



**B.E/B.TECH DEGREE EXAMINATIONS: APRIL /MAY 2024**

(Regulation 2018)

Fourth Semester

**AUTOMOBILE ENGINEERING**

U18AUI4203: Manufacturing Technology

**COURSE OUTCOMES**

- CO1: Outline the various moulding 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. Identify and give details on the casting process used for the manufacturing of a cast iron pipe.                              | CO1 | [K <sub>3</sub> ] |
| 2. Name and explain the casting process used for the manufacture of intricate components.  | CO1 | [K <sub>1</sub> ] |
| 3. Give any two limitations of the hot extrusion process   | CO2 | [K <sub>1</sub> ] |
| 4. Why does the powder metallurgy process used for the making of the components which contains tungsten or platinum as elements? | CO2 | [K <sub>1</sub> ] |
| 5. Compare between the brazing and the soldering processes   | CO3 | [K <sub>2</sub> ] |
| 6. Give any two functions of the flux used in the arc welding process  | CO3 | [K <sub>1</sub> ] |
| 7. Distinguish milling and down milling  | CO4 | [K <sub>2</sub> ] |
| 8. Write any two differences between turret and capstan Lathe  | CO4 | [K <sub>2</sub> ] |
| 9. List the properties of electrolyte used in Electro Chemical Machining (ECM)   | CO5 | [K <sub>1</sub> ] |
| 10. Explain the mechanism of material removal rate in Electron Beam Machining  | CO5 | [K <sub>1</sub> ] |

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

11.	a)	Explain the hot chamber die casting process with a neat figure.	10	CO1	[K <sub>1</sub> ]
	b)	Explain various casting defects with neat sketches	6	CO1	[K <sub>1</sub> ]
12.	a)	Illustrate various steps involved in the making of components by using the powder metallurgy process	10	CO2	[K <sub>2</sub> ]
	b)	Give the various advantages of powder metallurgy process.	6	CO2	[K <sub>1</sub> ]
13.	a)	Explain the submerged arc welding process with a neat sketch	10	CO3	[K <sub>1</sub> ]
	b)	Describe the principle of arc welding process	6	CO3	[K <sub>2</sub> ]
14.	a)	With a neat sketch explain the principal parts of a milling machine	10	COL	[K <sub>1</sub> ]
	b)	With a neat sketch, explain various operations performed in drilling machine	6	COL	[K <sub>1</sub> ]
15.	a)	With a neat sketch explain the tool nomenclature of a single point cutting tool	4	CO4	[K <sub>1</sub> ]
	b)	With a neat sketch, illustrate working and various operations performed in grinding machine	12	CO4	[K <sub>2</sub> ]
16.	a)	With a neat sketch explain Laser Beam Machining process	10	CO5	[K <sub>1</sub> ]
	b)	Identify various process parameters of EDM	6	CO5	[K <sub>3</sub> ]

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