General Instruction:

•Marks are along with question.

•All questions are compulsory.

PART – A (PHYSICS)

Q1. Define the following terms: [4]

1. Uniform and Non-uniform motion.
2. Speed and velocity.
3. Force and momentum.
4. Work.

Q2. An object travels 16m in 4s and then another 16m in 2s, what is the average speed of the object? [2]

Q3. Prove, V = u + a.t [2]
Where u = initial velocity v = velocity at t time a = acceleration of the body.

Q4. State Newton's Second law of Motion and Prove: Force = Mass ×Acceleration. [2]

Q5. A bullet of mass 20g is fired horizontally with a velocity 150 ms-1 from a Piotol of mass 2kg. What is the recoil velocity of the Piotol? [3]

Q6. Establish the expression of Kinetic energy when a mass m is moving with velocity v. [3]

Q7. What is law of conservation of mechanical energy? [3]

Q8. Show that when a body is falling from a certain height from the ground, it obeys the law of conservation of energy. [3]

PART – B (CHEMISTRY)

Q1. Write the factors which affect the evaporation? [2]

Q2. How the water is cooled in soil Pitcher? [2]

Q3. Which state of matter have maximum force of attraction between their particles? [1]

Q4. How can you separate the cream from the milk? Write the activity [2]

Q5. What are the main difference between mixture and compound? Write minimum two differences. [2]

Q6. Define Homogeneous and Heterogeneous solution. [2]

Q7. 80 gm of copper sulphate dissolve in 560 gm of water. Calculate the concentration of solution in term of mass by mass percentage. [3]

Q8. Write the molecular formula of: [3]

 a. Magnesium Phosphate.
 b. Copper Hydroxide.
 c. Aluminum Sulphate.

Q9. Calculate the no. of atom in:

 a. 14 gm of N^2 gas
 b. 0.8 mole of H^2 gas

PART – C (BIOLOGY)

Note: All questions are compulsory.

Q1. Who discovered cell? [1]

Q2. Name the cell organelle which perform the function of photosynthesis. [1]

Q3. Write the composition of fluid connective tissue. [1]

Q4. What is difference between communicable and non-communicable disease? Give example. [2]

Q5. Write difference between Monera and Protiste. [2]

OR

Write difference between Chordate and Non-chordate.

Q6. Write down the characteristics feature of Bryophyte and draw diagram of one Bryophytes. [2]

Q7. What is difference between Gymnosperm and Angiosperm? Write at least 3 typical points. [3]

Q8. Write down the function of following cell organelle: [3]

a. Ribosome
b. Nucleus
c. Mitochondria
d. Vacuole
e. Endoplasmic Reticulum
f. Chloroplast.

OR

Write difference between Annelida and Arthropoda.

Q9. Describe various types of Epithelial tissues with well labelled diagram [5]

OR

Describe differences between amphibian and Reptilia.