

Roll No.

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Total No. of Pages : 02

Total No. of Questions : 08

M.Tech.(ME) (Sem.-3)

ADVANCED MANUFACTURING TECHNIQUES

Subject Code : MME-529

M.Code : 38218

Time : 3 Hrs.

Max. Marks : 100

INSTRUCTION TO CANDIDATES :

1. Attempt any FIVE questions out of EIGHT questions.
2. Each question carries TWENTY marks.

1. What do you understand by additive rapid prototyping processes? Describe in detail any three technologies that are used in additive rapid prototyping. Why are cleaning and finishing operations necessary for rapid prototyping operations?
2.
 - a) Why is Taguchi experimental design called a Robust design? Describe the various controllable and uncontrollable parameters in a machining process.
 - b) Explain the concepts of standard orthogonal arrays and S-N ratios as used in Taguchi methodology. Is it possible to modify a standard orthogonal array?
3.
 - a) Define Supply Chain Management. Describe the various activities involved in Supply Chain Management.
 - b) What is Kanban? Name the two most common types of Kanbans and compare them.
4.
 - a) What is materials requirement planning? What are the various inputs of MRP? Explain the difference between independent demand and dependent demand.
 - b) What is the primary goal of Total Productive Maintenance? Differentiate between periodic and predictive maintenance.
5.
 - a) How does computer aided process planning differ from traditional process planning?
 - b) Discuss the characteristics of low, medium and high quantity production organizations. Give one example of each type.

6.
 - a) Describe the principle and operation of electron beam welding process with the help of a neat sketch. What are the limitations of this process?
 - b) What is a laser? Which types of lasers are suitable for laser beam welding process? Give some specific applications of this process.
7.
 - a) What are advanced engineering materials? Give some examples. Also describe the properties and selection criteria of these materials.
 - b) Explain the principle and working of abrasive flow machining process with the help of a neat sketch. Which abrasives are commonly used in this process?
8. Write short notes on :
 - a) Friction Stir Welding
 - b) Theory of constraints
 - c) Environmental issues in manufacturing
 - d) Agile manufacturing

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.