**18ME305**

**Hall Ticket Number:**

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| **II/IV B.Tech (Regular / Supplementary) DEGREE EXAMINATION** | | | |
| **February, 2021** | **Mechanical Engineering** | | |
| **Third Semester** | **Basic Manufacturing Processes** | | |
| **Time:** Three Hours | | **Maximum :** 50 Marks | |
| *Answer ALL Questions from PART-A.* | | | (1X10 = 10 Marks) |
| *Answer* ***ANY FOUR*** *questions from PART-B.* | | | (4X10=40 Marks) |
| **Part - A** | | | |

**1.** Answer all questions (1X10=10 Marks)

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| a) | Write the uses of cores in casting |
| b) | Write short notes on directional solidification |
| c) | What is green sand in casting? |
| d) | Define gain fineness number (GFN) |
| e) | What are the advantages of permanent mould casting? |
| f) | Differentiate brazing and soldering |
| g) | What is thermit welding |
| h) | What is the function of flux coating on consumable electrode? |
| i) | Differentiate blanking and punching |
| j) | What is the importance of clearance in blanking and punching operations? |
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**Part - B**

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| 2.a) | Discuss different patterns allowances with neat diagrams | 5M |
| 2.b) | Write any 5 properties of moulding sand used in casting and explain | 5M |

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| 3.a) | Write brief notes on: i) Split pattern, ii) match plate pattern and sweep pattern with neat diagrams | 5M |
| 3.b) | Write and discuss steps involved in sand casting | 5M |

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| 4.a | Explain investment casting process with neat diagrams | 5M |
| 4.b | What are the design considerations for designing of gating system in casting | 5M |

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| 5.a | Explain i). Shell moulding process and ii) CO2 casting process | 5M |
| 5.b | Define and write the reasons and remedies for casting defects: i) blow holes, ii) misrun, iii) cold shut, iv) metal penetration and v) hot tears | 5M |

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| 6.a | Explain TIG welding process with neat diagrams | 5M |
| 6.b | Discuss oxy-acetylene flame welding and explain the three types of flames | 5M |

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| 7.a | Discuss: i) Laser beam welding and ii) Resistance spot welding | 5M |
| 7.b | Write the reasons and remedies of any 5 welding defects | 5M |

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| 8.a | Differentiate hot working and cold working processes | 5M |
| 8.b | With neat diagrams, explain different types of rolling mills | 5M |

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| 9.a | Write brief notes on electrohydraulic forming with neat diagram | 5M |
| 9.b | Compare direct extrusion and indirect extrusion processes | 5M |

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