PVP 20

Code: 20BS1104

I B.Tech - I Semester – Regular / Supplementary Examinations – APRIL 2022

APPLIED PHYSICS
(CIVIL ENGINEERING)

Duration: 3 hours Max. Marks: 70

Note: 1. This paper contains questions from 5 units of Syllabus. Each unit carries 14 marks and have an internal choice of Questions.
2. All parts of Question must be answered in one place.

UNIT – I

1. a) Define a Vector and a Scalar and illustrate the different laws. 7 M
   b) Evaluate the potential energy stored in the body. 7 M

OR

2. a) Show that the acceleration is proportional to displacement in S.H.M. 7 M
   b) Explain intertial frames of reference and non-inertial frames of reference. 7 M

UNIT – II

3. a) Write the different factors that are affecting the Elasticity. 7 M
   b) Illustrate the Hooke's law and different types of moduli. 7 M

OR

4. a) Calculate the Strain energy of a wire when load is applied. 7 M
   b) What is Young's modulus? Define Poisson's ratio explain it. 7 M

UNIT-III

5. a) Explain thermal conduction, convection and radiation. 7 M

   b) Explain Lee's method with suitable diagram. 7 M

OR

6. a) Explain the method of Forbe's to determine the coefficient of thermal conductivity of a good conductor. 10 M

   b) Write different types of thermal expansions of solids. 4 M

UNIT – IV

7. a) Using Sabine's formula, explain how the sound absorption coefficient of a material is determined. 7 M

   b) State the acoustic requirements of a good auditorium. 7 M

OR

8. a) Explain the terms reverberation and reverberation time. 7 M

   b) Why does acoustics play an important role in building designs? 7 M

UNIT – V

9. a) What is Hall effect? Explain Hall effect sensor. 7 M

   b) What is magneto strictive sensor? Explain it. 7 M

OR

10. a) Explain Working mechanism and applications of Strain and pressure sensors. 7 M

    b) Define the sensor. Write the classifications of sensors. 7 M