

L1B  
19/12/13 FN

Reg. No. : 

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

**Question Paper Code : 31544**

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2013.

Sixth Semester

Mechanical Engineering

ME 2026/10122 MEE 17/ME 606 — UNCONVENTIONAL MACHINING  
PROCESSES/UNCONVENTIONAL MANUFACTURING PROCESSES

(Regulation 2008/2010)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. How non-traditional machining processes are classified?
2. Enlist the requirement that demands the use of advanced machining process.
3. What are the Process parameters affecting the Metal removal rate in AJM?
4. What are the properties of water jet machining about effect cuffing action?
5. What are functions of dielectric fluid used in EDM?
6. What are the design factors to be considered while selecting the machine tool?
7. What are the properties are expected from the electrolysis used in the ECM?
8. What are the advantages and disadvantages of ECM?
9. What are the characteristics of Laser used in Laser machining?
10. Mention the applications of Ion Beam Machining.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain the factors that should be considered during the selection of an appropriate unconventional machining process for a given job. (8)
- (ii) Compare and contrast the various unconventional machining process on the basis of type of energy employed, material removal rate, transfer media and economical aspects. (8)

Or

- (b) Non-convention machining process has replaced many convention metal cutting process, Justify using examples (16)

12. (a) (i) Explain the method of AJM with help of schematic diagram. (10)  
(ii) Mention the advantages and disadvantages of AJM. (6)

Or

- (b) Explain the USM machine setup and discuss various feed mechanisms. (16)

13. (a) Describe the wire cut EDM equipment, its working, applications and advantages. (16)

Or

- (b) (i) Explain the classification and characteristics of various spark erosion generators. (8)

- (ii) With help of neat sketch describe the mechanism of material removal in EDM? (8)

14. (a) Explain in detail the ECM process with neat sketch and also mention the advantages and application. (16)

Or

- (b) (i) Describe the working principle and elements of chemical machining. What are the factors on which the resist is selected for used in chemical machine. (10)

- (ii) What are the specific advantages of using chemical machining over electrochemical machining? Give some of the practical applications of chemical machining process. (6)

15. (a) Explain the process of PAM with a neat sketches. With respect to Principle, equipment process parameter, Advantages, disadvantages and Applications. (16)

Or

- (b) Explain the principle of LBM with neat sketch and list out the advantages and disadvantages?