

GUJARAT TECHNOLOGICAL UNIVERSITY**B. E. Sem. - V - Examination – June- 2011****Subject code: 152501****Subject Name: Casting Technology****Date: 20/06/2011****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) Describe the major activities in Metal Casting through a flow chart and compare the merits and demerits of Metal Casting process with other mfg. process. **07**
(b) Enlist the different types of pattern and explain any four with neat sketch. **07**

- Q.2** (a) What are the activities in “Pattern Design”? Giving neat sketches, explain the different types of pattern allowances. **07**
(b) Compare the merits, demerits and applications of different pattern materials. **07**
What is the purpose of coloring patterns?

OR

- (b) Give the detail classification of foundry sand and describe any three molding sand with its application. **07**

- Q.3** (a) Name the ingredients commonly added in the molding sand and explain the desired properties of good molding sand **07**
(b) Enlist the necessary steps of sand molding. Differentiate between bench molding, floor molding and pit molding. **07**

OR

- Q.3** (a) Describe the defects that caused by improper pattern equipments, wrong practices in molding and core making. **07**
(b) Draw a neat sketch and explain the principle of electric arc furnace. Compare its merits, demerits and applications with electric induction furnace. **07**

- Q.4** (a) Draw a neat sketch of cupola, showing different parts and zones. Explain the steps of operating to melt Cast Iron. **07**
(b) Draw neat sketch of components of the gating system. State the functions and importance of each component. Also give the attributes of technically ideal gating system. **07**

OR

- Q.4** (a) Explain the phenomena of directional solidification and how it is achieved by chills and padding **07**
(b) Explain with neat sketch the Investment casting process with its advantages, limitations and applications. **07**

- Q.5** (a) Describe with neat sketch, the pressure die casting process with its merits, demerits and applications. **07**
(b) Explain the principle, applications and limitations of Dye-penetrant testing and magnetic particle testing. **07**

OR

- Q.5** (a) Explain the principle of ultrasonic testing of casting and compare with radiography. **07**
(b) Show the layout for small, medium and large foundry. How does a good layout help in higher productivity and quality in foundry? Explain with an example. **07**
