



ST. JOSEPH'S COLLEGE, PRAYAGRAJ

SECOND UNIT TEST 2024

PHYSICS

CLASS – IX

TIME: 1 Hour

MM: 30

SECTION – A [18 Marks]

(Attempt all questions from this section)

Q 1) Choose the correct answers to the questions from the given options:

[6]

1) Which pair among the following denotes the same physical quantity:

- a) joule and calorie b) Kelvin and newton
c) centigrade and joule d) calorie and kelvin

2) The volume of water is minimum at:

- a) 0°C b) -4°C c) 4°C d) 1°C

3) Assertion (A) :The image of an object placed close to a concave mirror is a real image.

Reason (R): A real image is formed due to the actual intersection of the reflected rays.

- a) Both A and R are true. b) Both A and R are false.
c) A is false but R is true. d) A is true but R is false.

4) In case of erect object having erect image, the linear magnification is:

- a) Positive b) Negative c) Zero d) No definite sign

5) A beam of light is deviated through 10° by the use of a plane mirror. The angle between the incident ray and normal is :

- a) 20° b) 80° c) 10° d) 5°

6) The absolute zero on Celsius scale is:

- a) 100°C b) -273°C c) -32°C d) 0°C

Q 2) 1) Give two differences between heat and temperature.

[2]

2) Draw a graph to show the variation in density of water when the temperature rises from 0°C to 10°C .

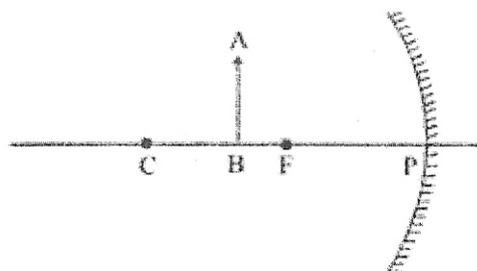
[2]

3) State the two laws of reflection of light.

[2]

4) The figure given below shows a 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 object AB.

[2]



5) A light ray is incident normally on a plane mirror.

- a) What is its angle of incidence?
b) What is the direction of reflected ray? Show it on a diagram.

EXPERTS' [2]

6) How many images are formed for a point object kept in between the two plane mirrors at right angles to each other? Show them by drawing a ray diagram.

[2]



SECTION – B [12 Marks]

(Attempt all questions from this section)

Q3)

[3]

1) Explain: A glass bottle completely filled with water and tightly closed at room temperature, is likely to burst when kept in the freezer of a refrigerator.

2) Name a substance other than water which contracts on heating.

Q 4) An object is placed at a distance of 48 cm in front of a concave mirror of focal length 24 cm.

[3]

1) Find the position of image.

2) What will be the nature of image?

Q 5)

[3]

1) What is a real image?

2) a) For what position of object, the image formed by a concave mirror is magnified and erect?

b) State whether the image formed is real or virtual.

Q 6) Draw a ray diagram to show the formation of image of an object kept in front of a convex mirror. State three characteristics of the image.

[3]