

HOLIDAYS HOMEWORK

CLASS -9

PHYSICS

Solve the Numerical :

Q.1 Derive the equation for velocity-time relationship ($v = u + at$) by graphical method

Q.2. A sprinter in a 100m race covers 4m in the first second, 30m in the next 4s, 52m

In another 4s and finishes the race in 10s. Calculate

- a) Average velocity**
- b) In which time interval, is the average velocity attained by the sprinter maximum?**
- c) Plot the distance- time graph for the motion of sprinter.**

Q.3. A train starting from rest, picks up a speed of 20m/s in 200s. It continues to move at

Same speed for next 500s. It is then brought to rest in the next 100s.

- a) Plot a speed time graph.**
- b) Calculate the rate of uniform acceleration**
- c) Calculate the rate of uniform retardation**
- d) Calculate the distance covered by the train during retardation.**
- e) Calculate the average speed during retardation.**

Q.4. An object P is moving with a constant velocity for 5 minutes. Another object Q is moving with changing velocity for 5 mins. Out of the two objects, which one has acceleration?

Q.5. Draw the graph for the following cases

a) A ball thrown vertically upwards and returning back to the hands of the returner.

b) A body decelerating to a constant speed and accelerating.

Q.6. What does the slope of a displacement-time graph represents? Can displacement-time sketch be parallel to the displacement axis? Give reason for your answer.

Q.7. What can we conclude about motion of a body depicted by the following velocity-time graphs?

BIOLOGY:

Visit to any *dairy farm* to understand the practice of dairy farming. Involvement of animals of different breeds. Understanding technique of collection, storage, transport of dairy products. Prepare a project report on all these activities. You can paste colorful pictures, diagrams. It should be at least 10 page reports.

CHEMISTRY:

ANSWER THE FOLLOWING QUESTIONS:

1. State characteristic property of (a) Solids (b) Liquids (c) Gases
2. Why is a solid not compressible? Why?
3. Give an example of compressed gas used at home.
4. Why is a solid not compressible?
5. Give reason for saying wood is a solid.
6. Why do gases exert pressure?
7. Gases are highly compressible whereas solids and liquids cannot be compressed. Why?
8. What is the general name of:
(a) Rigid form of matter and (b) Fluid form of matter.
9. Name two gases which are supplied in compressed form in homes and hospitals.
10. Liquids have fixed volume but no fixed shape. Why?



11. An inflated balloon collapses when pricked. Name the property of gases exhibited by this.

12. With the help of an experiment, how will you separate naphthalene and sodium chloride?

13. Describe the scales of measuring temperature and pressure.

14. Define diffusion. Explain the effect of change of temperature on diffusion.

15. Solids are generally rigid. What do you say about a rubber band which changes its shape when stretched? Is it solid?

16. Write the name of the process of the following state change.

(a) Solid to liquid

(b) Liquid to solid

(c) Liquid to gas

(d) Gas to liquid

(e) Solid to gas

(f) Gas to solid

17. Which property of matter is helpful in survival of aquatic plants and animals?

18. What do you mean by?

(a) Latent heat of fusion

(b) Latent heat of vaporization

19. Differentiate between a gas and vapors.

20. Why does food cook faster in a pressure cooker?

21. Iron ball is solid and water is a liquid. How do two differ with respect to their shape, size, compressibility and diffusion?

22. Name the two main factors responsible for the difference in the three states of matter.