

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (OLD) - EXAMINATION – SUMMER 2018****Subject Code:172003****Date:03/05/2018****Subject Name:Manufacturing Technology - II****Time:02:30 PM to 05:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Draw neat diagrams. Diagrams with inferior quality may not be awarded any credit.

Q.1 (a) With the help of neat and labeled diagram explain briefly following terms. **07**
Riser, Runner, Pouring basin, Gating system

(b) What is the working principle of Electro-Discharge Machining (EDM) process for material removal? Support your answer with the help of neat schematic diagram and description of EDM process parameters. **07**

Q.2 (a) What are the different types of welding joints are available? Explain with suitable line diagrams of welding joints. **07**

(b) Describe 3-2-1 location system for cubic shaped component to arrest different degree of freedoms. **07**

OR

(b) Explain with the help of suitable example explain the concept of dimensional control and tolerance stacking for designing a fixture for a given component. **07**

Q.3 (a) With the help of schematic diagram describe the working principle of centrifugal casting process. **07**

(b) Differentiate between Electro-Chemical Machining (ECM) process and Ultra-Sonic Machining (USM) Process. **07**

OR

Q.3 (a) Differentiate between one piece pattern and split pattern with suitable example and neat sketch. **07**

(b) Describe with graphical representation the effect of various process parameters of Abrasive Jet Machining (AJM) process to control the material removal rate. **07**

Q.4 (a) With the help of neat diagram explain the TIG welding process and role of inert gas used in this process. **07**

(b) What is called as hot working and cold working process in metal forming work? Give difference from quality of work and amount of work done in these processes. **07**

OR

- Q.4** (a) Explain the functions performed by the flux coating on welding electrode. **07**
- (b) Draw and explain the following drawing operations. **07**
Deep drawing operation; Reverse drawing operation
- Q.5** (a) Describe the procedure of squareness measurement. Assume suitable component to explain the procedure of squareness measurement. **07**
- (b) Explain the procedure of producing hexagonal cross sectional shape from a circular cross sectional shaped raw material by following techniques. **07**
1. metal forming process
2. machining process
Compare relative merits and demerits of both techniques.

OR

- Q.5** (a) Give suitable examples of line standards and end standards of measurement and explain. **07**
- (b) What is the difference between geometric control and mechanical control for designing a fixture? Give suitable example and explain. **07**

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