



B.E DEGREE EXAMINATIONS: NOV / DEC 2024

(Regulation 2018)

Fourth Semester

AUTOMOBILE ENGINEERING

U18AUI4203: Manufacturing Technology

COURSE OUTCOMES

- CO1: Outline the various molding and special casting processes and identify the defects that occur during the process.
- CO2: Familiarize the Forming and Powder metallurgy processes.
- CO3: Demonstrate the metal joining processes and identify the defects.
- CO4: Apply knowledge and skill on Conventional Machining processes.
- CO5: Explain the various Unconventional Machining processes.
- CO6: Select the appropriate processes used for Automotive Components manufacturing.

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. Outline and arrange the sequential steps involved in the Casting Process? | CO1 | [K ₁] |
| 2. Analyze the advantages and limitations of the Casting Process. | CO1 | [K ₂] |
| 3. Explain the concept of wire drawing. | CO3 | [K ₂] |
| 4. Discuss about the steps involved in Powder Metallurgy process. | CO2 | [K ₂] |
| 5. Infer the application of welding process. | CO3 | [K ₂] |
| 6. Mention the different types of chips. | CO3 | [K ₂] |
| 7. Recall different operation performed in lathe. | CO4 | [K ₂] |
| 8. List out the factors to be considered for rolling process. | CO3 | [K ₂] |
| 9. What is ultrasonic machining? | CO5 | [K ₂] |
| 10. Write advantages of unconventional machining process. | 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) | With the help of a neat sketch summarize the following process | 8 | CO1 | [K ₃] |
| | | i. CO ₂ Molding | | | |
| | | ii. Centrifugal Casting Process | | | |
| | b) | Categorize and discuss about casting defects and its reasons. | 8 | CO1 | [K ₂] |
| 12. | a) | Infer the Principles of Hydroforming process with a help of a neat sketch. | 8 | CO2 | [K ₂] |
| | b) | Explain the advantage, limitation and principals involved in Powder Metallurgy process. | 8 | CO2 | [K ₂] |
| 13. | a) | Infer about Plasma arc welding process with a neat sketch. | 8 | CO3 | [K ₂] |
| | b) | Illustrate about laser beam welding process with a neat sketch. | 8 | CO3 | [K ₂] |
| 14. | a) | Describe about Principle and geometry of single point cutting tool. | 8 | CO4 | [K ₂] |
| | b) | Summarize about the construction and working principle of the Lathe-Capstan. | 8 | CO4 | [K ₂] |
| 15. | a) | Illustrate the working principle of Abrasive Jet Machining with a help of a neat sketch. | 8 | CO5 | [K ₂] |
| | b) | With the help of neat sketch discuss about Electrical Discharge machining process. | 8 | CO5 | [K ₂] |
| 16. | a) | Illustrate about Open die Forging and closed die forging process. | 8 | CO3 | [K ₂] |
| | b) | Explain about application of casting in automobile Industry. | 8 | CO6 | [K ₂] |
