

**SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI**

**Summer Examination 2020 ( Backlog )  
HVPM's College of Engineering and Technology, Amravati  
Mechanical Engineering Department  
Bachelor of Engineering Semester – IV**

**Subject : Engineering Metallurgy**

**Code :**

**Instructions :**

- 1. Solve any two questions**
  - 2. All questions carry equal marks**
- 

**Q1.**

- a) What are the factors affecting selection of Material. (02)**
- b) Explain Isomorphous System. (02)**
- c) What is the purpose of Alloying. (02)**
- d) State the Properties of Cast Iron. (02)**
- e) Explain the purpose of Heat treatment Purpose. (01)**
- f) What are the advantages of Powder Metallurgy. (01)**

**Q2.**

- a) Define the terms : i. Bulk Modulus      ii. Brittleness (02)**
- b) State the limitations of Fe-Fe<sub>3</sub>C Equilibrium diagram. (02)**
- c) Classify steels depending on the Carbon contents. (02)**
- d) Classify Cast iron depending on the type of furnace used. (01)**
- e) Explain Isothermal Annealing. (02)**
- f) What are the steps involved in Powder Metallurgy Process. (01)**

**Q3.**

- a) What Coordination Number & state value for different structure. (02)**
- b) What are three types of Equilibrium diagram. (01)**
- c) State Properties of Stainless steel. (02)**
- d) What are the factors affecting Graphitization of Cast iron. (02)**
- e) Differentiate between Annealing and Normalizing. (02)**
- f) State the limitations of Powder Metallurgy. (01)**

**Q4.**

- a) Define Atomic Packing Factor. (01)**
- b) Explain Composite Material and its types. (02)**
- c) What is Manganalloy. (01)**
- d) Explain Yellow metal. (02)**
- e) Explain TTT diagram. (02)**
- f) Explain Self Lubricated Bearing. (02)**