

GUJARAT TECHNOLOGICAL UNIVERSITY
BE – SEMESTER – VI EXAMINATION – WINTER 2015

Subject Code:163403**Date:08/12/ 2015****Subject Name: ADV. MANUFACTURING PROCESSES****Time:2:30pm to 5:00pm****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)** Justify the need of unconventional manufacturing process in today's industries. What are the basic factors upon which the unconventional manufacturing processes are classified? Explain. **07**
- (b)** Unconventional machining processes yield low rates of material removal compared to conventional processes even then they have gained wide popularity. Discuss why? **07**
- Q.2 (a)** Describe the WJM Process with neat sketch and its process parameters. Compare WJM with AJM and state the applications of WJM process **07**
- (b)** Explain the working principle of AJM process with neat sketch, process parameters, merits-demerits and its applications. **07**
- OR**
- (b)** Describe the ECM Process with neat sketch and its process parameters. Compare ECM with EDM and state the applications of ECM process **07**
- Q.3 (a)** Explain the working principle of CHM process with neat sketch, process parameters, merits-demerits and its applications. **07**
- (b)** Explain the working principle of LBM process with neat sketch, process parameters, merits-demerits and its applications. **07**
- OR**
- Q.3 (a)** Explain the working principle of EBM process with neat sketch, process parameters, merits-demerits and its applications. **07**
- (b)** Explain the working principle of PAM process with neat sketch, process parameters, merits-demerits and its applications. **07**
- Q.4 (a)** What are the basic components of a numerical control system? Briefly discuss the function of each component. **07**
- (b)** Show schematically the different forms of numerical control, viz. open loop and close loop system. **07**
- OR**
- Q.4 (a)** Using neat sketch, explain the working principle of incremental and absolute optical encoders. **07**
- (b)** List steps involved to produce an NC program. Briefly explain sequence number, preparatory function and miscellaneous function. **07**
- Q.5 (a)** Write a block diagram; explain the process of manual part programming. **07**
- (b)** What is adaptive control? What are its special characteristics? Explain the types of adaptive control. **07**
- OR**
- Q.5 (a)** What is post processor? Discuss the function of the postprocessor. **07**
- (b)** What are G codes? Explain any seven G code with example. **07**