

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V (NEW) - EXAMINATION – SUMMER 2016****Subject Code:2152506****Date:21/05/2016****Subject Name:Foundry Technology****Time:02:30 PM to 05:00 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) Define a pattern? Explain types of pattern with neat sketch. **07**
(b) Which are the materials used in pattern making? Which one is better for steel casting? Explain in detail all pattern materials. **07**
- Q.2** (a) Explain the principle, construction and working of electric arc furnace in foundry. **07**
(b) Explain various molding methods used in a foundry. Which method is best suited for making flywheels? Differentiate hand molding and machine molding. **07**
- OR**
- (b) Explain principle, construction and working of cupola furnace in a foundry. For which purpose this furnace is used? **07**
- Q.3** (a) Differentiate green sand and dry sand. Explain each type of sand with its application. **07**
(b) What is a core? Why and where it is used? Explain any five types of cores with its application. **07**
- OR**
- Q.3** (a) What is shot blasting? How a casting is cleaned? Elaborate cleaning methods of casting. **07**
(b) What is annealing? What is the necessity of heat treatment to a medium carbon steel casting? Explain any two heat treatment methods in brief. **07**
- Q.4** (a) What is a sprue? Why it is required? Explain elements of gating system with a simple casting design. **07**
(b) What is net cast? How one can improve casting ability? What precautions should be taken? **07**
- OR**
- Q.4** (a) What is shrinkage? What are the causes of defects in a casting? How the defects can be eliminated? Explain any five defects in brief. **07**
(b) Which test is required to find out depth of casting? Explain any two testing methods in detail. **07**
- Q.5** (a) What is a backing sand? How molding sand is prepared? Which are the additives and binders used in preparing molding sand? **07**
(b) Can CAD/CAM system be applied to a foundry? How? What will be the benefits? **07**
- OR**
- Q.5** (a) Which investment is carried out in investment casting? Explain the process in detail. **07**
(b) What is a shell in shell mould casting? Which sand is used in shell mould casting? Explain the process in detail. **07**
