**Hall Ticket Number: 20ME302**

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| **II/IV B.Tech (Regular) DEGREE EXAMINATION** | | | |
| **March, 2022** | **Department of Mechanical Engineering** | | |
| **Third Semester** | **Basic Manufacturing Processes** | | |
| **Time:** Three Hours | | **Maximum:** 70 Marks | |
| *Answer Question No.1 compulsorily.* | | | (1X14 = 14 Marks) |
| *Answer ONE question from each unit.* | | | (4X14=56 Marks) |
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| 1. | | Answer all questions. | | | (14X1=14 Marks) | | | | |
|  | | a) | | List any four advantages of casting. | **CO1** | | **L1** | |  |
|  | | b) | | Write about the principles of Gating system? | **CO2** | | **L1** | |  |
|  | | c) | | List out materials used for pattern making. | **CO1** | | **L2** | |  |
|  | | d) | | What is sand molding process? | **CO1** | | **L2** | |  |
|  | | e) | | What are the types of molding sand? | **CO1** | | **L1** | |  |
|  | | f) | | List any two causes for the casting defects. | **CO2** | | **L2** | |  |
|  | | g) | | What is the principle of resistance welding? | **CO3** | | **L2** | |  |
|  | | h) | | What are the 3 types of flames in oxy-acetylene gas welding? | **CO3** | | **L1** | |  |
|  | | i) | | What is difference between arc and gas welding? | **CO3** | | **L1** | |  |
|  | | j) | | Differentiate straight polarity and reverse polarity DC supply in welding | **CO3** | | **L2** | |  |
|  | | k) | | What are the advantages of rolling? | **CO4** | | **L1** | |  |
|  | | l) | | How is embossing done? | **CO4** | | **L2** | |  |
|  | | m) | | What is deep drawing and where is it used? | **CO4** | | **L1** | |  |
|  | | n) | | What is the difference between blanking and punching operation? | **CO4** | | **L2** | |  |
| **UNIT I** | | | | | | | | | |
| 2. | a) | | What are different types of patterns? Explain them with neat diagrams. | | | **CO1** | | **L1** | **7M** |
|  | b) | | Describe the pattern allowances with neat diagrams | | | **CO1** | | **L1** | **7M** |
| **(OR)** | | | | | | | | | |
| 3. | a) | | Discuss the steps involved in Moulding Procedure. | | | **CO1** | | **L2** | **7M** |
|  | b) | | Explain about the types of pattern materials. What are the Advantages and disadvantages of each of them? | | | **CO1** | | **L1** | **7M** |
| **UNIT II** | | | | | | | | | |
| 4. | a) | | Briefly explain investment casting with neat sketch. Also give its limitations and  applications. | | | **CO2** | | **L1** | **7M** |
|  | b) | | What are the design considerations of gating system in casting? | | | **CO2** | | **L2** | **7M** |
| **(OR)** | | | | | | | | | |
| 5. | a) | | [What is Centrifugal Casting?](https://mechanicaljungle.com/what-is-centrifugal-casting/#What_Is_Centrifugal_Casting) What are the advantages and disadvantages and applications of Centrifugal Casting? | | | **CO2** | | **L1** | **10M** |
|  | b) | | What is Fettling in Casting Process.What is the significance of Fettling. | | | **CO2** | | **L2** | **4M** |
| **UNIT III** | | | | | | | | | |
| 6. | a) | | List out and explain the causes and remedies for welding defects. | | | **CO3** | | **L1** | **7M** |
|  | b) | | Discuss TIG welding with neat diagrams. | | | **CO3** | | **L2** | **7M** |
| **(OR)** | | | | | | | | | |
| 7. | a) | | Explain the principle, advantages and applications of submerged arc welding. | | | **CO3** | | **L1** | **7M** |
|  | b) | | Describe the gas welding process with a neat sketch. | | | **CO3** | | **L2** | **7M** |
| **UNIT IV** | | | | | | | | | |
| 8. | a) | | Differentiate cold working and hot working. | | | **CO4** | | **L2** | **7M** |
|  | b) | | Discuss the Working Principle and types of Extrusion process. What are the advantages disadvantages and applications of Extrusion? | | | **CO4** | | **L1** | **7M** |
| **(OR)** | | | | | | | | | |
| 9. | a) | | What is the high energy rate forming process? List the high energy rate forming processes and Discuss about any one of them. | | | **CO4** | | **L1** | **7M** |
|  | b) | | How many types of rolling mills are there? Explain them with the help of sketches. | | | **CO4** | | **L2** | **7M** |

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