

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
M. E. - SEMESTER – I • EXAMINATION – WINTER • 2014

Subject code: 2715003**Date: 12-01-2015****Subject Name: Advanced Manufacturing Process****Time: 02:30 pm - 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.

- Q.1** (a) How non conventional machining differs from conventional machining? Give your comment. 07
- (b) Fill in the blanks. 07
- 1). Metal casting involves: Pouring _____ into a _____ having the Required shaped _____ and then allowing it to solidify.
 - 2). Cold forming is performed by heating the metal _____ its re-Crystalline temperature.
 - 3). _____ is the last operation before final finishing in the casting process.
 - 4). The AWJM uses _____ along with _____ water for cutting.
 - 5). The dielectric fluid used in EDM is _____.
 - 6). The _____ is more powerful amongst the other lasers and is Primarily used for cutting and profiling.
 - 7). The principal advanced machining methods used for machining brittle and Hard non-conducting materials are _____.
- Q.2** (a) Write the working principal of water jet machining process with neat sketch. 07
- (b) Write the working principal of laser beam machining process with neat sketch and also discuss applications. 07
- OR**
- (b) Explain the electron beam machining process with neat sketch and stated advantages. 07
- Q.3** (a) Explain ceramic shell casting process and stated its advantages. 07
- (b) What are the advantages of metal mold casting process over the sand mold casting process? 07
- OR**
- Q.3** (a) Write the short note on vacuum mould casting process and its application. 07
- (b) Write merit and demerit of advanced casting process over conventional casting process. 07
- Q.4** (a) Enlist the advantages and disadvantages of electron beam welding process. 07
- (b) Explain the working principal of laser beam welding process? 07
- OR**
- Q.4** (a) With neat sketch and briefly explain ultrasonic welding process and its applications. 07
- (b) Write and explain important process parameters of AJM and also effects of variables on MRR. 07

- Q.5** (a) How HERF process is different from the conventional forming processes. Explain its working principal. **07**
- (b) Write short note on electromagnetic forming process. **07**
- OR**
- Q.5** (a) Enlist method of stretch forming processes. Explain its applicability, advantages and limitations? **07**
- (b) Explain electro hydraulic forming process and stated its advantages. **07**
