Sub Code: R2021033 **R20** **Set No. 1**

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY-GURUJADA VIZIANAGARAM**
**II B. Tech I Semester Supplementary Examinations, November – 2024**
**PRODUCTION TECHNOLOGY**
**(Mechanical Engineering)**

**Time: 3 hours** **Max. Marks: 70**

***Answer any FIVE Questions***
***ONE Question from Each unit***
***All Questions Carry Equal Marks***
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| 1 | a) | Why is match plate pattern is much easier to use than a standard pattern? Explain. | [7] |
| | b) | Define core. What are the characteristics of core. | [7] |
| | | (OR) | |
| 2 | a) | Describe the method used for determining the permeability of any moulding sand. | [7] |
| | b) | List out the steps involved in making a casting. Explain them in detail with the help of neat sketches. | [7] |
| 3 | a) | Define gating system. What are the various design requirements of a gating system. | [7] |
| | b) | Explain various steps for making a casting by die casting process. | [7] |
| | | (OR) | |
| 4 | a) | Explain the process of cooling and solidification in casting. | [7] |
| | b) | What is investment casting? Mention its advantages, limitations and applications. | [7] |
| 5 | a) | Describe Friction stir welding with neat diagram. Write its advantages, disadvantages and applications. | [7] |
| | b) | Describe the TIG welding process with neat sketch. | [7] |
| | | (OR) | |
| 6 | a) | Describe laser welding with neat diagram. | [7] |
| | b) | Why do properties vary widely in most welding heat affected zones? | [7] |
| 7 | a) | Explain recrystallization and grain growth processes and their effect on properties of a metal worked component. | [7] |
| | b) | Explain the types of deflections that rolls undergo during working. | [7] |
| | | (OR) | |
| 8 | a) | What are the advantages and disadvantages of forging? | [7] |
| | b) | Explain the working of Impact extrusion with a neat sketch | [7] |
| 9 | a) | Explain the process of deep drawing with neat sketch | [7] |
| | b) | Explain with a suitable diagram, the working principle of Electromagnetic Forming. | [7] |
| | | (OR) | |
| 10 | a) | What are the various types of presses? Explain detail. | [7] |
| | b) | Explain the process of rubber pad forming. Write its advantages, disadvantages. | [7] |

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