Class-IX

Sub: G.Science (Set - B)

Time: $1\frac{1}{2}$ hrs

Marks: 50

General Instructions:

i)   All questions are compulsory.

ii) Draw diagrams wherever required.

Physics (17)

Q1. Which physical quantity is calculated by the slope of velocity-time graph? (1)

Q2. When is the magnitude of average velocity of an object equal to its average speed. (1)

Q3. Velocity-time graph of a body is a straight line parallel to the time axis as shown in given figure. Calculate the acceleration and the displacement of the body in 8s of its journey.
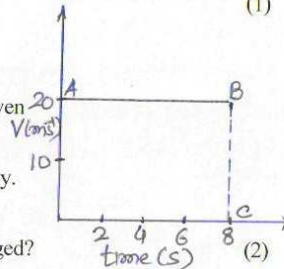
Q4. How can the velocity of the body be changed? (2)

Q5. A ball is gently dropped from a height of 20m. If its velocity increases uniformly at the rate of 10m/s², with what velocity will it strike the ground? After what time will it strike the ground?

Q6. Derive the equation for position-velosity relation $\left(v^2 - u^2 = 2aS\right)$ graphically. (3)

Q7a) Define average speed. Write the formula.

b) A car travels from stop A to stop B with a speed of 30km/h and then returns back to A with a speed of 50km/h.

Find : (i) Displacement of the car (ii) Distance travelled by the car

(iii) Average speed of the car (2+3)

Class-IX

Sub: Science   (Set - A)

Time: $1\frac{1}{2}$ hrs.

Marks: 50

General Instructions:

i)   All questions are compulsory.

ii) Draw diagrams wherever required.

Physics (17)

Q1. If distance time graph of a body is a straight line parallel to time axis, What is the nature of its motion? (1)

Q2. Write true or false:

The magnitude of displacement is always greater than the distance travelled by the body. (1)

Q3. An athelete completes one round of a circular track of diameter 200m, in 40 sec. What will be the distance covered and the displacement at the end of 2 minutes 20 seconds? (2)

Q4. Why is uniform circular motion called accelerated motion? (2)

Q5. Velocity time graph of a body of shown:
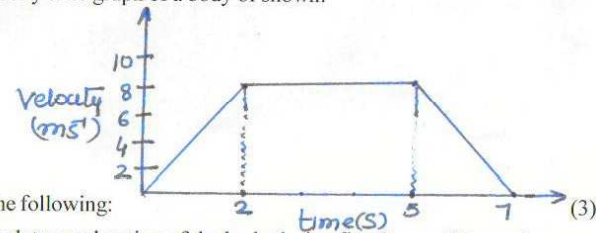
Answer the following:

a) Calculate acceleration of the body during first 2 sec. of its motion.

b) Calculate the distance covered in 5 ssec. the journey.

Q6. Derive the equation for position - time relation $\left(S = ut + \frac{1}{2}at^2\right)$ graphically. (3)

Q7a) Define uniform acceleration. Give example.

b) A bus travels first 100km with a speed of 50km/hr and next 80km with a speed of 40km/hr. Calculate the average speed of the bus. (2+3)

Chemistry (16)

Q1. Convert the following temperature to celsius scale

a) 293K   (b) 470K   (1)

Q2. Explain, why, naphthalene balls kept in stored clothes in our homes disappear over a period of time. (2)

Q3. Give two reason to justify that an iron almirah is a solid. (2)

Q4. a) Explain why, there is no rise in temperature of a substance when it undergoes a change of state though heat is supplied continuously

b) Define Brownian motion (3)

Q5. a) Explain how the smell of food being cooked in the kitchen reaches us even from a considerable distance.

b) Which gas is called dry ice? Why? (3)

Q6. a) Give reason for the following:

i) A gas exerts pressure on the walls of the container

ii) The water kept in an earthen pot become cool during summer.

b) Define following terms:

i) Latent heat of vapourisation   ii) Boiling point of a substance (6)

Biology (17)

Q1. Which is the Chief constituent of primary cell wall? (1)

Q2. Which kind of plastid is more common in leaves of plant? (1)

Q3. What is Osmosis? Write the importance of Osmosis in plants? (2)

Q4. How is flexible nature of plasma-membrane useful for Amoeba. Name this process. (2)

Q5. Write the differences between Prokaryotic & Eukaryotic cell. (3)

Q6. Which organelle is known as suicidal bag? Why? (3)

Q7a) Write the structure of nucleus.

b) Give two functions of Chromosome. (5)

Chemistry (16)

Q1. Convert the following temperature to the Kelvin scale

a) 25^0C (b) 373^0C (1)

Q2. Why steam at 100^0C is better for heating purposes than water at 100^0C (2)

Q3. Give two reasons to justify that water is a liquid at room temperature. (2)

Q4. a) How is ammonia gas liquefied?

b) Define diffusion (3)

Q5. a) Why is solid carbondioxide known as dryice?

b) Explain, why, we can easily move our hand in air but to do the same through a plank of wood, we need a Karate expert (3)

Q6. a) Give reason for the following:

i) Why does a desert cooler cool better on a hot dry day

ii) When an incense slick is lighted in the corner of a room, its fragrance spreads quickly in the entire room.

b) Define following terms:

i) Freezing

ii) Latent heat of fussion (6)

Biology (17)

Q1. Which organelle is associated with protein synthesis? (1)

Q2. Which kind of plastid is more common in flower & fruit? (1)

Q3. Define Diffusion. Give its improtance. (2)

Q4. How do substances like Co_2 & water move in and out of the cell? (2)

Q5. Differentiate between Plama membrance & cell wall. (3)

Q6. Which organelle is known as power house of the cell? Why? (3)

Q7a) List various components of nucleus

b) What are Chromosome? Give their Chemical Compsotion?

c) Where are genes located? (5)