GRADE – IX

SCIENCE

UNIT TEST – I

M.M:- 60

Instructions:
Read the question paper carefully. Write neatly and legibly. Do not over write. Pay special attention to spelling. Read the answers before submitting the answer sheet.

Section A (Physics) 20 marks

I. Choose the correct answers to the questions from the given options: [2]

(i) Which of the following is not a contact force:
a) friction force
b) force of tension
c) normal reaction force
d) electrostatic force

(ii) S.I. unit of momentum is:
a) kg m s^{-1}
b) g cm s^{-1}
c) kg m s
d) g cm s

(iii) A force of 10 N acts on a body of mass 5 Kg. Find the acceleration.
a) 50 m s^{-2}
b) 2 m s^{-2}
c) 15 m s^{-2}
d) 25 m s^{-2}

(iv) Action and reaction act on the:
a) same body in opposite direction
b) different bodies in opposite direction
c) different bodies, but in same direction
d) same body, but in same direction

II. Answer the following questions: (Attempt any three) [9]

a) Why does a ball thrown vertically upward in a moving train, come back to the thrower's hand?
b) Show that the rate of change of momentum = mass x acceleration.
c) Explain the motion of a rocket with the help of Newton's third law.
d) State Newton's law of gravitation.
e) What is the importance of the law of gravitation?

III. Numericals :- [9]

a) A force of 10 N acts on a body of mass 2 kg for 3 s, initially at rest. Calculate : (i) the velocity acquired by the body, and (ii) change in momentum of the body.
b) A car of mass 480 kg moving at a speed of 54 km/h is stopped by applying brakes in 10 s. Calculate the force applied by the brakes.
c) A ball is released from a height and it reaches the ground in 3 s. If g= 9.8 $m\ s^{-2}$. find:
(a) The height from the ball was released
(b) The velocity with which the ball will strike the ground.

Section B (Chemistry) 20 marks

I. Balance the following equation:- [4]

1. $KClO_3 \longrightarrow KCl + O_2$
2. $Fe + H_2O \longrightarrow Fe_2O_3 + H_2$
3. $NH_3 + Cl_2 \longrightarrow N_2 + HCl$
4. $PbO + 2NH_3 \longrightarrow Pb + H_2O + N_2$

II. Write chemical formulae of the sulphates of aluminium and zinc. [2]

III. Write the chemical names of the following compounds: [3]

1. $Mg(HCO_3)_2$, 2. $Ca_3(PO_4)_2$ 3. $ZnSO_4$

IV. Calculate the percentage composition of each element in $KClO_3$. [3]

V. Sodium chloride reacts with silver nitrate to produce silver chloride and sodium nitrate [4]

1. Write the equation.
2. Check whether it is balanced, if not balanced it.
3. Find the weights of reactants and products.
4. State the law that this equation satisfies.

VI. Why is the symbol S for sulphur, but Na for sodium and Si for silicon? [2]

VII. Calculate the relative molecular masses of: [2]

1. $KClO_3$ 2. $(NH_4)_2SO_4$

[At. mass H=1, O=16, Cl=35.5, N=14, K=39, S=32]

Section C (Biology) 20 marks

I. Fill in the blanks [4]

1. _____ is the entire DNA sequence of an organ.
2. _____ are hereditary units.
3. Bioengineering deals with making artificial_
4. Protozoa that causes Malaria_

II. Name the following. [4]

1. Science of maintaining good health
2. Organism that cause diseases
3. Transmission of characters from parents to offsprings
4. Technique of producing silk by raising silkworms

III. Distinguish between [4]

1. Protoplasm and Cytoplasm 2. Embryology and Eugenics

IV. Give suitable explanation for the following. [4]

1. One should breathe by nose and never by mouth.
2. Eating places must be kept free of flies.

V. Answer the following questions. [4]

1. Give main functions of Lysosomes and Nucleus
2. What is Biology? Name and define its three major branches.