

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V • EXAMINATION – SUMMER • 2014****Subject Code: 152103****Date: 19-06-2014****Subject Name: Foundry Technology****Time: 10.30 am - 01.00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Give the classification of Foundries. Write a general flow sheet of a Gray Cast Iron Foundry. **07**
- (b) What are the factors you would like to consider for selecting pattern making materials? Explain each factor briefly. **07**
- Q.2** (a) What do you mean by pattern allowances? Write in brief the allowances that are given for making patterns. **07**
- (b) Give a complete list of tests conducted on foundry sand to determine its suitability for making green sand moulds. **07**
- OR**
- (b) Draw neat sketch of: (1) Follow board pattern (2) Skeleton pattern (3) Sweep pattern (4) Split Pattern **07**
(2+2+2+1)
- Q.3** (a) What is meant by directional solidification? How does it refer from progressive solidification? **07**
- (b) Explain different methods which are adopted in a foundry to promote directional solidification. **07**
- OR**
- Q.3** (a) What is a pattern? Write a brief note on plastics as a pattern making materials. **07**
- (b) What is a core box? What are different types of core boxes? Draw figure for each type. **07**
- Q.4** (a) Explain the function of Gating & Riser system used in a foundry? What are different types of Gating system? Draw neat sketch of Whirl gate & Horn gate **07**
- (b) Write short note on: **07**
(1) Gating Ratio (2) Blind Riser (3) Feeding Distance **(2+2+3)**
- OR**
- Q.4** (a) Draw a neat sketch of a cupola furnace and indicate various zones and temperatures and explain its working. **07**
- (b) Write a brief note on CO₂/ Silicate process. **07**
- Q.5** (a) Give the salient features of Shell Moulding process ? **07**
- (b) Give the salient features of pressure die casting. **07**
- OR**
- Q.5** (a) i) What are the properties of a good moulding sand. **02+03+02**
ii) What are the degassing techniques used in foundry.
iii) What is aspiration effect? How this effect is minimized.
- (b) Discuss the variables of centrifugal casting process. What are the advantages and limitations of the process? **07**
