

3RD SEM./ MECH/AUTO/AERO/ AIRCRAFT MAINT./ DIP. IN MECH./ MECH. (MAINT.)/ MECH.(PROD.)/ MECH (IND INTG.)/MECH(SWITCHL.)/2023(W) NEW

TH-3 ENGINEERING MATERIAL

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
- Define porosity.
 - State two applications of nonferrous material.
 - What is phase diagram? State its significance.
 - What is crystal defect? State different types of crystal defect.
 - What is hardenability?
 - What is babbit material? State its applications.
 - Define polymerization.
 - Give two examples of ceramics and state its applications.
 - What is fibre reinforced composites?
 - Define annealing.
2. Answer Any Six Questions. 6 x 5
- Explain the effects of various alloying elements such as Cr, Mn, Ni & V.
 - Explain various types of point defect with neat sketch.
 - What is the purpose of heat treatment? Explain normalizing heat treatment process.
 - Classify composite material. Discuss dispersion strength composites.
 - Differentiate between thermosetting and thermoplastic polymers.
 - Explain deformation by slip and twinning.
 - Discuss different functions of bearing.
- Answer any Three Questions.
- Explain different mechanical properties of engineering material. 10
 - Draw iron carbon diagram and explain its salient points. 10
 - Discuss various properties of plastic. 10
 - Explain carburizing and nitriding. 10
 - What is reliability? Explain performance requirements of engineering material. 10