SAMPLE QUESTION FOR PRACTICE (2017-18)

SUBJECT: SCIENCE

TIME- 3 Hours   CLASS-X   MM: 80

General Instructions:

I. **All** questions are **compulsory**.

II. There is no overall choice. However, an internal choice has been provided in two questions of three marks each and one question of five marks. Only one option in each question is to be attempted.

III. Question numbers **01** to **02** are **one mark** questions. These are to be answered in **one word** or in **one sentence**.

IV. Question numbers **03** to **05** are **two marks** questions. These are to be answered in about **30 words** each.

V. Question numbers **06** to **15** are **three marks** questions. These are to be answered in about **50 words** each.

VI. Question numbers **16** to **21** are **five marks** questions. These are to be answered in about **70 words** each.

VII. Question numbers **22** to **27** are **two marks** questions based on practical skills.

_____

1. An element 'A' has atomic number 16. To which group and period does it belong.   1

2. What is the phenotype ratio of a dihybrid cross in F_2 generation?   1

3. Name a hormone secreted by a) Pancreas and b) Pituitary. Write one function of each of the hormone.   2

4. The power of a lens is 2.5 dioptre. What is the focal length and the type of lens?   2

5. a) What is food chain? b) Why does a food chain generally consist of only three or four steps?   2

6. Give balanced chemical equations for each of the decomposition reaction carried out with the help of:

a) electricity   b) heat   c) sunlight.   3

7. (a) How is Plaster of Paris chemically different from gypsum? b) How can they be interconverted?

(c) Write any two uses of Plaster of Paris.   **OR,**   3

Give reasons for the following:

(a) Dry HCl does not change the colour of dry litmus paper. (b) Aqueous solution of an acid conducts electricity.

c) A tarnished copper vessel begins to shine again when rubbed with lemon.   3

8. A jeweler made jewellery of 22 carat gold and also charged his customers for the rate of 22 carat gold. His business grew due to this act. a) Why can't we make jewellery out of 24 carat gold?

b) Name two metals that can be added to make jewellery. c) What value of the jeweler is seen in the above act?   3

9. a) Draw the electron dot structure of ethanoic acid (CH_3COOH).

b) Give the IUPAC names of:

i) $CH_3-CH_2-CH_2-\underset{\underset{CH_3}{|}}{\overset{\overset{CH_3}{|}}{C}}-CH_3$ ii) $CH_3-CH_2-CH_2-CH_2-C\equiv C-H$

3

10. Given below are some elements of the modern periodic table. Atomic number of the elements are given in the parentheses: A (4), B (9), C (14), D (19), E (20).

a) Select the element that has one electron in the outermost shell. Also, write the electronic configuration of this element.

b) Which two elements amongst these belong to the same group? Give reason for your answer.

c) Which two elements amongst these belong to the same period? Which one of the two has bigger atomic radius? 3

11. What is reflex arc? Make a flow diagram of the components in a reflex arc.   3

12. The genotype of green-stemmed tomato plants is denoted as GG and that of purple-stemmed tomato plants as gg. When these two are crossed: a) What colour of stem would you expect in their F_1 progeny?

b) Give the percentage of purple-stemmed plants if F_1 plants are self pollinated.

c) In what ratio would you find the genotypes GG and Gg in the F_2 progeny?   3

13. List two causes leading to myopia of the eye. Draw ray diagrams to show the image formation in case of defective eye and corrected eye.   3

14. Derive the relation $R = R_1 + R_2 + R_3$ when three resistors R_1, R_2 and R_3 are connected in series.3

15. State the rule to determine the direction of a

a) magnetic field produced around a straight conductor carrying current.

b) force experienced by a current carrying straight conductor placed in a magnetic field which is perpendicular to it and

c) current induced in coil due to its rotation in a magnetic field.   3

OR

a) What is solenoid? (b) Draw the patterns of magnetic field lines through and around a current carrying solenoid.   3

16. a) List two characteristic features of carbon which when put together give rise to a number of

carbon compounds.

b) Name the simplest hydrocarbon and write its formula.

c) What is an ester? Write its preparation with the help of a balanced chemical equation.   5

17. a) What is blood pressure?   b)

Write two differences between aerobic respiration and anaerobic respiration.

c) Why is the rate of breathing in aquatic organisms much faster than in terrestrial organisms?   5

OR

a) Name an instrument which is used to measure blood pressure?   b)

Write two differences between an artery and a vein.

c) Why do veins have thin walls as compared to arteries?   5

18. a) What is regeneration? b) Write any two advantages of vegetative propagation.

c) Draw the diagram of a flower and label the following parts: (a) sepal (b) petal c) anther d) ovary.   5

19. a) State Snell's law of refraction. b) An object of size 7.0 cm is placed at 27 cm in front of a concave mirror of focal length 18 cm. At what distance from the mirror should a screen be placed, so that a sharp focused image can be obtained? Find the size and the nature of the image.   5

20. (a) Why is tungsten metal selected for making filaments of incandescent lamps? (b) Power of a lamp is 60 W. Find the energy in joules consumed by it in 1 s. (c) Draw a schematic diagram of a circuit consisting of a battery of three cells of 2 V each, a 5 Ω resistor, an 8 Ω resistor and a 12 Ω resistor, an ammeter and a plug key, all connected in series.   5

21. a) Compare the advantages of ground water over water available from the sources on the surface of earth. (Mention any two points)   b) Why are the Arabari forests of Bengal known to be a good example of conserved forest?   5

22. a) Name the reaction which takes place between Zn and HCl. (b) Why is it so called?   2

23. Write two properties of acetic acid.   2

24. Mention any two precautions while doing an experiment to verify Ohm's law.   2

25. a) What is the unit of refractive index?

   b) What will be the angle of emergence if a ray of light strikes the rectangular glass slab at an angle of 40^0.

26. Draw the diagram of stomata when open and label it.   2

27. What is budding? Give any two examples of organisms in which reproduction occurs through budding.   2