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**Question Paper Code : 73823**

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2017.

Sixth Semester

Mechanical Engineering

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

(Common to Mechanical and Automation Engineering and Production Engineering)

(Also common to PTME 2026 – Unconventional Machining Process for  
BE (Part-Time) Sixth Semester – Mechanical Engineering – Regulations 2009)

(Regulations 2008/2010)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the advantages of unconventional Machining Processes?
2. List the different Unconventional Machining processes based on thermal energy.
3. Name any four abrasives used in AJM process.
4. What are the applications of USM process?
5. What are the functions of dielectric fluid used in EDM?
6. List the factors affecting MRR in EDM.
7. What are echants in chemical machining process?
8. What are the advantages of ECM?
9. Name the beam control techniques of EBM.
10. What is meant by Laser beam drilling?

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) With a neat sketch, explain the abrasive jet machining process. (8)
- (ii) Discuss about various process parameters involved in AJM process. (8)

Or

- (b) (i) Explain with a neat sketch, the working principle of ultrasonic machining process. (10)
- (ii) Discuss about various applications of USM process. (6)
13. (a) (i) Explain the various operating principles involved in Electrical Discharge Machining process. (8)
- (ii) Discuss any four power circuits used for EDM process. (8)

Or

- (b) (i) What is flushing in EDM process? Explain about various flushing techniques. (8)
- (ii) Explain with a neat sketch, the wire cut EDM process. (8)
14. (a) (i) With a neat sketch, explain the chemical machining process. (10)
- (ii) List the advantages and limitations of CHM process. (6)

Or

- (b) (i) Explain with a neat sketch, the electro chemical grinding process. And also list its applications. (12)
- (ii) What is the principle of ECH? (4)

15. (a) With a neat sketch explain the process of LBM along with the effect of the different process parameters. (16)

Or

- (b) (i) Explain the principle of PAM with a neat sketch. (8)  
(ii) Describe the process of EBM with a neat sketch. (8)
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