C U SHAH UNIVERSITY

Subject Code: 5TE02AMP1 Subject Name: Advanced Manufacturing Processes & Analysis
Course: M. Tech (CAD/CAM)
Semester: II   Total Marks: 70
Instructions:
1. Make suitable assumptions whenever necessary.
2. Figures to the right indicate full marks.
3. All questions are compulsory.

Section - I

Q-1 (a) List the various considerations in press tool design.   02
     (b) What do you mean by functional design?   02
     (c) Write general concepts of weld design.   03

Q-2 (a) Define flow curve and prove that $\sigma = R\ \varepsilon^n$ 05
     (b) Explain vacuum casting.   05
     (c) Define weldability. Describe effect of alloying elements on weldability.   04

OR

Q-2 (a) Define residual stresses with neat sketch.   05
     (b) Explain and analyze flask-less moulding process.   05
     (c) How residual stresses in welding can be controlled?   04

Q-3 (a) Classify metal forming processes and give complete analysis of any one process.   07
     (b) Explain centrifugal casting with neat sketch.   07

OR

Q-3 (a) Describe following   07
          i) Hydrostatic pressure   ii) Workability
     (b) Explain continuous casting with neat sketch.   07

Section -II

Q-4 (a) Write applications of advance welding techniques.   02
     (b) What do you mean by orientation of welds in an assembly?   02
     (c) Define deep hole drilling.   03

Q-5 (a) Describe micro machining with neat sketch.   05
     (b) Describe Laser Beam Machining.   05
     (c) Write a short note on reverse engineering.   04

OR

Q-5 (a) Write a short note on metal spinning.   05
     (b) Describe EDM.   05
     (c) Explain and analyze stereo lithography method of rapid prototyping and give   04
          its limitation.

Q-6 (a) Explain the basic principle of operation of wire cut EDM with neat sketch.   07
     (b) What is rapid prototyping? Explain basic process step of rapid prototyping.   07

OR

Q-6 (a) Explain the basic principle of operation of USM with neat sketch.   07
     (b) Explain and analyze laminated object manufacturing process and give its   07
          advantages over other rapid prototyping techniques.