STEM SCHOOL
VIDYA NAGAR - GUNTUR
Affiliated to ICSE, New Delhi | Affiliation No : AP116

QUARTERLY EXAMINATION – 2024-2025
SUBJECT: PHYSICS
GRADE: VIII

DATE:24-09-2024 **TIME: $2\frac{1}{2}$ HOURS**

NAME OF THE STUDENT & SEC: _____ **Max. MARKS: 80**

- *This question paper contains two sections which is 80Marks.*
- *SECTION A contains 40Marks (Attempt all the questions from this section)*
  (I) Choose the correct answers to the questions from the given options: [15M]
  (II) Answer for all the following questions: [25M]
- *SECTION B contains 40 Marks (Attempt any four questions from this section)*

SECTION A- 40 Marks
(Attempt all the questions from this section)

Question 1:

Choose the correct answers to the questions from the given options: **[15M]**

(i) Which of the following is the best description of matter?
a) Anything that has mass and occupies space
b) Anything that can be seen and touched
c) Anything that produces light
d) Anything that has mass but does not occupy space

(ii) Which state of matter has a definite shape and a definite volume?
a) Solid b) Liquid c) Gas d) Plasma

(iii) What happens to the molecules of a substance when it is heated?
a) They move slower b) They move faster
c) They stop moving d) They remain at the same speed

(iv) Which of the following processes involves a change from liquid to gas?
a) Condensation b) Evaporation c) Freezing d) Sublimation

(v) In which state of matter are the molecules least tightly packed?
a) Solid b) Liquid c) Gas d) Plasma

(vi) Which of the following is a fundamental physical quantity?
a) Speed b) Force c) Length d) Density

(vii) What is the SI unit of mass?
a) kilogram b) gram c) milligram d) newton

(viii) Which instrument is used to measure the length of a small object with high precision?
a) Ruler b) Vernier callipers c) Protractor d) Measuring tape

(ix) Density is defined as:
a) Mass per unit length b) Mass per unit area
c) Mass per unit volume d) Volume per unit mass

(x) Which of the following quantities is dimensionless?
a) Speed b) Acceleration
c) Relative density d) Force

(xi) Which of the following is a unit of force?
a) joule b) newton c) pascal d) watt

(xii) Pressure is defined as:

a) Force per unit area b) Force per unit volume

c) Energy per unit area d) Energy per unit volume

(xiii) Which of the following statements is true about pressure in fluids?

a) Pressure increases with depth b) Pressure decreases with depth

c) Pressure is the same at all depths d) Pressure does not depend on depth

(xiv) The force acting on an object is equal to:

a) Mass times acceleration b) Mass times velocity

c) Mass times displacement d) Mass times speed

(xv) The SI unit of pressure is:

a) pascal b) newton c) meter d) joule

Question 2:

Answer the following questions:

(i) Complete the following: **[6M]**

a) 100 cm is equal to one _____ [newton (N), pascal(P), meter(m)].

b) According to Pascal's principle, when pressure is applied to a confined fluid, it is transmitted _____ throughout the fluid. [equally, unequally, perpendicularly].

c) The process by which a solid change directly into a gas is called _____ [Sublimation, Solidification, Melting].

d) The basic unit of time in the SI system is the _____ [meter (m), kilogram(kg), second(s)].

e) The unit of density is expressed as _____ per unit volume. [mass, volume, speed].

f) Size of a molecule is _____ [10^{-10}m,10^{-3}m,10^{-7}m].

(ii) State the following: **[2M]**

a) Melting point of ice.

b) Boiling point of water.

(iii) What is the pressure exerted by a force of 1 N on an area of 1 m^2? **[2M]**

Question 3:

(i) a) Which principle explains why ships float? **[2M]**

b) Write the density value of water in terms of CGS Units?

(ii) Draw a neat labelled diagram of Effect of thrust is more on a smaller area than on a bigger area? **[2M]**

(iii) Write an activity based on measurement of volume of solid using a measuring cylinder? **[2M]**

(iv) A liquid has a density of 0.8 g/cm^3. Calculate the mass of 250 cm^3 of this liquid. **[2M]**

(v) Give reasons for the following: A balloon collapses when air is removed from it. **[2M]**

(vi) State three properties of molecules of matter. **[2M]**

(vii) Draw molecular diagram of solids, liquids and gases? **[3M]**

SECTION B-40 Marks

(Attempt any four questions from this section)

Question 4:

(i) Describe the process of condensation and sublimation with examples. **[4M]**

(ii) State three factors which affect the rate of evaporation of a liquid. **[3M]**

(iii) Write any three differences between melting and boiling. **[3M]**

Question 5:

(i) Describe an experiment to demonstrate that a substance absorbs heat during melting without change in its temperature? **[4M]**

(ii) A certain quantity of water is heated from 20°C to 100°C. Its temperature is recorded after each 1 minute. The observations are: **[3M]**

Time (in minute)	Temperature (in °C)
0	20
1	30
2	40
3	50
4	60
5	70
6	80
7	90
8	100
9	100
10	100
11	100
12	100

What conclusion do you draw from the above table about the boiling point of water? Explain?

(iii) Write the flowchart showing the complete cycle of change of state? **[3M]**

Question 6:

(i) How does the density of a liquid (or gas) vary with temperature? **[3M]**

(ii) What is a density bottle? How is it used to find the density of a liquid? **[4M]**

(iii) Distinguish between density and relative density. **[3M]**

Question 7:

(i) Which of the following will sink or float on water? (Density of water = 1 g cm^{-3}) **[4M]**

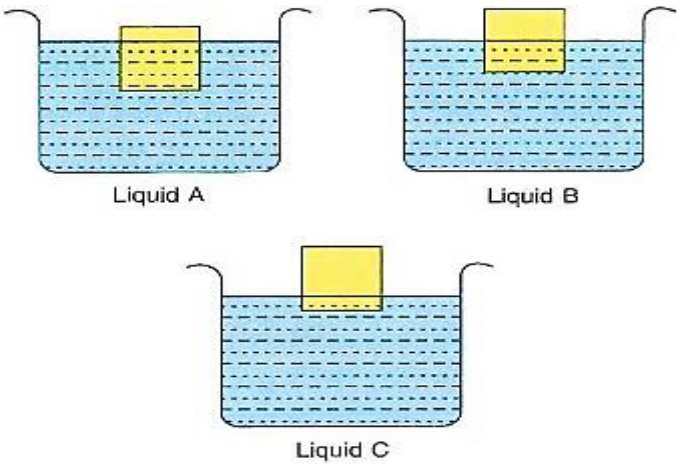
a. Body A having density 500 kg m^{-3}
b. Body B having density 2520 kg m^{-3}
c. Body C having density 1100 kg m^{-3}
d. Body D having density 0.85 g cm^{-3}

(ii) The diagram given below shows a body floating in three different liquids A, B and C at different levels. **[3M]**

(a) In which liquid does the body experience the greatest buoyant force?

(b) Which liquid has the least density?

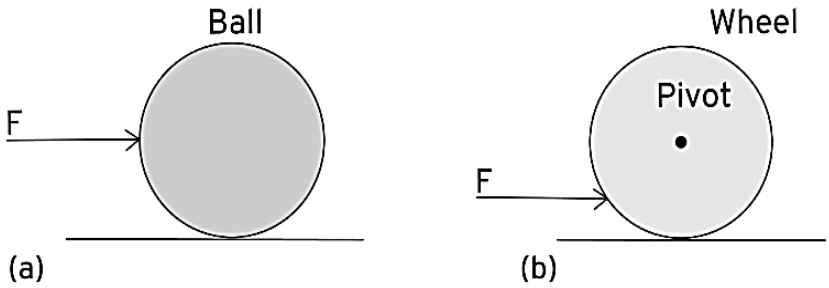
(c) Which liquid has the highest density?



(iii) A piece of iron when immersed in water taken in a Eureka can displaces 25 ml of water. Its mass is 195g. Find the density of iron in kgm^{-3} **[3M]**

Question 8:

i. State the effect of force F in each of the following diagrams (a) and (b). **[4M]**



ii. A dam has broader walls at the bottom than at the top. Give a reason. **[3M]**

iii. What is the magnitude of thrust required in newton to produce a pressure of 2650 pa on an area of 100 cm^2 **[3M]**

Question 9:

(i) Describe the crushing tin can experiment. What do you conclude from this experiment? **[4M]**

(ii) Why do camels or elephants have broad feet? **[3M]**

(iii) Ram can open a 2m wide door by a minimum force of 6N. Find the moment of force needed to open the door. **[3M]**

