

**BACHELOR OF TECHNOLOGY (C.B.C.S.) (2021-COURSE)**  
**B. Tech. Sem - II Robotics & Automation Engineering : WINTER- 2022**  
**SUBJECT : CHEMISTRY OF ENGINEERING MATERIALS**

Day : Friday

Time : 10:00 AM-01:00 PM

Date : 25-11-2022

W-24124-2022

Max. Marks : 60

**N. B.**

- 1) All Questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Assume suitable data if necessary.
- 4) Use of non-programmable **CALCULATOR** allowed

**Q. 1** How the solid solutions are formed? Explain the effects of crystals structure defect on various properties. (10)

**OR**

**Q. 1** Explain screw and edge dislocation with suitable diagrams. (10)

**Q. 2** What is concentration of ores? Explain chemical methods like calcination, Roasting with reactions. (10)

**OR**

**Q. 2** Explain --Electrolytic Refining of metals and Reduction of ore by pyrolysis. (10)

**Q. 3** What is Green chemistry? Explain Twelve principles of green chemistry (10)

**OR**

**Q. 3** What are metallic materials? Explain purposes of making an alloy. (10)

**Q. 4** Differentiate between thermo-softening and thermosetting of plastics. Give the types of rubbers. (10)

**OR**

**Q. 4** How industrially important plastics like urea formaldehyde and phenol formaldehyde can be synthesized. Give its properties and application. (10)

**Q. 5** What are composites? Give its types. Explain fiber reinforced plastics. (FRP) (10)

**OR**

**Q. 5** Explain various types of reinforce materials and characteristics of reinforce materials. (10)

**Q. 6** What is cathodic protection? Explain chemical conversion coatings. (10)

**OR**

**Q. 6** What is hydrogen embrittlement process in corrosion? Explain methods of cleaning articles before electrodeposition. (10)

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