

**BACHELOR OF TECHNOLOGY (C.B.C.S.) (2021-COURSE)**  
**B. Tech. Sem - II MECHANICAL :SUMMER- 2022**  
**SUBJECT : CHEMISTRY OF ENGINEERING MATERIALS**

Day : Thursday  
Date : 28-07-2022

**S-24065-2022**

Time : 10:00 AM-01:00 PM  
Max. Marks : 60

**N.B.:**

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Draw diagrams wherever necessary.
- 4) Use of Scientific Calculator is allowed

**Q.1** What are crystal defects? Explain with suitable diagrams. Why the defects (10)  
observe in crystals?

**OR**

**Q.1** With suitable examples explain Weiss and miller indices. How the indexing of (10)  
planes and directions is done? Explain with neat diagram.

**Q.2** What is concentration of ores? Explain froth flotation and magnetic separation (10)  
methods with suitable diagram.

**OR**

**Q.2** What are ores? Give the types of ores. Explain Gravity separation method used (10)  
for the concentration of ores.

**Q.3** What are alloys? Give the classification of alloys. (10)

**OR**

**Q.3** What is Green Chemistry? Explain Twelve Principles of Green Chemistry. (10)

**Q.4** What are acrylics? What are rubbers? Give types of rubbers. (10)

**OR**

**Q.4** What are plastics? Give the synthesis, Properties and applications of (10)  
a) Urea formaldehyde      b) e-poxy resin      c) phenol formaldehyde.

**Q.5** What are metal matrix composites? Explain types , properties and applications (10)  
of metal matrix composites.

**OR**

**Q.5** What are ceramic matrix composites? Give its types, properties and (10)  
applications.

**Q.6** What is organic coatings? Explain protective coatings paints, varnishes and (10)  
enamels.

**OR**

**Q.6** Explain various types of corrosion like hydrogen embrittlement, pit type (05)  
corrosion and stress corrosion.

\* \* \* \* \*