Kanishka

Class – IX
Periodic Test-I
(2022-2023)
Science

Date : 15.07.2022 **Roll No : ....**

Time : 1hr 30 mins **M.M. : 40**

General Instructions:

a) **This question paper comprises of three sections-Physics, Chemistry and Biology.**

b) **All questions are compulsory. There is no overall choice however internal choices have been given in each section.**

c) **VSA type questions carry one mark each and are to be answered in one word or in one sentence.**

d) **Short Answer type questions carry two marks each and are to be answered in about 50 – 60 words.**

e) **Short Answer type questions carry three marks each and are to be answered in about 60-80 words.**

f) **Long Answer type questions carry five marks each and are to be answered in about 80 –90 words.**

Physics

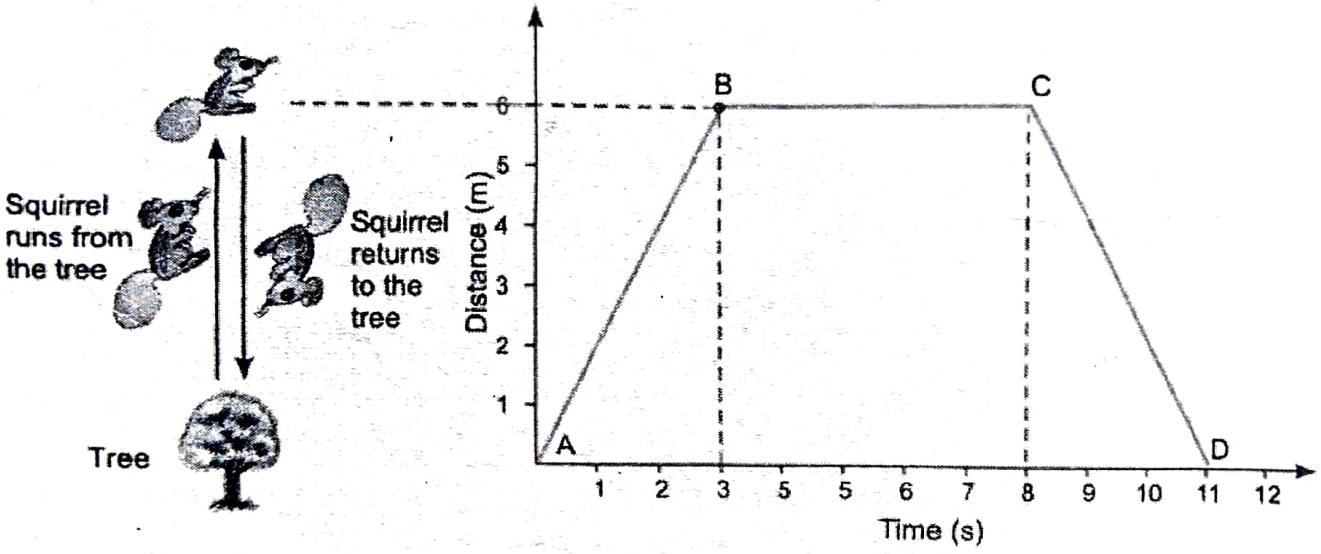
1. Which speed is greater: 30 m/s or 30 km/h? **(1)**
2. How will the equations of motion for an object moving with a uniform velocity change? **(2)**
3. A particle is moving in a circular path of radius r. What would be the displacement after half a circle?

OR

An aircraft travelling at 600 km/h accelerates steadily at 10km/h per second. Taking the speed of sound as 1100 km/h at the aircraft's altitude, how long will it take to reach the 'sound barrier'? **(2)**

4. Derive the second equation of motion by graphical method. **(3)**

5. Suppose a squirrel is moving at a steady speed from the base of a tree towards some nuts. It then stays in the same position for a while, eating the nuts, before returning to the tree at the same speed. A graph can be plotted with distance on the x-axis and the time on y-axis.



Observe the graph carefully and answer the following questions.

i) Which part of the graph shows the squirrel moving away from the tree?

ii) Name the point on the graph which is 6 m away from the base of the tree.

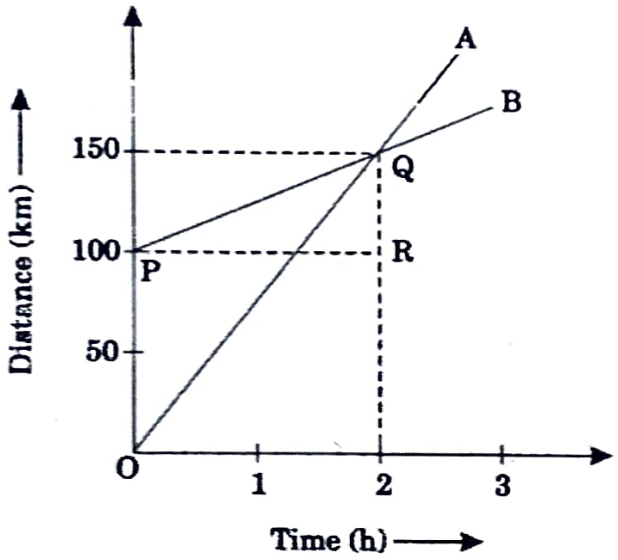
iii) Which part of the graph shows that the squirrel is not moving?

iv) Which part of the graph shows that the squirrel is returning to the tree?

v) Calculate the speed of the squirrel from the graph during its journey. **(5)**

OR

The distance-time graph of two trains is given below. The trains start simultaneously in the same direction.



i) How much ahead of A is B when the motion starts?

ii) What is the speed of B ?

iii) When and where will A catch B?

iv) What is the difference between speeds of A and B?

v) Is the speed of both the trains uniform or non-uniform? Justify your answer.

Speed : $\frac{d}{t}$

6. What is membrane biogenesis? **(1)**
7. In what form do mitochondria release energy? Write its full form.

OR

The inner membrane of mitochondria is deeply folded. What is the advantage of these folds? **(1)**

8. a) What would happen to the life of the cell if there was no Golgi apparatus?
   b) Which cell organelle detoxifies poisons and drugs in the liver of vertebrates? **(2)**
9. What are chromoplasts and leucoplasts? Give an example of chromoplast which has green pigment. **(2)**
10. Describe an activity to demonstrate endosmosis and exosmosis. Draw a diagram also. **(3)**
11. a) Why are lysosomes known as 'scavengers of the cell'?
    b) Lysosomes are self-destructive. (True/False). Give reason. **(5)**

OR

What are the consequences of the following conditions?

a) A cell containing higher water concentration than the surrounding medium.
b) A cell having low water concentration than the surrounding medium.
c) A cell having equal water concentration to its surrounding medium.

Chemistry

12. In a beam of sunlight entering a room, we can sometimes see dust particles moving in a haphazard way in the air. Why do these dust particles move ? **(1)**

OR

When an incense stick (*agarbatti*) is lighted in one corner of a room, its fragrance quickly spreads in the entire room. Name the process involved in this.

13. How is ammonia gas liquefied? **(1)**

14. When a crystal of copper sulphate is placed at the bottom of a beaker containing water, the water slowly turns blue. Why?

OR

An inflated balloon full of air goes down slowly (becomes smaller and smaller slowly) even though the knot at the mouth of the balloon is airtight. And after a week all the air has escaped from the balloon. Explain how the air particles got out of the balloon. **(2)**

15. Honey is more viscous than water. Can you suggest why? **(2)**

16. Iron powder and sulphur powder were mixed together and divided into two parts A and B. When part A was heated strongly over a burner, then a substance C was formed. The part B was, however, not heated at all. When dilute hydrochloric acid was added to substance C, then gas D was evolved and when dilute Hydrochloric acid was added to part B then gas E was evolved.

a) What type of substance is B ?

b) What type of substance is C ?

c) Name the gas (i) D, and (ii) E ?

OR

How much water should be added to 15 grams of salt to obtain 15 per cent salt solution ? **(3)**

17. Case Study:

There are four substances W, X, Y and Z. The substance W is a dark violet solid having diatomic molecules. A solution of W in alcohol is used as a common antiseptic C. The substance X is a white solid which is usually recovered from sea water on a large scale. The substance Y is a white solid which is insoluble in water and used in the form of small balls for the safe storage of woolen clothes. The substance Z is a yet another white solid which is used in making commonly used dry cells.

a) Name (i) W (ii) X (iii) Y and (iv) Z.

b) Out of W, X, Y and Z, which substance/substances can undergo sublimation ?

c) Which substance is organic in nature ?

d) What is the name of substance C ? **(4)**

4
15
×8
360

1
15
×6
71

4
15
×8
120