

Greenlawns School, Worli
Final Examination
Physics

STD: VIII
Date: 25/02/2016

Marks: 80
Time: 2hrs.

INSTRUCTIONS:-

- Answers to this paper must be written on the paper provided separately.
- You will not be allowed to write during the first 15 minutes.
- This time is to be spent in reading the question paper.
- The time given at the head of this paper is the time allowed for writing the answers.
- All working, including rough work, must be clearly shown and must be done on the same sheet as the rest of the answer. Omission of essential working will result in the loss of marks.
- The intended marks for the questions or parts of question are given alongside the questions.
- Geometrical figures to be constructed wherever applicable.
- For geometry, figures have to be copied to the answer script.

SECTION A (40 Marks)

Question 1

- a. Can you able to hear the sound produced due to the vibration of second pendulum? Give reason for your answer. [2]
- b. State any two properties of magnetic field lines. [2]
- c. What do you understand by poles of magnets? [2]
- d. Define the focal length of a mirror and state its SI unit. [2]
- e. Discuss the position and the nature of the image formed by a convex mirror when an object moved from infinity towards the pole of the mirror. [2]

Question 2

- a. explain why a wooden false ceiling provided in cold countries? [2]
- b. Name the sounds of the frequency given below: [2]
i) 10 Hz, ii) 200 Hz, iii) 2000 Hz, iv) 45 kHz
- c. State and define the SI unit of frequency [2]
- d. What is the meaning of term induced magnetism [2]
- e. The speed of a wave is 350 m/s. Find the wavelength of the wave whose frequency is 700 Hz. [2]

Question 3

- a. Explain why platinum wire fuses more easily in glass than copper wire. [2]

- b. Explain why Borosil /Pyrex glass used for heating directly on flame. [2]
- c. The average body temperature of a healthy person is 98.4°F. Calculate the corresponding temperature on the Celsius scale. [2]
- d. Why it is not possible to talk through open space on the surface of the moon? [2]
- e. Differentiate between heat and temperature. [2]

Question 4

- a. Draw a graph to show the variation in density of water with temperature in the range from 0° to 10° [2]
- b. Why double glass window panes used in cold countries? [2]
- c. Mud house with a thatched roof more comfortable for living than a concrete house? [2]
- d. Explain how the aquatic animal survives in pond even when the atmospheric temperature is well below 0° C [2]
- e. What do you understand by the poles of the magnet? and what is the length between two poles of magnet whose length is 12 cm [2]

Section II

(Attempt any four questions)

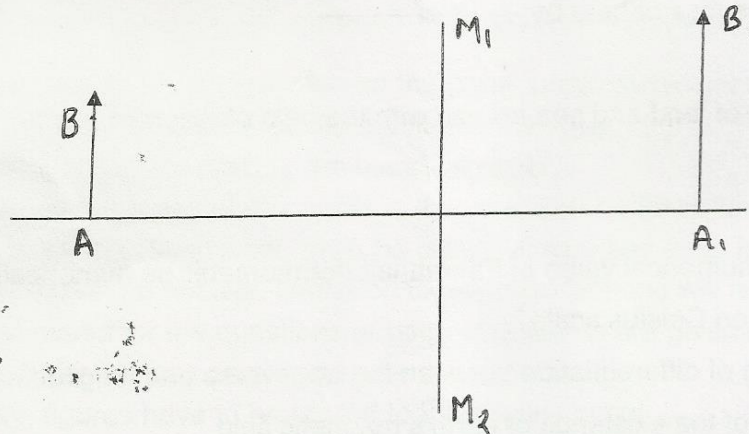
Question 5

- a. Which mirror will be preferred as rear view mirror in truck: plane mirror or convex mirror? Explain your answer with a proper ray diagram. [3]
- b. A mercury thermometer is transferred from pure melting ice to water kept in a bucket. The mercury level rises to two-fifth of the distance between the lower and the upper fixed points. Find the temperature of water in i)°C ii)°F and iii) Kelvin. [3]
- c. What is ultrasonic sound? State three important properties of it. [4]

Question 6

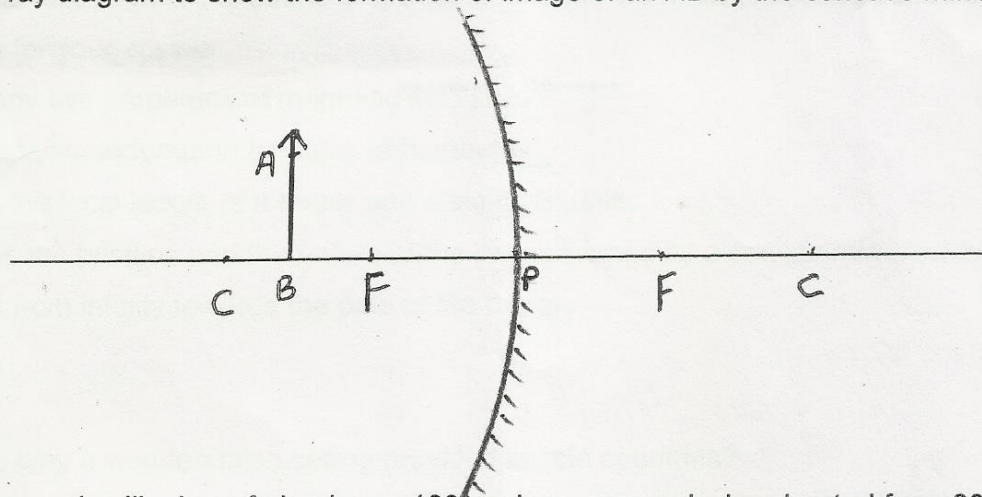
- a. How does the following factor affect the speed of sound in air?
i) Moisture in air, ii) pressure in air, and iii) temperature of air. [3]
- b. Differentiate between three modes of transmission of heat [3]

- c. In the given figure AB is the object and A_1B_1 is its image and M_1M_2 is the position of the mirror. Complete the ray diagram and locate the position of centre of curvature of the mirror. Also measure the focal length of the mirror [4]



Question 7

- a. What is the green house? How does the air inside remains warm? [3]
- b. Given figure shows the concave mirror with its pole at P, focus F and centre of curvature C. Draw ray diagram to show the formation of image of an AB by the concave mirror. [3]



- c. i. How much will a bar of aluminum, 100 cm long, expand when heated from 20°C to 100°C ?
Co-efficient of linear expansion of aluminum is $2.5 \times 10^{-5} \text{ }^\circ\text{C}^{-1}$ [3]
- ii. Co-efficient of cubical expansion of copper is $5.1 \times 10^{-5} \text{ }^\circ\text{C}^{-1}$. Calculate the Co-efficient of linear expansion. [1]

Question 8

- a. What do you understand by the term neutral point? How is the position of neutral point located with the help of compass needle? [3]

- b. In the thermos flask
- i. Cork reduces loss of heat by -----
 - ii. Vacuum reduces loss of heat by-----
 - iii. Glass walls reduces loss of heat by ----- [3]
- c. Explain the formation of land and sea breeze with the help of diagram. [4]

Question 9

- a. At what temperature numerical value of Fahrenheit thermometer be numerically equal and opposite to the value on Celsius scale? [3]
- b. State any three points of differentiation between the transverse and longitudinal waves. [3]
- c. i. State two evidence of the existence of earth's magnetic field [2]
ii. 'Induction precedes attraction'. Explain the statement. [2]
