**20ME302**

**Hall Ticket Number:**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **II/IV B.Tech (Regular / Supplementary) DEGREE EXAMINATION** | | | |
| **February, 2023** | **Mechanical Engineering** | | |
| **Third Semester** | **Basic Manufacturing Processes** | | |
| **Time:** Three Hours | | **Maximum:7**0 Marks | |
| *Answer Question No.1 compulsorily.* | | | (14X1 = 14 Marks) |
| *Answer ONE question from each unit.* | | | (4X14=56 Marks) |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1. | a) | | | What is a molding material? | CO1 | L1 |  |
|  | b) | | | What is metal casting? | CO1 | L1 |  |
|  | c) | | | How many types of Moulding sand are there? | CO1 | L2 |  |
|  | d) | | | What are the types of gating? | CO2 | L1 |  |
|  | e) | | | Write the importance of core. | CO2 | L1 |  |
|  | f) | | | List any four casting defects. | CO2 | L2 |  |
|  | g) | | | State the principle of resistance welding? | CO3 | L1 |  |
|  | h) | | | List the 3 types of flames? | CO3 | L1 |  |
|  | i) | | | Write any four causes of welding defects. | CO3 | L1 |  |
|  | j) | | | State the principle of submerged arc welding. | CO3 | L1 |  |
|  | k) | | | Mention any two types of Sheet metal working operations. | CO4 | L3 |  |
|  | l) | | | What is Stand of distance.? | CO4 | L1 |  |
|  | m) | | | Define the process of blanking. | CO4 | L1 |  |
|  | n) | | | List any two forging defects. | CO4 | L1 |  |
|  | | **Unit - I** | | | | | |
| 2. | a) | | List and explain the considerations for selecting pattern materials? | | CO1 | L1 | 7M |
|  | b) | | Describe the common tests performed on moulding sands? Explain. | | CO1 | L2 | 7M |
|  | | **(OR)** | | | | | |
| 3. | a) | | Discuss the important properties required for a sand to be used as mould material | | CO1 | L2 | 7M |
|  | b) | | List out and explain various pattern allowances with sketches. | | CO1 | L2 | 7M |
|  | | **Unit - II** | | | | | |
| 4. | a) | | Briefly explain investment casting with neat sketch. Also give its limitations and applications. | | CO2 | L3 | 7M |
|  | b) | | What is the design requirement for the gating system? What are the important basic elements of gating system? | | CO2 | L2 | 7M |
|  | | **(OR)** | | | | | |
| 5. | a) | | Explain hot chamber die casting processes. | | CO2 | L1 | 7M |
|  | b) | | [What is Centrifugal Casting?](https://mechanicaljungle.com/what-is-centrifugal-casting/#What_Is_Centrifugal_Casting) What are the advantages and disadvantages of Centrifugal Casting? | | CO2 | L1 | 7M |
|  | | **Unit - III** | | | | | |
| 6. | a) | | Explain different types of resistant welding. Explain with neat sketch any one type. | | CO3 | L2 | 7M |
|  | b) | | Describe the gas welding process with a neat sketch. | | CO3 | L1 | 7M |
|  | | **(OR)** | | | | | |
| 7. | a) | | Distinguish between TIG and MIG. | | CO3 | L4 | 7M |
|  | b) | | Explain the working principle of Laser beam welding. What are the advantages and disadvantages of LBW. | | CO3 | L2 | 7M |
|  | | **Unit - IV** | | | | | |
| 8. | a) | | Discuss i) explosive forming ii) electromagnetic forming with neat diagrams. | | CO4 | L2 | 7M |
|  | b) | | What is shear and where it is provided in case of punching and blanking? Why is shear angle provided in a shearing operation? | | CO4 | L2 | 7M |
|  | | **(OR)** | | | | | |
| 9. | a) | | Discuss the Working Principle and types of Extrusion process. What are the advantages disadvantages and applications of Extrusion? | | CO4 | L4 | 7M |
|  | b) | | Explain about coining and spinning in detail? | | CO4 | L2 | 7M |

****