Register No: **QP CODE: 20ME11T**

I Semester Diploma Examinations Apr/ May -2024

MATERIALS FOR ENGINEERING

Time: 3Hours **Max marks: 100**

Instructions: (1) Answer **any one full** questions from each section
(2) One full question carries 20 marks

Section-I

1. (a) Define the following mechanical properties: 10
   i) Ductility
   ii) Malleability
   iii) Hardness
   iv) Elasticity
   v) Creep
   (b) Explain BCC and FCC crystal structures with neat sketch. 10

2. (a) Write the classification of steels. 6
   (b)State the following material composition 6
   i)FeE230
   ii)FG200
   iii)35C8
   (c)With neat sketch explain Electron microscope. 8

Section-II

3. (a) State the properties and applications of white cast iron. 8
   (b) List the desirable properties of bearing Material. 4
   (c) Explain purpose of alloying of steel 6

4. (a) Differentiate between Ferrous and Nonferrous metals. 10
   (b) State the Properties and applications of copper. 10

Section-III

5. (a) Compare brass and bronze. 10
   (b) List the Properties and applications of Aluminium. 10

6. (a) Differentiate between Metals and Nonmetals 10
   (b) Distinguish between thermosetting and thermoplastics 10

Section-IV

7. (a) Explain Smart materials and Nano materials 10
   (b) List the Properties and applications of composite materials 10

8. (a) List the properties and applications of biomaterials 10
   (b) Define ceramics. List it types and State any four application of it 10

Section-V

9. (a) Explain the process of Annealing and Normalizing. 10
   (b) List the purpose of heat treatment process. 6
   (c) List the applications of Hardening process 4

10. (a) State protections methods used to prevent corrosion 5
    (b) Differentiate between electrolytes and non-electrolytes 5
    (c) Explain with Sketch Electroplating 10

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