

Reg. No:

--	--	--	--	--	--	--	--	--	--

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)**B.Tech II Year I Semester Supplementary Examinations Nov/Dec 2019****MATERIAL SCIENCES & METALLURGY****(ME)**

Time: 3 hours

Max. Marks: 60

(Answer all Five Units **5 x 12 = 60** Marks)**UNIT-I**

- 1 a Draw a neat sketch of FCC crystal structure and calculate its packing factor, Coordinate number. **6M**
b Give a brief note on intermediate alloy phases. **6M**

OR

- 2 a What are the various types of solid solutions? Explain with examples. **8M**
b Explain the Electron compound? **4M**

UNIT-II

- 3 a What is Phase? What are different types of phase diagram? **4M**
b Explain and Draw the Equilibrium cooling and heating of pure metals/alloys system. **8M**

OR

- 4 Draw the Eutectoid system diagram and label all points, lines and areas. **12M**
Explain its important features.

UNIT-III

- 5 a Write Classification of Steels. **6M**
b Explain the structure and properties of Ductile cast iron. **6M**

OR

- 6 a Explain the structure and properties of Aluminum and its alloys. **8M**
b Explain the structure and properties of tool and die steel. **4M**

UNIT-IV

- 7 What are TTT diagrams? How they prepared? What is their significance? **12M**

OR

- 8 a Explain about various Hardening process use for alloys? **6M**
b What is the purpose of using normalizing, Annealing and Hardening? **6M**

UNIT-V

- 9 a Explain Metal matrix composite. Discuss about their properties. **8M**
b What is cermet? What are their properties? **4M**

OR

- 10 a What are the various methods of component manufacture of composites? **8M**
b What are glasses? How they manufacture. **4M**

*** END ***