

GUJARAT TECHNOLOGICAL UNIVERSITY
DIPLOMA ENGINEERING – SEMESTER – 8th • EXAMINATION – SUMMER 2013

Subject Code: 385506**Date: 30/05/2014****Subject Name: Advance Materials and Metallurgy****Time: 02:30 pm – 5:00 pm****Total Marks: 70****Instructions:**

1. Attempt All questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Each question carry equal marks (14 marks)

- Q.1** (a) State and describe SEVEN material properties related to advanced materials. **07**
 (b) Describe any ONE type of Steel making Process with neat sketch. **07**
- Q.2** (a) State meaning of carbon reaction. **07**
 (b) Describe Metallurgy of Steel with its Microstructure. **07**
 OR
 (b) State importance of Spray Refining Process with neat sketch. **07**
- Q.3** (a) Define the term “Alloy”. State significance of alloy design. **07**
 (b) Describe meaning of Multi phase materials. **07**
 OR
- Q.3** (a) Define and Explain Precipitation, Particle coarsening and Recrystallization. **07**
 (b) Describe Steps of alloy Designing. **07**
- Q.4** (a) Draw neat sketch of Nuclear Vessel and Prepare list of its parts with their advanced materials. **07**
 (b) Draw neat sketch of Cryogenic Vessel and Prepare list of its parts with their advanced materials. **07**
 OR
- Q.4** (a) Draw neat sketch of Super Critical Boiler and Prepare list of its parts with their advanced materials. **07**
 (b) Draw neat sketch of Cold Stretched Vessel and Prepare list of its parts with their advanced materials. **07**
- Q.5** (a) Define the term “Advance Materials”. State its importance in Fabrication. **07**
 (b) Describe Foundry Metallurgy with its suitable example. **07**
 OR
- Q.5** (a) State different Properties of Cupronickel Materials. **07**
 (b) Describe theory of Rolling with neat sketch. **07**
