[03 – 3116]

III/IV B.E. DEGREE EXAMINATION.

First Semester

Mechanical Engineering

Elective I —ADVANCED FOUNDRY AND WELDING TECHNOLOGY

(Effective from the admitted batch of 2006–2007)

Time : Three hours Maximum : 70 marks

Question No. 1 is compulsory.

Answer any FOUR from the remaining.

Answer ALL questions.

Assume suitable missing data wherever necessary.

1. (a) What are the ingredients of core sand?

   (b) What are the causes of distortion in welding?

   (c) State conditions for easy knock out of moulds.

   (d) What are the electrode materials for resistance welding?

   (e) Name two methods for improving efficiency of cupola.

(f) What is the necessity of preheating for welding of cast iron?

(g) Differentiate J - and V-types of weld edge preparation.

2. (a) Write about recent developments in core making.

(b) Explain vacuum moulding process.

3. (a) Differentiate between ferritic and pearlitic malleable irons.

(b) Explain about centre line feeding resistance in Sand and chill moulds.

4. (a) What are the requirements of a good foundry layout?

(b) Write about equipments used for handling of moulds.

5. (a) Explain the effect of various parameters on the Quality of resistance welding.

(b) Give a brief note on the following :

(i) Laser beam welding

(ii) Electron beam welding.

6. (a) Write about the weldability of aluminium and its alloys.

(b) Make a note on the sources of gas absorption and its consequence in Welding process.

7. (a) Explain the morphology and structure of cast alloys.

(b) Write about expendable pattern casting Process.

8. (a) Explain the Production of S.G Iron.

(b) What are the Principles of good welding joint?