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Roll No. | | | | | | | | | | | | Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (Ind. Engg. & Mgt.) (Spl. in TQM) (Sem.–1)

# APPLIED PHYSICS

Subject Code : IEM-103

M.Code : 61003

Time : 3 Hrs. Max. Marks : 40

**INSTRUCTIONS TO CANDIDATES :**

1. Attempt All EIGHT questions from SECTION-A carrying TWO marks each.
2. Attempt any SIX questions out of EIGHT from SECTION-B carrying FOUR marks each.

## SECTION-A

**1. Answer briefly :**

a. Differentiate between base unit and derived unit.

b. A person sitting in a train moving with constant velocity along a straight line throws a ball vertical upward. Will the ball return to thrower's hand? Why?

c. What do you understand by nuclear energy?

d. Give two applications of Archimedes principle.

e. What do you understand by the term "Rate Processes"?

f. Give working principle of fuel cells.

g. Define Doppler effect in sound.

h. What do you understand by extrinsic semiconductor?

## SECTION-B

2. What do you understand by conservation of energy? Explain using illustrative case of chemical energy.



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3. The total mass of an elevator, with 70 Kg man in it, is 800 Kg. This elevator moving upward with a speed of 8 m/s is brought to rest over a distance of 16m. Calculate the force exerted on the man by the elevator floor.

4. What do you understand by decimal multiples of SI system of units? Explain using a suitable example.

5. Define stress and strain. Obtain relation between them and discuss its utility.

6. Explain the heat transfer process using convection mechanism. Give some applications of this process.

7. Suggest a method to estimate the magnetic force on a current carrying wire. Where do we use this concept?

8. What do you mean by ultrasonic waves? Discuss some industrial applications of ultrasonic waves.

9. Explain the construction and working of a half wave rectifier.

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**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**



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