal is a serious problem.
- 12 DNA content has the tendency to double itself during sexual reproduction due to combining of the genetic materials from two parents. How can the problem of DNA doubling be solved to maintain the consistency of the genetic material throughout the species ?
- 13 A rear view mirror used in a car has radius of curvature of 3 m. A bus is located at 5 m from the mirror. Find the position, nature and size of the image formed by the mirror.
- 14 Name, state and explain with an example the rule used to determine the direction of force experienced by a current carrying conductor placed in a uniform magnetic field.
- 15 What is an electric fuse? What is its role in electric circuits? Should it be placed on neutral wire or on live wire? Justify your answer.
Five marks question
- 16 Suppose you have three concave mirrors A, B and C of focal lengths 10 cm, 15 cm and 20 cm. For each concave Mirror you perform the experiment of image formation for three values of object distance of 10 cm, 20 cm and 30 cm.
Giving reason answer the following :
- (a) For the three object distances, identify the mirror/mirrors which will form an image of magnification — 1.
(b) Out of the three mirrors identify the mirror which would be preferred to be used for shaving purposes/makeup.
(c) For the mirror B draw ray diagram for image formation for object distances 10 cm and 20 cm.
- 17 What are micelles ? Why does it form when soap is added to water ? Will a micelle be formed in other solvents such as ethanol also ? State briefly how the formation of micelles help to clean the clothes having oily spots
- 18 (a) Distinguish between the terms electrical resistance and resistivity of a conductor.
(b) A copper wire of resistivity 1.6×10^{-8} ohm meter has a cross section area of 10×10^{-4} cm². Calculate the length of the wire required to make a 20 ohm coil.
- 19 An organic compound 'A' of molecular formula $C_2H_4O_2$ is widely used as preservative in pickles. This compound reacts with ethanol to form a sweet smelling compound 'B'.
(i) Identify the compound A. (ii) Write the chemical equation for the reaction involved.
(iii) Name the reaction. (iv) Name the gas produced when compound 'A' reacts with Sodium carbonate. Write chemical equation for the reaction.
- 20 Wings of bats and birds have different design. (a) Explain in which way are they different. (b) In which aspect do the wings of bat and bird resemble.
- 21 (a) A coil of insulated copper wire is connected to a galvanometer. With the help of a labelled diagram state what would be seen if a bar magnet with its south pole towards one face of this coil is
(i) moved quickly towards it, (ii) moved quickly away from it, (iii) placed near its one face ?
(b) Name the phenomena involved in the above cases, c) State Flemings right hand rule.

Or, State reason for the following statements :

- (i) Tap water conducts electricity whereas distilled water does not.
- (ii) Dry hydrogen chloride gas does not turn blue litmus red whereas dilute hydrochloric acid does.
- (iii) During summer season, a milkman usually adds a very small amount of baking soda to fresh milk.
- (iv) For dilution of an acid, acid is added into water and not water into acid.
- (v) Ammonia is a base but does not contain a hydroxyl group.

Section- B (Two marks question)

- 22 To find the image distance for varying object distances in case of a convex lens of focal length 15 cm, a student obtains on a screen a sharp image of a bright object by placing it at 20 cm distance from the lens. After that he gradually moves the object away from the lens and each time focuses the image on the screen.
- (a) In which direction-towards or away from the lens does he move the screen to focus the object
 - (b) How does the size of image change?
 - (c) Approximately at what distance does he obtain the image of magnification -1 ?
 - (d) How does the intensity of image change as the object moves farther and farther away from the lens?
- 23 In which asexual reproduction two individuals are formed from a single parent and the parental identity is lost? Draw the initial and the final stages of this type of reproduction to justify your answer. Write the event with which this process starts.
- 24 A student is studying the properties of acetic acid in his school laboratory. List two physical and two chemical properties which he must observe and note in his record book.
- 25 When an iron nail, rubbed with sand paper, is dipped in copper sulphate solution, what two observations would you make after some time ?
- 26 Kishan was asked to write any two precautions while preparing temporary mount of a leaf peel. He wrote the precautions as follows :
- (i) While removing the epidermal peel, ensure that you remove the bulky scrap of leaf.
 - (ii) Avoid air bubbles formation while putting a drop of glycerine over the peel.
- If Kishan is not correct, then correct him.
- 27 How will you calculate the least count of an ammeter

Hint: 27. If an Ammeter has 20 divisions between 0 mark and 0.5 A mark, then its

Least count = Minimum measure of unit between two marks / Number of divisions = $0.5/20 = 0.025$ A or 25 mA