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**B.E / B.Tech PRACTICAL SEMESTER EXAMINATIONS, DECEMBER 2020**

Third Semester

Mechanical Engineering

**ME8361- Manufacturing Technology Laboratory-I**

(Common to Industrial Engineering and Management , Industrial Engineering, Manufacturing Engineering and Mechanical Engineering (Sandwich)

(Regulation 2017)

Time : 3 Hours Max. Marks 100

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| **Aim/Principle/Apparatus required/Procedure/ Result** | **Drawing/ Calculation** | **Fabrication of Job** | **Viva-Voce** | **Record** | **Total** |
| **20** | **20** | **40** | **10** | **10** | **100** |

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| **(The dimensions of the job can be changed based on length and diameter)** | |
| 1. | Estimate the total machining time by machining a MS steel rod in a lathe machine and enumerate various parameters that can be obtained. |
| 2. | (i) List down the various methods of taper turning in a lathe machine.  (ii) Conduct Taper turning by compound rest method on a work piece for a length of 100mm where large diameter is 50mm and small diameter is 40mm. What is the angle of swivel of the compound rest? |

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| 3. | Perform taper turning operation on the given work piece by tailstock Set over method as shown in **Fig.** (All dimensions are in mm) |
| 4. | By taper turning attachment method, Perform taper turning operation on the given work piece **as** shown in **Fig.** (All dimensions are in mm) |
| 5. | Machine the given component as shown in fig and calculate the machining time. |
| 6. | Conduct Experiment on lathe for External Thread cutting operation. (All dimensions are in mm) |
| 7. | Machine **External** Thread cutting of pitch 2.5mm and knurling for the given cylindrical rod as per the given dimensions. (All dimensions are in mm) |
| 8. | Make the work piece as per given shape and size using various operations of lathe machine. (All dimensions are in mm) |

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| 9. | Conduct experiment on internal thread cutting as shown below.  (All dimensions are in mm) |
| 10. | Obtain Drilling, Boring and internal threading of pitch 3 mm for the given cylindrical  rod as per the given dimensions. (All dimensions are in mm) |

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| 11. | Estimate the machining time parameters by Conducting experiment on internal thread cutting as shown below. (All dimensions are in mm) |
| 12. | Shape the Component from round shape to square shape as per the dimensions shown in figure. (All dimensions are in mm) |
| 13. | Shape the Component from round shape to Hexagon shape as per the dimensions shown in figure. (All dimensions are in mm) |
| 14. | Perform Eccentric Turning operation on the given work piece to obtain a job as per given dimension shown in **Fig.** (All dimensions are in mm) |
| 15. | Perform Eccentric Turning operation on the given work piece to obtain a job as per given dimension shown in **Fig.** (All dimensions are in mm) |

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| 16. | Perform an Eccentric Turning operation on the given work piece using a lathe as per the dimensions  given in figure. (All dimensions are in mm) |
| 17. | Perform the machining in shaper to obtain hexagonal head as per given dimension from the  given Round M.S Rod shown in **Fig. (All Dimensions are in mm)** |
| 18. | (i) Enumerate the purpose of core in the sand mould.  (ii) Prepare a sand mould with a simple solid piece pattern. |
| 19. | Make a rectangular shaped sheet metal tray for a length of 70 mm, breadth of 50 mm and for a height of 25 mm. |

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| 20. | By using Various Sheet metal Fabrication tools, Make the funnel from the given 1.5 thick MS sheet as shown in the figure, (All dimensions are in mm) |
| 21. | Fabricate the sheet metal tray for the given sheet metal as per the required dimensions. |

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| 22. | Make the T-joint from the given 6mm Thick MS plate by Obtaining gas metal arc welding. (All dimensions are in mm) |
| 23. | Make the Lap joint from the given 5mm Thick 2Nos MS plate by using arc welding. (All dimensions are in mm) |
| 24. | 1. With suitable diagrams, list down the steps involved in preparing a green sand mould. 2. With the help of moulding tools and green sand prepare a green sand mould of a gear pattern. |
| 25. | With the help of tumble pattern shown in figure, prepare a green sand mould.  Image result for gear pattern image in casting |
| 26. | 1. State the purpose of Loose piece Pattern in a mould. 2. Prepare a green sand mould with the help of a gear pattern. |