Physics-1
CLASS X

Time1½ **Max. Marks-80**

Section I (40 Marks)
Compulsory (Attempt All Question From This Question)

Question-1

A.
a. How is the force related to the momentun of a body?
b. What are the two forms of mechanical energy?

B.
a. Define the term velocity ratio. State its unit.
b. A don has broader walls at the bottom then at the top. Explain.

C.
a. Why is a force needed to keep a block if cork inside water?
b. State the principle of floalation.

D.
a. Name two factors on which the refractive index of a medium depends?
b. The surface of an empty test tube kept in a beaker of water shines like a mirror. Give reason.

E.
a. An object appears green when viewed in white light .Explain this observation.
b. State two differences between light and sound waves.

F.
a. Name two characteristics of a musical sound.
b. A ship on the surface of back sends a signal and receives it back from a submarine inside the water after 45: Calculate the distance of the snbmarine form the ship. (Speed of sound in water is 1450ms-1).

G.
a. State the factors on which the internal resiotance of a cell depends.
b. Distinguish between ki low alt and kilowatt-hour.

H.
a. Define the term heat capacity and state its unit
b. An iron ball requires 5000j heat to raise its temperature by 10˚c. Calculate the heat capacity of the iron ball.

I.
a. Why do you far mersfull their fields with water on a cool winter night?
b. Explain how does the volume change when ice at 0˚C is heated to 10˚C.

J.
a. State two facture on electrons from heated surface depends.
b. Complete the following reaction:

$_{92}U + {}^{1}_{0}n \text{----------} \rightarrow {}^{148}Ba + {}_{36}Kr + {}^{1}{}_{0}n$

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Section II (40 Marks)
Answer Any Four Question From This Section

Question-2

A. Draw a diagram of block and tackle system of pulleys having a velocity ratio of 5. In your diagram indicate clearly the points of application and the direction of the tension in each strand.
(6)

B. If the power of a motor is 40kw, At what speed can it raise a load of 20,000n?
(2)

C. A man weight 600n on the earth. What would be his approximate height on the moon?
Why?
(2)

Question-3

A. Why does an iron nail float in mercury and sink water?
(3)

B. Define up thrist and describe an experiment to show its existence.
(4)

C. Deduce an expression for the pressure at a depth inside a liquid.
(3)

Question-4

A. Prove that

$$\text{Refractive index} = \frac{\text{Re}\,aldepth}{Apparentdepth}$$

B. Distinguish between a real and a virtnal image.
(3)

C. A convex lens had local length eqnalto 25cm. An object is placed at a distance 12.5cm from the lens. Draw a diagram to find the position of the image. (4)

Question-5

A. What are pigrnents? Which of those are the most permanent? What is spectrum? Draw a labeled ray diagram to show the formation of spectrum of white light.
(4)

B. How does the wave form of loud note differ from a soft note? Draw diagram.
(3)

Question-6

A. State ohm's Describe an experiment with a neat labelled circuit diagram to verify (3)
ohm's law.

B. What do you mean by the term earthing? Explain how is it done.
(3)

C. Describe a method to determine the specific heat capacity of a solid, like a piece of (4)
copper.

A. **Question-7** Name three constitnents of an atom and their masses and charges. (2)

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B. Draw a simplified labelled diagram of a hot cathode ray tube and briefly explain its
Working.
(4)

What is the nature of , B and V radiations? State four properties of each.
(4)