

MICRO-MACHINING PROCESSES

ME-502

Question Bank

1. What is necessity for unconventional machining processes?
2. How non-traditional machining processes are classified?
3. Enlist the requirement that demands the use of advanced machining process.
4. Why unconventional mechanical machining process is not so effective on soft metals like aluminium?
5. (i) Explain the factors that should be considered during the selection of an appropriate unconventional machining process for a given job.
(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.
6. What are the Process parameters affecting the MRR in AJM?
7. What are the different types abrasives used in AJM?
8. Reuse of abrasives is not recommended in AJM. Why?
9. What are the properties of water jet machining about effect cutting action?
10. What are the advantages of WJC over conventional cutting methods?
11. What are the applications of WJM?
12. What are the commonly used additives in WJM?
13. What is optical tracing system?
14. What is ultrasonic machining?
15. What are the advantages of USM?
16. What are the Disadvantages of USM?
17. What are the applications of USM?
18. What is ultrasonic transducer?
19. What are the magnetostrictive materials employed in USM?
20. What is the purpose of concentrator used in USM?
21. (i) Explain the method of AJM with help of schematic diagram.
(ii) Mention the advantages and limitations of AJM.
22. Explain the process parameters in WJM process.
23. With neat sketch explain the process of AJM .List its application and limitations.
24. (i) Explain the process parameters that influence WJM.List the applications and limitations of WJM .
(ii) Briefly discuss the application and limitation of WJM.
25. Explain the USM machine setup and discuss various feed mechanisms.
26. (i) Discuss the influence process parameters and applications of USM.
(ii) Give a note on the various types of transducers.
27. Define electrical discharge machining?
28. What are functions of dielectric fluid used in EDM?
29. Basic requirement of dielectric fluid used in EDM?
30. What the dielectric fluids commonly used in EDM?
31. Name some of the tool material used in EDM?
32. What is the process parameter efficiency the MRR?
33. Explain electrode wear?
34. What are types of power supply circuits used in EDM?
35. What are the design factors to be considered while selecting the machine tool?
36. Explain the process of electrical discharge machining, its process parameters and applications.
37. Describe the wire cut EDM equipment, its working, applications and advantages.
38. (i) With the help of neat sketch, Describe the EDM process.
(ii) Explain briefly advantages of wire EDM process.
39. (i) Explain the classification and characteristics of various spark erosion generators.

- (ii) With help of neat sketch describe the mechanism of material removal in EDM.
40. (i) Explain the working principle, elements and characteristics of wire EDM.
(ii) Explain how the stratified wire works. Also discuss about the recent developments in wire EDM.
41. Define ECM?
42. What are the factors that influence oxidation in ECM?
43. What are the materials used to make the tool electrode?
44. What are the main functions of electrolysis in the ECM?
45. What are the properties are expected from the electrolysis used in the ECM?
46. What are the parameters that affect the MRR?
47. What are the advantages of ECM?
48. What are the limitations of ECM?
49. What are the applications of ECM?
50. Which material is used to make the grinding wheel?
51. What are the advantages of ECG?
52. What are the disadvantages of ECG?
53. What are the limitations of ECG?
54. What is the application of ECG?
55. (i) Describe the chemistry involved in ECM process.
(ii) Briefly discuss about the effect of high temperature and pressure of electrolyte on the ECM process.
(iii) Discuss about the economics of ECM.
56. (i) Describe the working principle and elements of chemical machining. What are the factors on which the selection of a resist for use in chemical machining?
(ii) What are the specific advantages of using chemical machining over electro chemical machining? Give some of the practical applications of chemical machining process.
57. (i) Explain the principle of ECG with sketch.
(ii) List out the advantage of EGC over conventional grinding.
(iii) Mention the product application of ECG.
58. Explain in detail the ECM process with neat sketch and also mention the advantages and application.
59. (i) Describe the process of electrochemical machining.
(ii) Discuss about the electrochemical honing and electrochemical grinding.