

**DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE**

**Regular End Semester Examination – Summer 2022**

**Branch : Mechanical Engineering/ Mechanical Engineering (Sandwich)**

**Course: B. Tech.**

**Semester : VI**

**Subject Code & Name: BTMEC 601- Manufacturing Processes - II**

**Max Marks: 60**

**Date: 11/08/2022**

**Duration: 3.45 Hr.**

**Instructions to the Students:**

1. All the questions are compulsory.
2. The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.
3. Use of non-programmable scientific calculators is allowed.
4. Assume suitable data wherever necessary and mention it clearly.

(Level/CO) Marks

**Q. 1 Solve Any Two of the following.**

- |   |            |          |
|---|------------|----------|
| A) Define abrasive with the help of a single grain having a negative rake angle.      | <b>CO1</b> | <b>6</b> |
| B) What are the advantages of coextrusion?  | <b>CO6</b> | <b>6</b> |
| C) Derive mathematical expression to determine the shear angle in orthogonal cutting. | <b>CO2</b> | <b>6</b> |

**Q.2 Solve Any Two of the following.**

- |  |            |          |
|--|------------|----------|
| A) Describe with the help of a suitable sketch mechanism of chip formation in orthogonal machining of ductile materials. | <b>CO2</b> | <b>6</b> |
| B) Explain the standard marking system for the given conventional grinding wheel (30 A 46 H 6 V XX).                     | <b>CO1</b> | <b>6</b> |
| C) Define tool life and discuss the concept of crater wear and flank wear.   | <b>CO3</b> | <b>6</b> |

**Q. 3 Solve Any Two of the following.**

- |  |            |          |
|--|------------|----------|
| A) What are the major properties required of cutting tool materials?   | <b>CO3</b> | <b>6</b> |
| B) In a machining operation that approximates orthogonal cutting, the cutting tool has a rake angle = $10^\circ$ . The chip thickness before the cut $t_o = 0.50$ mm and the chip thickness after the cut $t_c = 1.125$ mm. Calculate the shear plane angle and the shear strain in the operation. | <b>CO2</b> | <b>6</b> |
| C) Describe the advantages and limitations of powder metallurgy parts.   | <b>CO4</b> | <b>6</b> |

**Q.4 Solve Any Two of the following.**

- |   |            |          |
|---|------------|----------|
| A) Discuss with a suitable sketch the concept of heat generation and temperature distribution in metal cutting. | <b>CO3</b> | <b>6</b> |
| B) How is glass tubing produced?  | <b>CO5</b> | <b>6</b> |
| C) Briefly describe the plastic extrusion process.  | <b>CO6</b> | <b>6</b> |

**Q. 5 Solve Any Two of the following.**

- |  |            |          |
|--|------------|----------|
| A) Discuss powder production using water automatization technique with sketch. | <b>CO4</b> | <b>6</b> |
| B) How flat sheets/ glass are manufacture? Explain float glass method.         | <b>CO5</b> | <b>6</b> |
| C) What is an abrasive? Discuss conventional abrasives in brief.               | <b>CO1</b> | <b>6</b> |

**\*\*\* End \*\*\***