

UNCONVENTIONAL MACHINING PROCESS (UCMP)

UNIT-1

1. Explain the reasons for the development of unconventional machining process?
2. Discuss about the criteria recommended in selection of this process?
3. What is a mechanical energy method of unconventional machining?
4. What is meant by unconventional machining processes?
5. Differentiate between traditional and untraditional machining?
6. What are the needs for the unconventional machining processes?
7. List the unconventional machining processes which uses thermal or heat energy?
8. Define the function of transducers in ultrasonic machining?
9. What are the major elements of ultrasonic equipments?
10. What are the process criteria of USM?
11. What are the various processes parameters that govern the process criteria?
12. Mention the silent features of USM?
13. Explain the principle of USM with neat sketch?
14. List the commonly used abrasive powder for the tooling of USM and their properties?
15. What are the limitations of USM?

UNIT – 2

1. Explain the principle of ECM process by neat sketch?
2. What are the requirements of tooling materials in ECM process?
3. State the function of electrolyte used in ECM process?
4. List the applications of ECM process?
5. Describe the chemistry involved in ECM process?
6. What are the limitations of ECM process?
7. What are the essential characteristics of electrolyte used in ECM process?
8. Briefly discuss about the effect of high temperature and pressure of electrolyte on the ECM process?

UNIIT – 3

1. Explain the mechanism of material removal in EDM with a help of neat sketch?
2. What are the advantages and applications of EDM?
3. Explain the different types of flushing used in EDM?
4. Explain the effects of various process parameters of EDM?

5. Describe with a neat sketch of working of EDM process?
6. Explain the effect of following parameters in MRR during EDM
 - a) Resistance
 - b) magnitude of current
 - c) capacitance
 - d) differentiateBetween electro discharge grinding and wire EDM process?

UNIT – 4

1. Differentiate between EBM and LBM. Consider at least five aspects?
2. Compare the edge production in EBM and LBM. What are the factors influencing edge for maintain in both the process?
3. Explain variations of temperature with distance from the surface for various pulse durations in EBM?
4. What is the function of electro beam gun?
5. Explain the principle and elements of EBM, also how the work table is protected from getting damaged by electron beam?
6. What is laser? Explain how it is used to machine the materials.

UNIT – 5

1. Explain what is meant by non-transferred and transferred mode of plasma arc? What are the advantages of each?
2. What are the advantages of water circulation in the torch of the PAM?
3. How the material removal rate takes place in chemical machining?
4. Explain the various advantages of types of plasma torches?
5. Explain the working of PAM with neat sketch?
6. Explain the metal removal mechanism, process parameters, accuracy, surface finish of plasma machining.
7. What are the advantages of water circulation in the torch of PAM?

UNIT – 6

1. State the working principle of Abrasive jet machining with a neat sketch?
2. List the advantages of AJM process?
3. What are the factors that affect the material removal rate in AJM process?
4. What are the applications of AJM process?
5. State the working principle of WJM process?
6. Mention the limitations of AJ M.
7. Explain the process parameters that influence WJM?
8. Discuss why the AJM technique, when applied to a low rate of metal removal?
9. Explain the affect of following parameters on the metal removal rate in AJM?