V.P & R .P.T.P. SCIENCE COLLEGE
F.Y.B.SC.SEM-I
FIRST INTERNAL TEST
PHYSICS USO1CPHY01

DATE-07/10/2017   Time-1.30 pm to 2.30pm

SATURDAY   TOTAL MARK-25

Q.1 The multiple choice questions.   3

1. Unit of modulus of elasticity is ………………

   (A) Dyne/cm   (B) Dyne/Cm^2 (C) N/M   (D) Dyne

2. The time period of a torsional pendulum is directly proportional to the square root of ……………

   (A) Distance   (B) Vibrations   (C) Moment of inertia   (D) Force

3. According to Laplace's corrections the velocity of sound in air is ………

   (A) 280 m/s   (B) 332 m/s   (C) 350 m/s   (D) 331.6 m/s

Q.2 Short questions. (Any two)   4

1. Define: Young's Modulus and Bulk Modulus.

2. Define: Beam and Cantilever.

3. Define: Longitudinal wave and transverse wave.

Q.3 Define poisson's ratio and obtain formula of it for rubber.   6

<div align="center">OR</div>

Derive the formula for the work done per unit volume in case of elongation strain

   6

Q.4 Derive the equation for torsional rigidity of the cylinder or a rod of uniform circular section.   6

<div align="center">OR</div>

What is cantilever ? Derive the equation for the depression produced in the free end of the cantilever, if the weight of the beam is ineffective.   6

Q.5 Derive the formula for the velocity of sound waves in a gaseous medium   6

<div align="center">OR</div>

Write a note on Newton's formula for the velocity of sound in air.   6