



B.E DEGREE EXAMINATIONS: APRIL / MAY 2023

(Regulation 2018)

Fifth Semester

MECHATRONICS ENGINEERING

U18MCI5202: Manufacturing Technology

COURSE OUTCOMES

- CO1:** Select and justify appropriate casting methods.
- CO2:** Summarize various bulk deformation processes and explain the working machineries.
- CO3:** Describe the working principles of machines and various machining processes.
- CO4:** Choose a suitable metal joining process for a given application.
- CO5:** Perform various lathe and drilling operation for a given drawing.
- CO6:** Perform machining operation in special purpose machine.

Time: Three Hours

Maximum Marks: 100

**Answer all the Questions:-
PART A (10 x 2 = 20 Marks)
(Answer not more than 40 words)**

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|--|-----------------------|
| 1. Define casting process. | CO1 [K ₂] |
| 2. List the few casting defects. | CO1 [K ₂] |
| 3. Compare hot rolling and cold rolling process. | CO2 [K ₂] |
| 4. How forging operations performed? | CO2 [K ₂] |
| 5. Give the advantages of conventional over advanced machining. | CO3 [K ₂] |
| 6. State the functions of welding process. | CO4 [K ₂] |
| 7. Write down the various types of metal joining. | CO4 [K ₂] |
| 8. Which types of tool holders are suitable for lathe and list the types ? | CO5 [K ₂] |
| 9. List the various types of grinding machines. | CO6 [K ₂] |
| 10. Give the significances of milling machine. | CO6 [K ₂] |

Answer any FIVE Questions:-
PART B (5 x 16 = 80 Marks)
(Answer not more than 400 words)

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|-----|----|---|----|-----|-------------------|
| 11. | a) | Explain the properties of moulding sand suitable for castings? | 08 | CO1 | [K ₂] |
| | b) | State the important factors to be considered for choosing the pattern material. | 08 | CO1 | [K ₂] |
| 12. | | Explain the sheet metal types of operations with simple sketch and mentions their advantages and disadvantages. | 16 | CO2 | [K ₂] |
| 13. | | Explain the rolling mills types with neat sketch. | 16 | CO3 | [K ₂] |
| 14. | | Explain the working of an arc welding process and mention four applications of the process. | 16 | CO4 | [K ₂] |
| 15. | | Explain about the lathe machine working process and also brief the operations performed in lathe. | 16 | CO5 | [K ₂] |
| 16. | | Brief quick return mechanisms used in shaper with a neat sketch? | 16 | CO6 | [K ₂] |
