DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE
Mid Semester Examination – October 2019

Course: B. Tech in Civil/Mechanical   Sem.: I

Subject Name: Engineering Physics   Subject Code: PHY1202

Max Marks: 20   Date: 04/10/2019   Duration:- 1 Hr.

Instructions to the Students:
1. Illustrate your answers with neat sketches, diagrams etc. wherever necessary.
2. Use of non-programmable calculator is allowed.
3. If some part or parameter is noticed to be missing, you may appropriately assume it.

		(Level/CO)	Marks

Q. 1   Attempt following Questions   **6**

1. If the damping is smaller then the resonance will be, __   CO-1
a) flatter   b) sharper   c) none of these   d) both a and b

2. Length of Nickel rod needed to produced ultrasonic wave of frequency 40   CO-1
KHz is, (Given: Density = 9.99 Kg/m^3, Y= 8 X 1010 N/m^2).
a) 1.2 cm   b) 1.58 m
c) 1.1 m   d) 1.4 cm

3. Depth of sea calculated by using formula,   CO-1
a) $D = \frac{V \, X \, t}{2}$ b) $D = \frac{V \, X \, C}{2}$

c) $D = \frac{V \, X \, t}{F}$ d) $D = \frac{V \, X \, F}{3}$

4. In doubly refracting crystal along optical axis   CO-1
a) $\mu_o > \mu_e$ b) $\mu_o = \mu_e$ c) $\mu_o < \mu_e$ d) $\mu_o = \mu_e{}^2$

5. The active material in He-Ne laser is,   CO-1
a) Ne   b) He   c) Cr   d) All of these

6. The diameter of the nth dark Newton's ring is given by formula,   CO-1
a) $Dn^2 = (2n+1)\lambda R$ b) $Dn^2 = (3n+1)\lambda R$ c) $Dn^2 = 2n\lambda R$ d) $Dn^2 = 4nR\lambda$

Q.2   Solve Any Two of the following.   **3 X 2**

(A)   State Piezoelectric, Inverse Piezoelectric and Magnetostriction effect.   CO-1

(B)   Explain spontaneous and stimulated emission of radiation.   CO-1

(C)   Describe the structure of optical fiber.   CO-1

Q. 3   Solve Any One of the following.   **8**

(A)   Explain Piezo electric effect for the production of ultrasonic wave.   CO-1

(B)   Explain Ruby laser with neat labeled diagram.   CO-1

*** End ***