Engineering physics (2021)

1. Choose the correct answer :

(i) Unit of acceleration is

(a) m/s (b) m/s^2

(c) m/s^3 (d) None of these

Ans.(b)

(ii) Which is a vector quantity?

(a) Force (b) Work

(c) Speed (d) Distance

Ans.(a)

(iii) What type of wave carry sound in air?

(a) Transverse wave (b) Longitudinal waves

(c) Both of these (d) None of these

Ans.(b)

(iv) How many significant digits are in 0.04058?

(a) 4 (b) 5 (c) 6 (d) 3

Ans.(a)

(v) Viscosity is a property of

(a) liquid only (b) solid only

(c) solid and liquid only (d) liquid and gases only

Ans.Out of Syllabus

(vi) The energy possessed by a body by the virtue of its motion is called

(a) Kinetic energy (b) Potential energy

(c) Total energy (d) Motion energy

Ans.(a)

(vii) The unit of current is

(a) Ampere (b) Weber

(c) Tesla (d) Coulomb

Ans.(a)

(viii) The spherical shape of rain drop is due to

(a) Density of water (b) Atmospheric pressure

(c) Gravity (d) Surface tension

Ans.Out of Syllabus

Q2.(a) State and explain Newtons law of gravitation.

Ans.Refers to Chapter 2

Q2.(b) Define surface tension and write its S.I. unit. Write the relation between surface tension, capillary rise and radius of capillary.

Ans.Out of Syllabus

Q3.(a)Define molecular range.

Ans.Out of Syllabus

Q3.(b)Define angular displacement, angular velocity tween linear velocity and angular velocity.

Ans.Refers to Chapter 2

Q4.(a)State and explain Newtons laws of motion.

Ans.Refers to Chapter 2

Q4.(b)Derive the equations of potential energy and kinetic energy.

Ans.Out of Syllabus

Q5.(a) State Hooks law. Define Youngs modulus, Bulk modulus of Rigidity.

Ans.Refers to Chapter 3

Q5.(b)Define viscosity.

Ans.Out of Syllabus

Q6.(a)Define the linear, aerial and cubical expansion and give the relation between them.

Ans.Refers to Chapter 3

Q6.(b)Define inertia.

Ans.Refers to Chapter 2

Q7.(a)Define Echo and Reverberation.

Ans.Out of Syllabus

Q7.(b)Define Node and Antinode.

Ans.Node : A pont along a standing wave where the wave has minimum amplitude.

- Nodes are the points that have no displacement from the equilibrium position. Amplitude is minimum at nodes

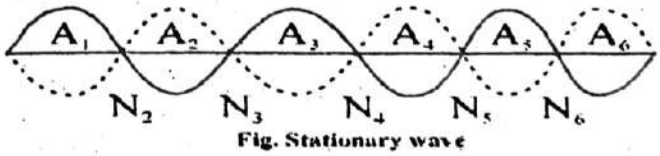

Fig. Stationary wave

Antinode : A point along a standing wave where the wave has maximum amplitude.

- Antinodes are points of maximum displacements (at crests and toughs) from the mean position. Amplitude is maximum at antinodes.

Q8.Find the viscous force acting on a rain drop of diameter 2 mm falling with a terminal velocity of 2 ms^{-1} in air. Given, viscosity of air $\eta = 1.8 \times 10^{-5}$ $Nm^{-1}s^{-1}$.

Ans. Out of Syllabus