Register No.: ..... Name: .....

SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

SIXTH SEMESTER B.TECH DEGREE EXAMINATION (R,S), MAY 2024
MECHANICAL ENGINEERING
(2020 SCHEME)

Course Code : 20MET306

Course Name: Advanced Manufacturing Engineering

Max. Marks : 100 **Duration: 3 Hours**

PART A

(Answer all questions. Each question carries 3 marks)

1. Explain the different stages of sintering in powder metallurgy.
2. Explain the formation of continuous chips with built up edge in metal cutting.
3. Explain any three methods to define a line in APT language.
4. Write any three G codes with their applications.
5. What are the functions of electrolyte in ECM?
6. What are the applications of laser beam machining?
7. Explain Slip and Twinning.
8. Differentiate p waves and s waves.
9. Explain two way abrasive flow machining.
10. Name any three material addition techniques.

PART B

(Answer one full question from each module, each question carries 14 marks)

MODULE I

11. Elucidate the importance of merchant circle diagram. Show how it can be plotted? Mention the different assumptions made. (14)

OR

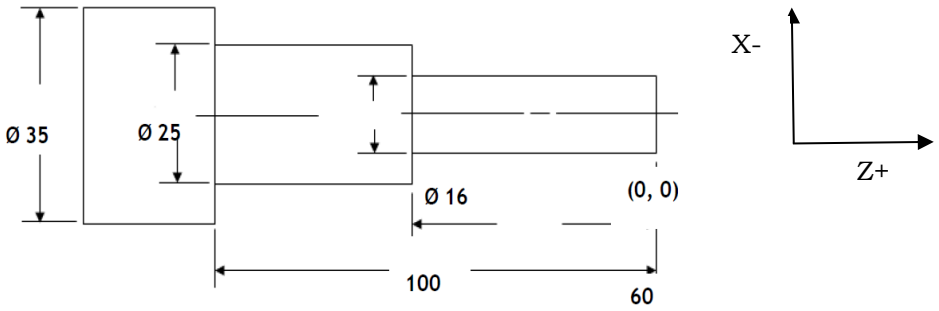
12. Define powder metallurgy technique in manufacturing? Explain any three powder preparation techniques. (14)

MODULE II

13. a) What is meant by interpolation in NC systems? Explain different types of interpolations. (7)
    b) Mention the purpose of miscellaneous functions in part programming. Write any 5 miscellaneous functions with their applications (7)

OR

14. Write a Manual Part Program for the turning operation shown in figure. (Use absoulte positioning, Feed = 125 mm/min) (14)



MODULE III

15. Explain the working of USM with the help of schematic diagram. What are the process parameters influencing the MRR in USM. (14)

OR

16. Explain the working of ECM with the help of schematic diagram. Compare ECM and EDM techniques in machining. (14)

MODULE IV

17. Explain Electromagnetic forming and show that it can be applied to internal, external and surface forming operations (14)

OR

18. Explain the two techniques in Explosive forming process with the help of schematic diagrams. Mention the different applications of Explosive forming process. (14)

MODULE V

19. Name any four advanced finishing processes. Explain any two with the help of schematic diagrams. (14)

OR

20. Explain LIGA process with the help of neat sketches. Write the advantages, limitations and applications of LIGA process (14)

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