

City International School

FIRST TERMINAL EXAMINATION – 2015 - 2016

Date : 01/10/2015

Std : VIII

Subject : Physics (Paper I)

Marks : 80

Time : 2hrs

Answer to this question must be written on the paper provided separately.

You will not be allowed to write during the first 15 minutes.

This time is spent in reading the question paper.

The time at the head of this paper is the time allowed for writing the answers.

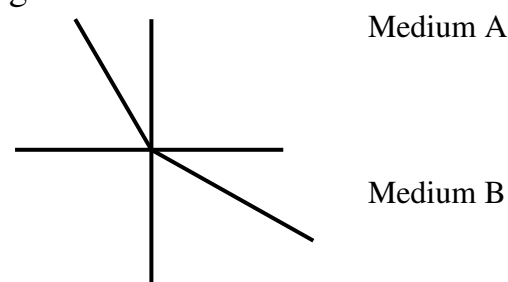
Attempt all questions from SECTION A and four questions from SECTION B.

The intended marks for questions or parts of questions are given in the bracket. ()

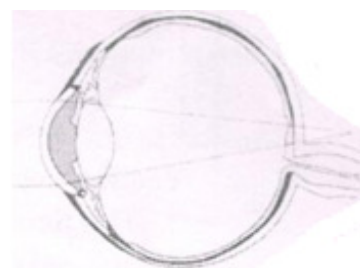
SECTION A [40 MARKS]

Attempt all questions.

- Q. 1**
- a.
 - i. What is a lens? (2)
 - ii. Name the point on the principle axis from which incident ray passes undeviated.
 - b.
 - i. What is refractive index? (2)
 - ii. Is the refractive index same for red and violet light?
 - c.
 - i. What is the relation between angle of incidence and angle of refraction if light ray strikes the surface normally? (2)
 - ii. Name the phenomenon responsible for formation of a rainbow.
 - d.
 - i. What is monochromatic light? (2)
 - ii. Is white light monochromatic? Explain.
 - e.
 - i. Which phenomenon is taking place in the diagram shown below? (2)
 - ii. State the factor responsible for this change.



- Q. 2**
- a.
 - i. State the importance of the yellow spot. (2)
 - ii. Name the fluid responsible to give the eye its particular shape.
 - b.
 - i. Name the eye defect shown in the diagram alongside. (2)
 - ii. Which lens is used to correct this eye defect?



- c. i. What happens to the intermolecular space, when heat is applied to a substance. (2)
- ii. Name the theory applied for the above observation.
- d. i. State Boyles Law. ii. Express its mathematical form. (2)
- e. i. Define Surface Tension. (2)
- ii. What is the effect of detergent on surface tension?

- Q. 3**
- a. i. What is a meniscus? (2)
 - ii. What is the shape of meniscus of mercury in a fine capillary?
 - i. What is absolute zero? ii. State its numerical value. (2)
 - c. Name the forces that are responsible for shape of the meniscus. (2)
 - d. A concave lens has a virtual focus. Explain. (2)
 - e. State the position of image and size of image, when object is placed at infinity in a concave lens. (2)

- Q. 4**
- a. i. Define Heat Capacity. ii. State its SI unit. (2)
 - b. i. Heat transfer by convection does not occur in solids. Explain. (2)
 - ii. Name the mode of transfer of heat observed in space.
 - c. Differentiate between heat capacity and specific heat capacity. (2)
 - d. Why burns caused by steam are more severe than boiling water? (2)
 - e. i. What is Anomalous Behavior of water? (2)
 - ii. Name a substance other than water that shows similar behavior.

SECTION B [40 MARKS]
Attempt any four questions.

- Q. 5**
- a. Draw a ray diagram to show the path taken by the red light when passing through the prism. Mark the following parts. (4)
 - i. Angle of incidence ii. Refracted ray
 - iii. Angle of deviation iv. Angle of emergence
 - b. What will be the observation if instead of red light, a white light is incident on the prism? Explain for the difference in observation. (3)

- c. How does the angle of deviation changes with (3)
i. Wavelength ii. Color iii. Refractive index

Q. 6 a. Draw a ray diagram to show the image formation when object is placed beyond 2F. State the characteristic and position of the image. (4)

b. Differentiate between convex and concave lens. (3)

c. Name the following parts. (3)

i. AB

ii. C1

iii. EF

Q. 7 a. i. State Pressure law. (3)
ii. What happens to the pressure if temperature becomes half.
iii. Which factor remains constant in (ii).

b. Name some common effects caused by cohesion and adhesion. (4)

c. i. Identify the two factors A and B. (3)

ii. Which force is responsible for the shape of the meniscus shown in the diagram.

Q. 8 a. Label the parts 1, 2, 3, 4. (4)

b. State the function of part labeled 1, 2, 4. (3)

c. Name the defect caused by loss of elasticity in part 2. (3)
At which age does it occur generally?
How is it corrected?

Q. 9 a. Some heat is given to 450g of Aluminum and its temperature rises by 20K. (4)
When the same heat is given to lead its temperature rises by 40K.
(Specific heat capacity of Al and Pb is 900J/Kg and 129J/Kg K respectively)

i. The amount of heat given to Aluminum. ii. Mass of lead.

- b. Differentiate between: (6)
- i. Heat and Temperature.
 - ii. Conduction and Convection
 - iii. Land Breeze and Sea Breeze.

Q. 10 a. How many grams of ice at -14°C is needed to cool 200g of water from 25° to 100° . (Specific heat capacity of ice = $2.1\text{J/g}^{\circ}\text{C}$, Specific heat capacity of water = $4.2\text{J/g}^{\circ}\text{C}$ and Latent heat of ice = $336\text{J/g}^{\circ}\text{C}$) (4)

- b. This is the heating and cooling curve of Naphthalene. (6)
- i. State the process occurring in part 1 and 2.
 - ii. What does the line BC and EF denote?
 - iii. What happens at AB and DE respectively?