Quarterly Examination 2018-2019

Phy.

Class : VIII

Time : 2 hrs. **Full Marks : 80**

Section 'A' [40 Marks]

(Attempt all questions)

Q.1 (a) Name the physical quantity for the following units-[2]

(i) light year (ii) solar mass

(iii) lunar month (iv) a.m.u.

(b) Name two units of length which are bigger than a metre. How are they related to the metre ? [2]

(c) Write any two differences between distance and displacement. [2]

(d) Express each of the following in ms^{-1} — [2]

(i) 1km/min (ii) 54 km/hr.

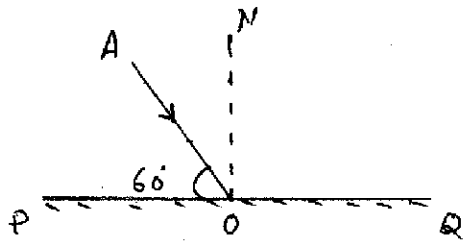
(e) A light ray is incident normally on a plane mirror. [2]

(i) What is its angle of incidence ?

(ii) What is the direction of reflected ray ? Show it on a diagram.

Q.2 (a) Differentiate betweeen Real image and virtual image. [2]

(b)



{Turn Over}

Answer the following questions with the help of given diagram —

(i) Find angle <i & <r.

(ii) Name PQ and define it.

(c) Name the device where plane mirrors are arranged in the following way.

(i) three plane mirrors inclined at 60° to each other.

(ii) two parallel plane mirros each inclined at 45°.

(d) An insect is sitting in frort of a plane mirror at a distance 1 m from it. Find.

(i) the distance between the image and the mirror.

(ii) the distance between the image and the insect.

(e) A body starts with an initial velocity of 54 km/hr. and acceleration of $5 m/s^2$. Find the final velocity of the body after 2 sec. [2]

Q.3. (a) Name the type of mirror which gives — [2]

(i) Real and magnified image.

(ii) Virtual and magnified image.

(iii) Real and same size of the image as that of object.

(iv) Virtual and diminished image.

(b) State the direction of incident ray which after reflection from a spherical mirror retraces its path. Give reason to your answer. [2]

(c) Name the type of mirror used as rear view mirror, and give reason for using the mirror named by you. [2]

(iv) image when object is kept between focus and pole.

Q.10 (a) What do you mean by the term unit ? [1]

(b) The value of g remains same at all places on the earth surface.' Is this statement true ? Give reason for your answer. [2]

(c) A car travels first 30 km with a uniform speed of 60 km/h and then next 30 km with a uniform speed of 40 km/h. Calculate (i) the total time of journey, (ii) the average speed of car. [3]

(d) (i) Write any two differences between speed and velocity other than its definition. [2]

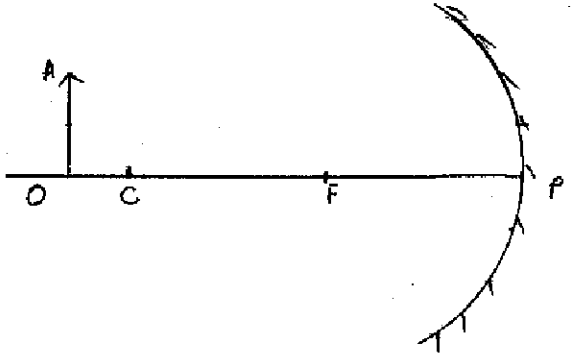
(ii) A car acquires a velocity of 72 km/h in 10s starting from rest. Calculate — [2]

the acceleration and the distance travelled in this time. [2]

(II) When a concave mirror in used as a shaving mirror, where is the person's face in relation to the focus of mirror ? [1]

(i) dentist (ii) as search-light-reflector

(d) Copy the diagram and complete it to show the formation of image of on object OA. State three characteristics of the image.



Q.9 (a) What do you mean by radius of curvature ? [1]

(b) Draw a diagram to show focus of concave mirror. [2]

(c) What do you mean by irregular reflection of light ? Does it obey the law of reflection ? Draw a diagram to show irregular reflection.

(d) (I) What is the position of following (in case of concave mirror)

(i) object when image is formed at centre of curvature. [4]

(ii) image when object is kept at focus.

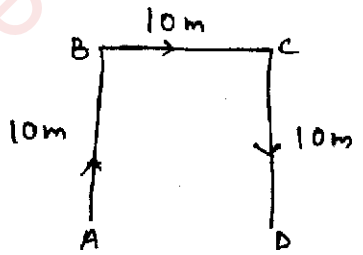
(iii) object when image is formed between centre of curvature and focus.

(d) The wavelength of light of a particular colour is 580 nm. Express it in — [2]

(i) Angstrom (ii) metre

(e) Explain the meaning of derived unit with the help of one example. [2]

Q.4. (a) Find the distance and displacement with the help of given diagram — [2]



(i) A to D (ii) A to C.

(b) An object is placed (i) asymmetrically (ii) symmetrically between two plane mirrors inclined at an angle of 72^{o}. Find the number of images formed. [2]

(c) Name the type of mirror which gives real image. Write the position of the object when it gives virtual image. [2]

(d) Name the type of image for the following cases —

(i) Image formed is upright with respect to the object — [2]

(ii) Image is formed by the reflected rays when produced backward.

(iii) Image formed can be obtained on the screen.

{Turn Over}

(iv) Image is always formed behind the mirror.

(e) Define acceleration and write its unit in C.G.S. [2]

Section 'B' [40 Marks]
(Attempt any four questions)

Q.5 (a) How do we express the magnitude of a physical quantity ? [1]

(b) Write any two properties for the choice of unit to measure a physical quantity. [2]

(c) Name the three systems of unit and state the various fundamental units in them. [3]

[2+2=4]

(d) (i) How is — (i) nano metre related to Angstrom.

(ii) 1 a.m.u. related to its SI unit.

II. Arrange the following units in its ascending order —

(i) nm, fermi, angstrom, micron

(ii) light year, Astronomical unit, parsec, light second.

Q.6 (a) What do you mean by one dimensinal motion ?[1]

(b) What do you mean by uniform velocity ? [2]

(c) A car is moving in a straight line with speed 18km/hr. It is stopped in 5s by applying the brake. Find (i) the speed of car in m/s (ii) the retardation and (iii) the speed of car after 2s of applying the brake. [3]

(d) I) Differentiate between the scalar and vector quantities, giving two examples of each.

II) A car starting from rest acquires a velocity 180m/s. in 0.05h. Find the acceleration. [2+2+4]

Q.6 (a) What do you mean by the term reflection of light ?[1]

(b) What are the characteristics of the image formed by plane mirror ? [2]

(c) An optician while testing the eyes of a patient - keeps a chart of letters 3m behind the patient and asks him to see the letters or the image of chart formed in a plane mirror kept at a distance of 2 m in front of him. (i) At what distance is the chart seen by the patient (ii) what is the distance between chart and image of chart. (iii) what kind of image is formed for patient real or virtual.

(d) Two plane mirror are arranged parallel and facing each other at some separation. How many images are formed for a point object kept in between them? Show the formation of images with the help of a ray diagram. [4]

Q.8 (a) Define the term aperture. [1]

(b) Differentiate concave mirror and convex mirror in terms of — [2]

(i) The light rays incident on it.

(ii) The image formed by it.

(c) (I) Name the type of mirror used by a [2]

(i) dentist (ii) as search-light-reflector

{Turn Over}