B. Tech.
(SEM. II) EVEN THEORY EXAMINATION 2012-13
MANUFACTURING PROCESSES

Time: 2 Hours
Total Marks: 50

SECTION—A

1. Attempt all questions. All questions carry equal marks.
   \[(5 \times 2 = 10)\]
   (a) Differentiate between creep and fatigue failures.
   (b) Write a short note on brittle fractures.
   (c) What are various classifications of steel?
   (d) Briefly explain gas welding process.
   (e) What are the objectives of tempering?

SECTION—B

2. Attempt any three questions. All questions carry equal marks.
   \[(5 \times 3 = 15)\]
   (a) Briefly discuss the characteristics of a ductile fracture.
   (b) What are alloy steels? Discuss the importance of any five alloying elements used in steels.
   (c) Define rolling process. Using schematic diagrams and state the differences between cluster mills and continuous rolling.
   (d) Explain the purpose of galvanizing. Discuss the hot dip galvanizing process.
   (e) What is composite material? Discuss their types along with their relative importance over conventional materials.
SECTION—C

3. Attempt any one of the following: \((5\times1=5)\)
   (a) With neat diagrams explain full annealing and process annealing.
   (b) Describe the process of steel hardening. Why steels are required to be tempered after it has been hardened?

4. Attempt any one of the following: \((5\times1=5)\)
   (a) What is extrusion? Differentiate between forward and backward extrusion process with suitable sketches.
   (b) What is a pattern? Explain various allowances provided in pattern making and the reasons for it.

5. Attempt any one of the following: \((5\times1=5)\)
   (a) Explain the following drilling operations:
       (i) Countersinking
       (ii) Reaming
       (iii) Tapping
       (iv) Counter boring.
   (b) Describe at least three methods of taper turning on a centre lathe.

6. Attempt any one of the following: \((5\times1=5)\)
   (a) Explain the working principle of resistance welding. Briefly discuss the advantages and disadvantages of it.
   (b) What do you mean by plant layout? Discuss its objectives and advantages.

7. Attempt any one of the following: \((5\times1=5)\)
   (a) Write a brief note on cement indicating its properties and applications.
   (b) Explain the following with neat sketches:
       (i) Extrusion moulding
       (ii) Blow moulding.