

# HALF YEARLY EXAMINATION, 2017-18

## SCIENCE

Time : 3 hrs.

Class IX

M.M. : 80

Date – 12.09.2017 (Tuesday)

Name of the student \_\_\_\_\_ Section \_\_\_\_\_

### General Instructions :

- The question paper comprises **two Sections, A and B**. You are to attempt both the sections.
- **All** questions are **compulsory**
- **All** questions of **Section-A** and **all** questions of **Section-B** are to be attempted separately.
- Question numbers **1 & 2** in **Section-A** are **one mark** questions. These are to be answered in **one word** or in **one sentence**
- Question numbers **3 to 5** in **Section-A** are **two marks** questions. These are to be answered in about **30 words** each.
- Question numbers **6 to 15** in **Section-A** are **three marks** questions. These are to be answered in about **50 words** each
- Question numbers **16 to 21** in **Section-A** are **five marks** questions. These are to be answered in about **70 words** each.
- Question numbers **22 to 27** in **Section-B** are **multiple choice questions** based on practical skills. Each question is a **two marks** question. You are to select one most appropriate response out of the four provided to you.

### SECTION-A

- Q.1** What is the value of acceleration, if velocity-time graph is a straight line parallel to the time axis? (1)
- Q.2** Mention one difference between simple permanent and complex permanent tissue. (1)
- Q.3** Define the following terms (2)
- i) Latent heat of fusion                      ii) Diffusion
- Q.4** A solution contains 30 g of common salt dissolved in 270 g of water. Calculate mass percentage of the solution. (2)
- Q.5** Draw the figure of nerve cell and label its two parts. (1+1)
- Q.6** Starting from a stationary position, Rahul paddles his bicycle to attain a velocity of 6 m/s in 30 sec. Then he applies brakes such that the velocity of the bicycle comes down to 4 m/s in the next 5 sec. Calculate the acceleration of the bicycle in both the cases. (3)
- Q.7** Derive  $S = ut + \frac{1}{2}at^2$  by graphical methods. (3)

**Q.8** Define Inertia. Does it depend on the mass of the body? How will you use this inertia to : (3)

- i) dust a carpet ?                      ii) remove water drops from wet cloth? Explain.

**OR**

State Newton's Second Law of Motion and derive its mathematical relation.

**Q.9** What happens to the force between two objects, if (3)

- i) the mass of one object is doubled?  
ii) the distance between the objects is doubled?  
iii) the masses of both objects are doubled?

**Q.10** i) Name any two cell organelles that contains their own genetic materials. (3)

- ii) Mention any two difference between prokaryotic and eukaryotic cell.

**OR**

Draw a neat diagram of a plant cell and label on it chloroplast, golgi apparatus, nucleus.

**Q.11** Diagrammatically show the difference between the three types of muscle fibres. (3)

**Q.12** Mention three ways in which insects, pests attack on plant. (3)

**Q.13** Your mother purchased fruits from the market and asked everybody to wash it properly before eating. Your sister was in a hurry and hence she ate an apple without washing it. (3)

- i) Why did your mother ask to wash the fruits before eating?  
ii) How will you know that pesticide residues are available in fruits and vegetables?  
iii) Should the Govt. ban pesticide?

**Q.14** Compare the three states of matter on the basis of - (3)

- i) Kinetic Energy    ii) Density                      iii) Inter-molecular force of attraction

**Q.15** Classify the following as element, compound or mixture- (3)

- i) Iron                                      ii) Brass                                      iii) Diamond  
iv) Common Salt                      v) Calcium Carbonate                      vi) Air

**Q.16** i) Explain, why is it difficult for a fireman to hold a hose, which ejects large amount of water at a high velocity. (2+3)

- ii) Two objects, each of mass 1.5 kg, are moving in the same straight line but in opposite directions. The velocity of each object is 2.5 m/s before the collision during which they stick together. What will be the velocity of the combined object after collision?

- Q.17** i) Write two differences between Mass & weight. (2+3)
- ii) Mass of a body is 90 kg on the surface of the earth. What would be its weight when measured on the surface of the moon? What would be its mass on the moon? (Take  $g = 10 \text{ m/s}^2$ )

- Q.18** i) How is a bacterial cell different from onion peel cell? (one difference). (1+2+2)
- ii) Differentiate between rough and smooth endoplasmic reticulum.(any 2)
- iii) How is endoplasmic reticulum important for membrane biogenesis?

- Q.19** i) Mention two types of animal feed and write their function. (2+3)
- ii) Mention any three desirable characteristics of bee varieties suitable for honey production?

- Q.20** i) Name the technique to separate - (5)
- a) Butter from curd
- b) Different pigments from extract of flower petal
- ii) Draw a labelled diagram of apparatus for simple distillation
- iii) Why rusting of iron is a chemical change whereas melting of ice is a physical change. Explain by giving two points.

**OR**

- i) Classify following as chemical and physical change
- a) burning of paper
- b) dissolving common salt in water,
- ii) Draw a labelled diagram of apparatus which separates two immiscible liquids.
- iii) Differentiate homogeneous and heterogeneous mixture with one example.
- Q.21** i) Give reason for the following - (3+2)
- a) Our palm feels cool when we put some acetone on it.
- b) Gases have highest rate of diffusion among all the states of matter.
- c) The temperature of a substance remains constant during its melting point and boiling point.
- ii) With the help of a diagram describe an activity to show that particles of matter are very small.

## SECTION-B

- Q.22** i) Action & reaction act on – (2)
- a) the same body in opposite directions.
  - b) different bodies in opposite directions.
  - c) the same body in the same direction
  - d) none of these
- ii) If an athlete takes 't' seconds to go once round a circular path of radius 'r', then his speed is given by –
- a)  $2\pi r/t$
  - b)  $\pi r^2/t$
  - c)  $t^2/\pi r$
  - d)  $t/\pi r^2$
- Q.23** Explain the following giving reasons – (2)
- i) We get hurt more by falling on a concrete structure than on a sand track.
- ii) In case of positive acceleration –
- a)  $v = u$
  - b)  $v > u$
  - c)  $v < u$
  - d) none of these
- Q.24** i) A substance is said to be in liquid state if under normal pressure its (2)
- a) m.p is above the room temperature
  - b) m.p is below the room temperature
  - c) b.p is below the room temperature
- ii) The m.p. of wax is 338 K. Express it in Celcius scale.
- Q.25** i) What is the sequence of step followed at the time of separation of mixture of sand, ammonium chloride and common salt. (2)
- ii) A solution is heterogenous, stable shows tyndall effect, solute particles can't be separated by filtration. Identify the solution and give any one example of such solution.
- Q.26** i) Tissue responsible for cell-division in plants is – (2)
- a) xylem
  - b) phloem
  - c) meristematic
  - d) sclerenchyma
- ii) Ligaments and tendons are form of –
- a) muscular tissue
  - b) epithelial tissue
  - c) nervous tissue
  - d) connective tissue
- Q.27** Draw and label Sclerenchyma tissue. (2)

