

2nd Sem./ COMMON / 2022(S)
Th-2A Engineering Physics

Full Marks: 80

Time- 3 Hrs

Answer any five Questions including Q No.1& 2
 Figures in the right hand margin indicates marks

1. Answer **All** questions 2 x 10
 - a. Write the SI unit of i) Frequency ii) Temperature
 - b. State Triangle's law of vector addition
 - c. Define vector product of 02 vectors.
 - d. What is Static Friction ?
 - e. Define Universal Gravitational Constant (G)
 - f. Write any two application of Ultrasonic wave.
 - g. Define Latent heat.
 - h. What is refractive Index ?
 - i. Define Magnetic Flux Density.
 - j. Mention the value of relative permittivity of free space.

2. Answer **Any Six** Questions 6 x 5
 - a. Check the correctness of $T = 2\pi\sqrt{l/g}$ using Dimensional analysis.
 Where the symbols used have their usual meaning
 - b. State Kepler's Law of Planetary Motion..
 - c. State Laws of Limiting Friction.
 - d. Differentiate between Transverse wave and Longitudinal wave-motion.
 - e. Draw with labelled diagram Refraction pattern through material of Prism.
 - f. Compare Fleming's Left hand and Right hand rule.
 - g. State and explain Coulomb's law in magnetism.

3. Find the equations for i)Maximum height ii) Total time of Flight and iii) Horizontal range , when the projectile is fired at an angle with the horizontal. 10

4. Obtain the equations for (i) Displacement (ii) velocity (iii) Acceleration of a particle in Simple Harmonic Motion (SHM) 3+4+3

5. How much heat is required to convert 10 gm of ice at -5°C to steam at 100°C ? 10

6. State Kirchhoff's laws. Derive the condition of balance in a wheatstone Bridge.. 4+6

7. Write the Principle, Properties and Applications of LASER. 10