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| C:\Users\ASHOKMH\Dropbox\Academic coordinator work\Formats\Latest logo.jpeg***An ISO 21001:2018 Certified Institution*** | **S. S. Education Trust’s CET Code: E-175 (UG)/T-942 (PG)****S. G. BALEKUNDRI INSTITUTE OF TECHNOLOGY****Shivabasavanagar, Belagavi- 590 010, Karnataka- India**Office: 0831-2407172, 2554559 Fax: 0831-2407152 Website: www.sgbit.edu.in Approved by AICTE New Delhi Recognised by Govt. of Karnataka Affiliated to V T U, Belagavi |
| **Department of Mechanical Engineering****Accrediated by NBA** | Email: hod-mech@sgbit.edu.in, Dept. Extn.: 513 |

Department of Mechanical Engineering

## Assignment no 1

B.E (Mechanical Engineering)

Code: 21ME32 Course: Metal Casting Forming and Joining Process

Date: 10-01-2023 Semester:III

Course Coordinators: Assit. Prof. Gurudutt Ghadi

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| Q. No. |  | CO | RBT | PO |
| 1 | With neat flowchart explain the steps involved in casting process | CO1 | L1 | 1 |
| 2 | Explain different types of pattern with neat sketches | CO1 | L1 | 1 |
| 3 | With neat sketch describe the steps involved in preparation of sand mould. | CO1 | L1 | 1 |
| 4 | Discuss the desirable properties of moulding sand. | CO1 | L1 | 1 |
| 5 | Briefly discuss the importance of binders and additives in Sand Moulding | CO1 | L1 | 1 |
| 6 | Explain with neat sketch methods of making cores | CO1 | L2 | 1 |
| 7 | Explain with a neat sketch of gating system showing all the elements | CO1 | L1 |  |
| 8 | With a neat sketch explain the working principle of jolt-squeeze and Sand slinger machine | CO2 | L2 | 1 |
| 9 | Explain with neat sketch the working of Cupola furnace and also explain briefly the zones in Cuploa | CO2 | L2 | 1 |
| 10 | With neat sketch explain shell moulding and investment shell moulding process. Mention its advantages and disadvantages | CO2 | L1 | 1 |
| 11 | With neat sketch explain working of Continuous casting, plunger type and air injection type die casting process with neat sketch. | CO2 | L1 | 1 |
| 12 | With a neat sketch explain the constructional features and working of Coreless induction furnace and electrical arc furnace | CO2 | L1 | 1 |

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| COURSE OUTCOMES (COs) |
| CO.1 | Select appropriate primary manufacturing process and related parameters for obtaining initial shape and size of components |
| CO.2 | Design and develop adequate tooling linked with casting, welding and forming operations |
| CO.3 | Appreciate the effect of process parameters on quality of manufactured components |
| CO.4 | Demonstrate various skills in preparation of molding sand for conducting tensile, shear and compression tests using Universal sand testing machine. |
| CO.5 | Demonstrate skills in preparation of forging models involving upsetting, drawing and bending operations. |
| CO.6 | Demonstrate skills in preparation of Welding models. |

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| Course coordinator | Dept IQSC coordinator | H.O.D |
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