**18ME604**

**Hall Ticket Number:**

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| **III/IV B.Tech (Regular) DEGREE EXAMINATION** | | | |
| **August, 2021** | **Mechanical Engineering** | | |
| **Sixth Semester** | **Manufacturing Technology** | | |
| **Time:** Three Hours | | **Maximum: 5**0 Marks | |
| *Answer Question No. 1 Compulsorily.* | | | (10X1 = 10 Marks) |
| *Answer* ***ANY ONE*** *question from each Unit.* | | | (4X10=40 Marks) |

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| 1. | a) | What is fundamental deviation? | CO1 | |  |
|  | b) | Give an example of transition fit? | CO1 | |  |
|  | c) | List out any four angular measuring instruments? | CO2 | |  |
|  | d) | Name the various types of pitch errors found in screw? | CO2 | |  |
|  | e) | What is meant by alignment test on machine tools? | CO2 | |  |
|  | f) | Sketch Template Jig? | CO3 | |  |
|  | g) | What is meant by fool proofing in the design of a jig? | CO3 | |  |
|  | h) | What is the purpose of setting block on a milling fixture? | CO3 | |  |
|  | i) | Write the formula for Bend allowance | CO4 | |  |
|  | j) | What causes spring back in bending | CO4 | |  |
| **Unit - I** | | | | | |
| 2. | a) | Determine limit dimensions for a clearance fit between mating parts of diameter 40 mm, providing a minimum clearance of 0.10mm with a tolerance on the hole equal to 0.025 mm and on shaft 0.05 mm using both Hole basis and Shaft basis systems. | CO1 | **5M** | |
|  | b) | What types of measuring systems are used for angle measurement? Explain angle slip gauges. | CO1 | **5M** | |
|  |  | OR |  |  | |
| 3. | a) | With the aid of neat sketches explain the principle of Tool maker’s microscope | CO1 | **5M** | |
|  | b) | With a neat sketch explain the working of Sigma comparator? | CO1 | **5M** | |
| **Unit – II** | | | | | |
| 4. | a) | What is auto collimator? With neat sketch explain the working principle of auto collimator? | CO2 | **5M** | |
|  | b) | Discuss any three Alignment tests performed on the Lathe. | CO2 | **5M** | |
|  |  | OR |  |  | |
| 5. | a) | Explain how to measure major, minor and effective diameter of thread using 3 Wire method. | CO2 | **5M** | |
|  | b) | With a neat sketch explain the working of Tomlinson surface meter? | CO2 | **5M** | |
| **Unit – III** | | | | | |
| 6. | a) | Explain the design consideration in Jigs and Fixtures | CO3 | **5M** | |
|  | b) | Explain the gear hobbing process with a diagram and mention its applications, advantages and limitations | CO3 | **5M** | |
|  |  | OR |  |  | |
| 7. | a) | Explain the working principle and advantages of gear shaping | CO3 | **5M** | |
|  | b) | Explain thread milling process with suitable diagram | CO3 | **5M** | |
| **Unit – IV** | | | | | |
| 8. | a) | Estimate the blanking force to cut a blank 25mm wide and 30mm long from a 1.5mm thick metal strip if the ultimate shear stress of the material is 450 N/mm2. Also determine the work done if the percentage of penetration is 25% of material thickness. | CO4 | **5M** | |
|  | b) | Explain different types of bending methods | CO4 | **5M** | |
|  |  | OR |  |  | |
| 9. | a) | Explain the following terms related to deep drawing i) Blank size ii) Number of draws | CO4 | **5M** | |
|  | b) | Explain the Compound die with a neat diagram | CO4 | **5M** | |

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