PRESIDENCY UNIVERSITY, BENGALURU
SCHOOL OF ENGINEERING

Max Marks: 30 | Max Time: 55 Mins | Weightage: 15 % | **Set B**

TEST 2

II Semester 2016-2017 | Course: **PHY A 103 Engineering Physics** | 25 March 2017

Instructions:

i. Write legibly
ii. Scientific and non-programmable calculators are permitted

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Part A

(4 Q x 3M= 12 Marks)

1. Differentiate constructive and destructive interference.
2. Define total internal reflection.
3. A diffraction grating with a width of 3.0 cm contains 700 lines/cm across that width. For an incident wavelength of 500 nm, what is the smallest wavelength difference this grating can resolve in the second order?
4. Define simple harmonic motion and mechanical waves

Part B

(2 Q x 5 M= 10 Marks)

5. Show that, in SHM, the acceleration is directly proportional to displacement but opposite in direction.
6. What is the speed of a transverse wave in a rope of length 250 cm and mass 50.0 g under a tension of 600 N?

Part C

(1 Q x 8 M= 08 Marks)

7. Derive an expression for energy and power of a wave traveling along a stretched string.

PRESIDENCY UNIVERSITY, BENGALURU
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Max Marks: 30 | Max Time: 55 Mins | Weightage: 15 % | **Set A**

TEST 1

II Semester 2016-2017 | Course: **PHY A 103 Engineering Physics** | 27 February 2017

Instructions:

i. Write legibly
ii. Scientific and non-programmable calculators are permitted

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Part A

(4 Q x 2.5 M= 10 Marks)

1. Define population inversion.
2. Name different types of Van der Waals forces.
3. Define fermi level.
4. Define superconductivity of metals.

Part B

(2 Q x 5M= 10 Marks)

5. Differentiate polarized and unpolarized light. Mention any five points.
6. Write the failures of classical free electron theory and assumptions of quantum free electron theory.

Part C

(1 Q x 10 M= 10 Marks)

7. Explain the construction and working of He-Ne laser with energy level diagrams.