

Seat No. **OCT-NOV 2025 WINTER EXAMINATION****11731 Bachelor of Technology (NEP-2.0)****Sub. Name: Metallurgy****Sub. Code: 114413/112342****Day and Date: Friday ,05-12-2025****Total Marks: 60****Time: 02:30 PM To 05:00 PM**

- Instructions:**
1. All questions are compulsory
  2. Draw neat labelled diagrams wherever necessary
  3. Figures to the right indicate full marks

**Q1) Solve any three [15]**

- a. Draw the crystal structure of FCC and evaluate the no of atoms present per unit cell. [5]**
- b. What are steels? How Steels are classified? [5]**
- c. What is Cast Iron? How CI is classified? [5]**
- d. Write a short note on Pb- Sn (Solders and fusible alloys) [5]**

**Q2) Solve any Three [15]**

- a. What is annealing? Explain different types of it? [5]**
- b. What is Flame Hardening and what are its advantages, limitations and applications? [5]**
- c. What is tempering? Explain different types of it? [5]**
- d. What is Normalizing? How is it carried out? [5]**

**Q3) Solve any Three [15]**

- a. Write a Short Note on Magnetic particle testing. [5]**
- b. Enlist different applications of powder metallurgy. [5]**
- c. Write a Short Note on Dye penetrates Testing. [5]**
- d. Draw Stress strain diagram for Cast iron material. [5]**

**Q4) Solve any Three [15]**

- a. Describe the different types of ceramics and give examples for each type. [5]
- b. Classify polymers based on their structure and properties. Provide suitable examples. [5]
- c. Classify composite materials and describe each category with examples. [5]
- d. List and describe the classes of materials used in medicine (metals, ceramics, polymers, composites). [5]

## **End Of Question Paper**

**Important Note for Chief Exam Officer / SRPD Coordinator / Sr Supervisor/ Student -**

This Question Paper may be distributed for following Subjects as common code.

सदरची प्रश्नपत्रिका खालील विषयांकरिता वितरित करता येईल.

1] (1154) B.Tech. CBCS (114413) Metallurgy Part 2 SEM 3

2] (11731) Bachelor of Technology (NEP-2.0) (112342) Metallurgy Part 2 SEM 3