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GUJARAT TECHNOLOGICAL UNIVERSITY BE - SEMESTER-VII(OLD) • EXAMINATION - WINTER 2016 Subject Code: 172003 Date: 23/11/2016 Subject Name: Manufacturing Technology - II Time: 10:30 AM to 01:00 PM **Total Marks: 70 Instructions:** 1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks. 0.1 (a) Explain various flushing systems used in Electro Discharge Machining (EDM) **07** process. What is the function performed by flushing system? (b) What function is performed by Sine Bar? With the help of neat diagrams 07 describe the working principle and limitation of Sine Bar. **Q.2** Describe the working principle of Abrasive Jet Machining (AJM) process. 07 (a) What are the related process parameters to be controlled for effective machining using AJM? Explain them briefly. **(b)** Briefly explain the following terms used in casting process. 07 Permeability; Core and Core print; Runner and Riser OR (b) Bring out the difference in the material removal process between Ultra Sonic 07 Machining (USM) and Laser Machining. Also discuss about the quality of machined surface in both processes. Explain Submerged Arc Welding (SAW) Process with the help of neat 0.3 07 schematic diagrams. Also describe its application with suitable example. (b) Define pattern for a casting. What are the different types of patterns available? 07 Describe them briefly with suitable diagram. OR (a) Compare and contrast the investment casing, die casting and vacuum die Q.3 **07** casting processes amongst each other. (b) Differentiate between the pressurized and non-pressurized gating system for a 07 casting process. Compare relative merits and demerits of both the systems.

(a) Explain the process to measure perpendicularity of Fitter's Square. Draw neat

Q.4

07

diagram to describe the procedure and set up for the squareness measurement of Fitter's Square along with the tooling used for it.

(b) List out various conventional and unconventional machining processes. Bring out the need of unconventional machining processes with suitable examples.

OR

- Q.4 (a) What is called resistance welding process and how does it differ from regular welding process? List out various resistance welding process and give its brief explanation.
 - (b) Develop a process to measure the straightness of lathe guide ways. List out the tooling needed for it and produce a set up for straightness measurement of lathe guide ways.
- Q.5 (a) Differentiate between hot working and cold working process. Give suitable example of hot working and cold working processes to support your answer.
 - (b) Draw and explain the location system of the following tooling: 07
 - 1. Single point cutting tool in tool post
 - 2. Socket (drill tool holder) in machine spindle

OR

- Q.5 (a) Describe 3-2-1 location system for a cube shaped work piece in context of jig of and fixture design.
 - (b) Draw neat and completely labeled diagrams of the following forming processes. 07
 - 1. Punching a circular hole
 - 2. Drawing a cup shaped component
