

ENGINEERING PHYSICS

(Theory : 2 (A))

Full Marks : 80

Time : 3 hours

Answer any five questions including Q.Nos.1 & 2

Figures in the right-hand margin indicate marks

1. Answer *all* questions : 2 × 10
- (a) State the Principle of Homogeneity.
  - (b) Define Universal Gravitational Constant (G).
  - (c) State Triangle law of vector addition.
  - (d) State two properties of Ultrasonic.
  - (e) State the Laws of Refraction.
  - (f) Define Unit Charge.
  - (g) Define Joule's Mechanical Equivalent of Heat.
  - (h) State Ohm's Law.
  - (i) Mention the properties of LASER.
  - (j) State Lenz's Law.
2. Answer any *six* questions : 5 × 6
- (a) Check the correctness of the relation dimensionally :  $F = 2mv^2/r$ .
  - (b) Establish the relation between (i) Linear and Angular Velocity (ii) Linear and Angular Acceleration.
  - (c) Distinguish between Transverse wave and Longitudinal wave.
  - (d) State Kepler's Laws of Planetary Motion.
  - (e) State the Laws of Limiting Friction.
  - (f) Define Specific Heat. Find its unit and dimension.
  - (g) State Coulomb's Laws in Magnetism.
  - (h) Find the total capacity when three capacitors of capacity,  $2\mu\text{F}$ ,  $3\mu\text{F}$  and  $5\mu\text{F}$  are connected in series.
3. Derive expression for displacement, velocity and acceleration of a particle executing Simple Harmonic Motion. 10
4. State Kirchhoff's Laws and obtain Balanced condition of Wheatstone's Bridge. 4 + 6

( 2 )

5. Define the coefficients of Linear, Superficial and cubical Expansion of solids and Establish the relation  $\alpha : \beta : \gamma :: 1 : 2 : 3$ . 4 + 6
6. State Faraday's Laws of Electromagnetic Induction. Calculate the equivalent resistance of 5 resistors of  $5\Omega$  each connected in parallel. 6 + 4
7. Write short notes on any two : 5 × 2
- (i) Total Internal Reflection
- (ii) Properties of Magnetic Lines of Force
- (iii) Relation between wave parameters
- (iv) Fleming's Left Hand Rule.

---

<http://www.sctevtonline.com>

Whatsapp @ 9300930012

Your old paper & get 10/-

पुराने पेपर्स भेजे और 10 रुपये पायें,

Paytm or Google Pay से