



B.E. DEGREE EXAMINATIONS: APRIL / MAY 2023

(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. Recall the functions of core. | CO1 [K ₂] |
| 2. Classify molding machines. | CO1 [K ₂] |
| 3. Tell us about wire drawing process. | CO2 [K ₂] |
| 4. Illustrate the sequence of Conventional Powder metallurgy process. | CO2 [K ₂] |
| 5. Outline fusion welding process. | CO3 [K ₂] |
| 6. List down the limitations of welding process. | CO3 [K ₂] |
| 7. How does chip formation occurs in metal cutting process? | CO4 [K ₂] |
| 8. Draw the nomenclature of cutting tool geometry. | CO4 [K ₂] |
| 9. List the advantages of unconventional machining process. | CO5 [K ₂] |
| 10. What are the applications of electrochemical machining? | CO5 [K ₂] |

Answer any FIVE Questions:-

PART B (5 x 4 = 20 Marks)

(Answer not more than 80 words)

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| 11. What are the types of pattern allowance? | CO1 [K ₂] |
| 12. Organize the steps involved in sand casting. | CO1 [K ₂] |

13. Explain the principles of hydroforming process. CO3 [K₂]
14. Elaborate about the application of welding in automobile. CO4 [K₂]
15. List out the factors affecting life of the cutting tool. CO5 [K₂]
16. What are the different types of cutting tools? CO5 [K₂]

Answer any FIVE Questions:-
PART C (5 x 12 = 60 Marks)
(Answer not more than 300 words)

17. a) What are the defects that occur in products made by casting process? Explain with neat sketch. CO1 [K₂]
- b) Draw a neat sketch and discuss different types of molding machines. CO1 [K₂]
18. a) Briefly discuss about different types of forging process with neat sketch. CO2 [K₂]
- b) Summarize rolling and extrusion process with neat sketch. CO2 [K₂]
19. a) With the help of neat sketch, discuss about CO3 [K₂]
- I. Oxy-acetylene welding
- II. Metal arc welding
- b) Summarize about Resistance arc welding with the help of neat sketch. CO3 [K₂]
20. a) Discuss the construction of electron beam welding with the help of a neat sketch. CO3 [K₂]
- b) Infer about Electric discharge machining process with neat sketch. CO3 [K₂]
21. a) Elaborate about single point cutting tool with the help of neat sketch. CO4 [K₂]
- b) Discuss the construction and working of Capstan Lathe. CO4 [K₂]
22. a) Outline the construction and working of Abrasive jet machining, CO5 [K₂]
- b) Illustrate about Plasma arc machining process with the help of neat sketch. CO5 [K₂]
