

GUJARAT TECHNOLOGICAL UNIVERSITY
ME - SEMESTER– II(Old course) • EXAMINATION (Remedial) – WINTER- 2015

Subject Code: 1720808**Date: 14/12/2015****Subject Name: Mfg Processes & Analysis****Time: 2:30 pm to 5:00 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) Discuss the procedure for selection of stress strain curves for cold and hot working. Explain Tresca maximum shear strain energy criteria and its significance. **07**
- (b) List the various operations that can be carried out with press. Describe with neat sketch bending, deep drawing and reverse redrawing operations. **07**
- Q.2** (a) Write short note on Electro-hydraulic forming. **07**
- (b) Select suitable molding process for following components, stating proper reasons. (1) Paper Mill Rolls (2) Watch cases (3) Turbine blade (4) Large steel valve (5) Gear box casing (6) Fly wheel (7) Car engine cylinder. **07**
- OR**
- (b) Explain the principles of fluid flow involved in the design of sprue, runner and gating deriving the expressions. **07**
- Q.3** (a) With a neat sketch, explain the principle of operation, merits-demerits and application of shell moulding process. **07**
- (b) With neat sketch, describe the full mould casting process, its merits-demerits and applications of the process **07**
- OR**
- Q.3** (a) Write short note on Weldability of non ferrous alloys. **07**
- (b) How is residual life assessment of welded structures carried out? What are the factors that affect the life of welded structures? **07**
- Q.4** (a) Distinguish between distortions and residual stresses in welding and differentiate between longitudinal and transverse distortions. **07**
- (b) How does the weld thermal cycle and shrinkage leads to the residual stresses? What design measures help in limiting the welding distortions stresses **07**
- OR**
- Q.4** (a) Describe the ECM Process with neat sketch and its process parameters. Compare ECM with EDM and state the applications of ECM process. **07**
- (b) Explain the working principle of USM process with neat sketch, process parameters, merits-demerits and its applications. **07**
- Q.5** (a) Explain the working principle of EDM process with neat sketch, process parameters, merits-demerits and its applications. **07**
- (b) What is LASER? Explain the LBM process with neat sketch, process parameters, merits-demerits and its applications. **07**
- OR**
- Q.5** (a) Write short note on Micro Machining. **07**
- (b) List various RP Processes and explain any one with neat sketch in detail. **07**