



A-2983

B. Sc. (Sem. III) Examination
March/April – 2015
Physics for Electronics : Paper - III
(Mechanics)

Time : Hours]

[Total Marks : 50

Instructions :

(1)

नीचे दृशावेव निशानीवाणी विगतो उत्तरवाडी पर अवश्य लपवी. Fillup strictly the details of signs on your answer book.	Seat No. :
Name of the Examination :	<input type="text"/>
<input type="text" value="B. Sc. (Sem. 3)"/>	<input type="text"/>
Name of the Subject :	<input type="text"/>
<input type="text" value="PHYSICS FOR ELECTRONICS : PAPER - 3"/>	<input type="text"/>
Subject Code No. : <input type="text" value="2"/> <input type="text" value="9"/> <input type="text" value="8"/> <input type="text" value="3"/>	<input type="text"/>
Section No. (1, 2,.....) : <input type="text" value="Nil"/>	<input type="text"/>
	Student's Signature

- (2) Question one is compulsory.
(3) Symbols used in the paper have their usual meaning.
(4) Draw neat diagram wherever necessary.
(5) Scientific calculator can be used.
- 1 Answer the following questions in short as directed. 8
- (i) Define radius of gyration.
(ii) Distinguish between simple and forced oscillations.
(iii) What is resonance?
(iv) Give the relation between frequency and wavelength of a wave travelling with velocity v .
(v) What is damped motion?
(vi) Define beat.
(vii) Write unit of impulse of force.
(viii) What do you mean by simple harmonic motion?
- 2 (a) Find moment of inertia of a disc mounted on axle rolling on inclined plain. 8

OR

- (a) Explain Newton's laws for rotation of a body 8
(b) A sphere of mass 50gm and of diameter 2cm rolls without slipping with a velocity of 5cm persec. 6
Calculate its total kinetic energy.

OR

- (b) A hoop of mass 2.5 kg and radius 25cm rolls along the ground at the rate of 10 m/s. Calculate its kinetic energy in ergs. **6**
- 3** (a) Derive the expression for energy exchange between two coupled identical oscillations. **8**
- OR**
- (a) Explain resonance and sharpness of resonance
- (b) Describe damped harmonic motion with proper example. **6**
- OR**
- (b) In the oscillatory circuit $L=0.2$ Henry, $C=0.0012 \mu f$. What is the maximum value of resistance for the circuit to be oscillatory?
- 4** (a) Explain laws of transverse vibrations of a string. **8**
- OR**
- (a) What do you mean by Kundt's tube explain the same.
- (b) Write down properties of transverse waves. **6**
- OR**
- (b) Write down properties of longitudinal waves.
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