

2015
B.E. (Mechanical Engineering)
Sixth Semester
MEC-606: Advanced Manufacturing Techniques

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Section.

x-x-x

1 (a)	What are Advanced Manufacturing Techniques? What are the various types of energy sources used in Advanced Manufacturing Techniques?	1
(b)	Name the Advanced Manufacturing Techniques which produce best surface finish and surface integrity.	1
(c)	List the process parameters of LBM?	1
(d)	What is standoff distance in AJM?	1
(e)	Write the Faraday's first law of electrolysis for ECM process?	1
(f)	What are Horn and transducers used in USM process?	1
(g)	Write the applications of EDG process?	1
(h)	What are the applications of EDM?	1
(i)	Write the applications of Chemical Machining process?	1
(j)	Describe the Ion Beam Machining principle?	1
SECTION-A		
2(a)	What is the rationale behind in the development of Advanced Manufacturing Techniques? Justify your answer with examples.	5
(b)	Describe the machining principle of AJM?	5
3(a)	With the help of a neat sketch explain the working principle and mechanism of Ultrasonic machining process?	5
(b)	Explain the principle of Chemical machining and list its product applications.	5
4 (a)	What are the desirable properties of abrasives used in AWJM?	5
(b)	What are the various process parameters that affect the MRR and surface finish in Electro Chemical Machining?	5
SECTION-B		
5(a)	Explain the principle and mechanism of material removal in Electro discharge machining (EDM).	5
(b)	Differentiate between IBM and LBM with respect to principle, MRR, and suitability of machining (At least two point each).	5
6	Describe in detail the working, process parameters, equipment and mechanism of material removal of Electron Beam Machining.	10
7(a)	How to minimize tool wear in EDM?	5
(b)	What is Hybrid Machining Process? Explain any one giving its advantages.	5

x-x-x