



B.E. DEGREE EXAMINATIONS: APRIL / MAY 2023

(Regulation 2018)

Second Semester

AERONAUTICAL ENGINEERING

U18AEI2201: Manufacturing Process

COURSE OUTCOMES

CO1: Describe the different casting processes starting from the part design.

CO2: Explain the basic use and operation of various welding methods

CO3: Describe metal cutting processes using conventional machines.

CO4: Explain the principle of working, mechanism of metal removal in unconventional machining processes.

CO5: Explain the principle of working and mechanism of various types of forging processes.

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. Classify various types of patterns. | CO1 [K ₂] |
| 2. List out various pattern allowances. | CO1 [K ₂] |
| 3. State the principle of gas welding. | CO2 [K ₁] |
| 4. Outline about various welding defects. | CO2 [K ₂] |
| 5. Compare up milling and down milling. | CO3 [K ₂] |
| 6. List any four methods by which taper turning is done in a center lathe. | CO3 [K ₂] |
| 7. Recall the need for unconventional machining processes. | CO4 [K ₁] |
| 8. Outline main components of electrical discharge machining process. | CO4 [K ₂] |
| 9. List out various tools used in forging operations. | CO5 [K ₂] |
| 10. Sketch the figure of three high rolling mill. | CO5 [K ₁] |

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

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|-----|---|----|-----|-------------------|
| 11. | Explain the steps involved in two box molding process with citing all the parts in the diagram. | 16 | CO1 | [K ₃] |
| 12. | a) Discuss the procedure of investment molding process along with neat sketch | 10 | CO1 | [K ₂] |
| | b) Outline various casting defects with their remedies. | 06 | CO1 | [K ₂] |
| 13. | a) Illustrate the process of submerged arc welding process with its limitations. | 10 | CO2 | [K ₂] |
| | b) Compare soldering and brazing process. | 06 | CO2 | [K ₂] |
| 14. | With suitable sketch, explain the different parts and the features of radial drilling machine along with its specification. | 16 | CO3 | [K ₄] |
| 15. | Elaborate the working principle and applications of abrasive jet machining along with its process parameters. | 16 | CO4 | [K ₃] |
| 16. | a) Explain the process of forward and backward extrusion with neat sketches. | 10 | CO5 | [K ₃] |
| | b) Discuss about wire drawing operation. | 06 | CO5 | [K ₃] |
