

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. **CO1 6**
- B) What are the advantages of coextrusion? **CO6 6**
- C) Derive mathematical expression to determine the shear angle in orthogonal cutting. **CO2 6**

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. **CO2 6**
- B) Explain the standard marking system for the given conventional grinding wheel (30 A 46 H 6 V XX). **CO1 6**
- C) Define tool life and discuss the concept of crater wear and flank wear. **CO3 6**

Q. 3 Solve Any Two of the following.

- A) What are the major properties required of cutting tool materials? **CO3 6**
- B) In a machining operation that approximates orthogonal cutting, the cutting tool has a rake angle = 10° . 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. **CO2 6**
- C) Describe the advantages and limitations of powder metallurgy parts. **CO4 6**

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. **CO3 6**
- B) How is glass tubing produced? **CO5 6**
- C) Briefly describe the plastic extrusion process. **CO6 6**

Q. 5 Solve Any Two of the following.

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

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