

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2018

ENGINEERING PHYSICS - I

[Time : 3 hours

(Maximum marks : 100)

PART — A

(Maximum marks : 10)

Marks

I Answer *all* questions in one or two sentences. Each question carries 2 marks.

1. Write the SI units of electric current and temperature.
2. What are collinear vectors ?
3. Define triangle law of vector addition.
4. State Hooke's law for elastic materials.
5. Give two applications of ultrasonic waves.

(5×2 = 10)

PART — B

(Maximum marks : 30)

II Answer any *five* of the following questions. Each question carries 6 marks.

1. State and prove the law of conservation of linear momentum in the case of elastic collision in one dimension.
2. What are the rectangular components of a vector reacting at an angle θ with the X axis ? If one of the rectangular components of a force 40 N is 20 N, find the other component.
3. A mass 5 kg is initially at rest. A force 20 N is applied on it. What is the kinetic energy at the end of 10 s ?
4. Two iron wires of the same radius have lengths in the ratio 1:3. They are subjected to forces in the ratio 2:1. Find the ratio of their elongations.
5. State Bernoulli's principle. Explain the lift of an air craft using Bernoulli's principle.
6. Explain various modes of vibration in an open pipe.
7. Show that the projection of a uniform circular motion along a diameter is simple harmonic.

(5×6 = 30)