Vikas Bharati Public School
Class IX (Session 2017-18)
Subject : Science
Sample Paper

Time: 3 *Hours* | *Maximum Marks*: 80

General Instructions:

(i) *The question paper comprises of two Sections, A and B. You are to attempt both the sections.*

(ii) *All questions are* ***compulsory****. However, an internal choice will be provided in two questions of 3 marks each and one question of five marks.*

(iii) *All questions of Section A and all questions of Section B are to be attempted separately.*

(iv) *Question numbers* **1** *to* **2** *in Section A are one-mark questions. These are to be answered in one word or in one sentence.*

(v) *Question numbers* **3** *to* **5** *in Section A are two-marks questions. These are to be answered in about* **30** *words each.*

(vi) *Question numbers* **6** *to* **15** *in Section A are three-marks questions. These are to be answered in about* **50** *words each.*

(vii) *Question numbers* **16** *to* **21** *in Section A are five-marks questions. These are to be answered in about* **70** *words each.*

(viii) *Question numbers* **22** *to* **27** *in Section B are two-marks questions based on practical skills. These are to be answered in brief.*

SECTION–A

Q1. What is plasma membrane made up of? 1

Q2. What is the charge and mass of a neutron? 1

Q3. (a) Illustrate with an example that physical and chemical changes can takes place simultaneously.

(b) Which of the following are chemical changes:

(i) Mixing of iron filling and sand (ii) Growth of plant

(iii) Rusting of iron (iv) Freezing of water 2

Q4. What are the positions on the earth where the value '*g*' is (i) maximum, (ii) minimum? Justify your answer. 2

Q5. What is endoplasmic reticulum? Name the two types of endoplasmic reticulum. Write its main functions. 2

Q6. (a) Differentiate between epidermal and cork cells.

(b) Why are they called protective tissues? 3

Q7. (a) Calculate the molar mass of CH_3COOH. [Atomic mass of C = 12 *u*, H = 1 *u*, O = 16 *u*]

(b) Write the molecular formula for

(i) Aluminium chloride (ii) Ammonium nitrate

OR

How can we separate a mixture of two immiscible liquids? Describe the process. 3

Q8. List three characteristics of particulate nature of matter. 3

Q9. How are diseases spread through water? 3

Q10. Define velocity and acceleration. Is it possible for a body to have a zero velocity but constant acceleration. Justify your answer. 3

OR

State three characteristics of action-reaction forces.

Q11. List any three human activities which would lead to the increase in carbon dioxide content the air. **3**

Q12. (a) State the law of Constant Proportion.

(b) In the formation of a compound, carbon and oxygen react in the ratio 3: 8 by mass to form carbon dioxide. What mass of oxygen is required to react completely with 9 g of carbon? **3**

Q13. List any three ways of preventing the spread of airborne diseases. **3**

Q14. Plot velocity-time graph for a body whose initial velocity is 5 m/s and is moving with a constant retardation of 1 m/s^2. Also calculate the distance covered by it. **3**

Q15. Write the given statement after filling the blanks?

(a) Pila and Unio have an external shell and belong to the phylum _____ .

(b) Free living marine animals with water driven tube system are in the phylum _____ .

(c) Sponges belong to the phylum _____ . **3**

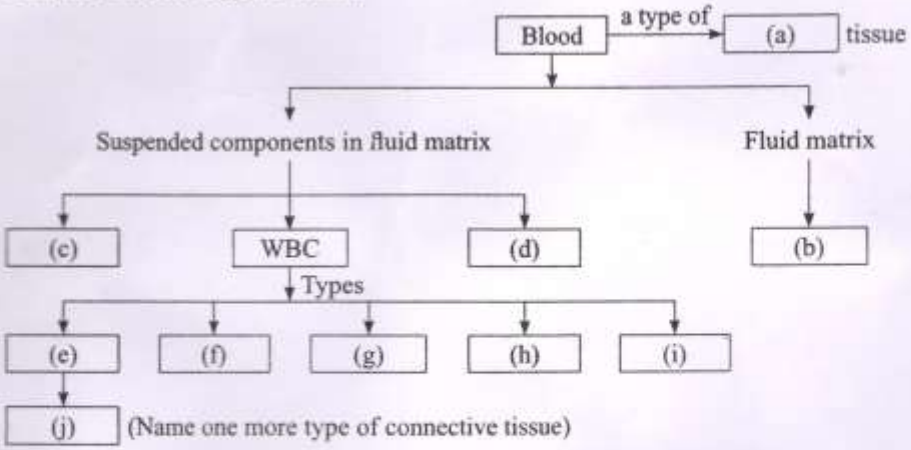
Q16. Which separation techniques you will apply for the separation of the following mixtures?

(a) Oil from water (b) Camphor from sand

(c) Sodium chloride from its solution in water

(d) Metal pieces from engine oil of a car (e) Cream from milk **5**

Q17. Complete the following flow chart:



(Name one more type of connective tissue) **5**

Q18. An element "X" has 13 protons, 13 electrons and 14 neutrons.

Answer the following questions:

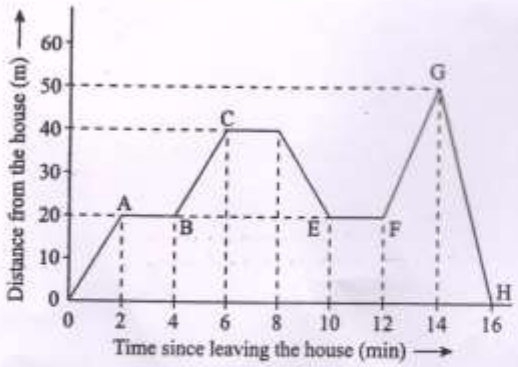
(a) What is the atomic number of 'X'? (b) Identify the element.

(c) What is its valency? What is the number of valence electron in 'X'?

(d) What is the type of ion formed by 'X'? Why?

(e) Name the scientist who discovered electrons and protons. **5**

Q19. The following graph describes the motion a girl going to meet her friend who stays 50 m away from her house.



(a) How much time will she take to reach her friend's house?

(b) What is the distance travelled by the girl during the time interval 0 to 12 min?

(c) During which time interval she is moving towards her house?

(d) For how many minutes she was at rest, during the entire journey?

(e) Calculate the speed by which she returned home. **5**

Q20. (a) What are the greenhouse gases?

(b) Give a diagrammatic representation of carbon cycle in nature. **5**

Q21. (a) Derive an expression for the potential energy of a body.

(b) When do you say that work is done?

(c) A porter lifts a luggage of 15 kg from the ground and puts on his head 1.5 m above the ground. Calculate the work done by him in lifting the luggage. **5**

OR

(a) Derive an expression for kinetic energy of a moving body.

(b) Name the type of energy possessed by

(i) Flowing water (ii) Stretched rubbed band

(c) A car weighing 2000 kg is accelerated from rest and covers a distance of 40 m in 6 seconds. Calculate the work done by the car.

SECTION–B

Q22. In an experiment 14 g of sodium hydrogen carbonate was allowed to react with 10g of acetic acid. After the reaction was completed it was found that only 16.67 g solution was left. What conclusion can you draw from this observation. **2**

Q23. Write the difference between male and female cones of Pinus? **2**

Q24. Why does the temperature remain unchanged until the entire solid changes into liquid even if we are heating the solid at the melting point? **2**

Q25. Two bottles of equal volume are filled with glycerine and water respectively. Which of the bottles will be heavier? Give reason for your answer. **2**

Q26. Why should magnesium ribbon be cleaned before burning in air? **2**

Q27. What precautions will you take while holding the spring balance to find the weight of a body? **2**

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