

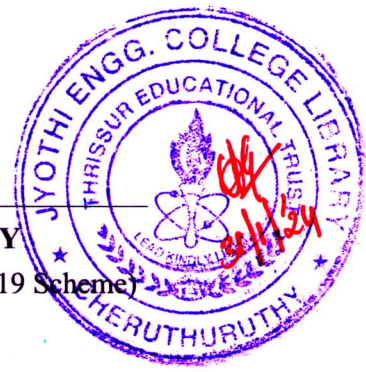
Reg No.: _____

Name: _____

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APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Fourth Semester B.Tech Degree (S, FE) Examination January 2024 (2019 Scheme)



Course Code: RAT204

Course Name: MANUFACTURING PROCESSES

Max. Marks: 100

Duration: 3 Hours

PART A

(Answer all questions; each question carries 3 marks)

Marks

- | | | |
|----|---|---|
| 1 | Interpret forging. Write any 4 advantages of forging? | 3 |
| 2 | Elucidate about different types of rolling defects. | 3 |
| 3 | Define heat affected zone? What is its importance in producing a crack free weld? | 3 |
| 4 | Why welding is important than other joining process? | 3 |
| 5 | Why Cast Iron is preferred for Lathe bed. | 3 |
| 6 | Explain any two work holding devices on milling machine. | 3 |
| 7 | Write any 3 Post processor statement used in APT and its functions. | 3 |
| 8 | What is the function of M-code in manual part programming? Write any five. | 3 |
| 9 | Which are the factors affecting MRR in EBM. | 3 |
| 10 | Write the advantages of laser beam machining. | 3 |

PART B

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

Module -1

- | | | |
|----|--|----|
| 11 | a) With the help of neat sketches, explain any 4 types of commonly used patterns | 8 |
| | b) Define allowances in pattern making. Describe different allowances provided by pattern manufacturers. | 6 |
| 12 | a) Why connecting rod of a diesel engine is manufactured with forging techniques? With the help of neat sketches explain the different steps for making connecting rod of a diesel engine. | 10 |
| | b) Write short notes on Hot and Cold Rolling process. | 4 |

Module -2

- | | | |
|----|--|---|
| 13 | a) Explain operation, equipment and applications of ultrasonic welding. | 7 |
| | b) With a neat sketch explain the Submerged Arc Welding. What are the applications of this process | 7 |

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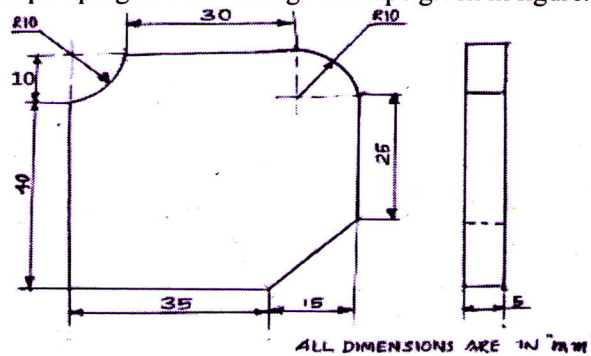
- 14 a) Explain how Plasma arc Welding is carried out. What are the applications of this process 7
b) Describe two types of electrical resistance welding processes with neat sketches 7

Module -3

- 15 a) With a neat diagram explain how a lathe is specified. 6
b) What are the different milling cutters used? Explain any three based on the operation they performed. 8
- 16 a) Illustrate the milling cutter nomenclature with a neat diagram. 6
b) Write an example for designation of conventional abrasive grinding wheel. Explain the terms. 8

Module -4

- 17 a) Write a manual part program for milling the shape given in figure. 10



- b) Differentiate between open loop system and closed loop system in NC control 4
- 18 a) Discuss the various components of information control system in CNC unit. 8
b) Describe machining centres and automatic tool changing mechanisms in CNC 6

Module -5

- 19 a) Explain Ultra Sonic Machining with a neat figure .Write its advantages and disadvantages 7
b) Describe about WEDM. Write the applications of it. 7
- 20 a) What is the importance of sintering in powder metallurgical process? What are the different sintering mechanisms 7
b) Explain abrasive flow finishing with neat sketches. Write its applications. 7
