DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Regular End Semester Examination – Summer 2022

Course: B. Tech. **Branch :** Mechanical Engineering **Semester :**VI

Subject Code & Name: BTMC401 Manufacturing Processes I

Max Marks: 60 **Date: 13/08/2022** **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. *Assume suitable data wherever necessary and mention it clearly.*

		(Level/CO)	Marks
Q. 1	**Answer Any Two of the following.**		
A)	Explain the following types of casting processes I] Expendable-pattern casting (Lost Foam) II] Shell-mold casting	CO1	6
B)	What is the function of chills in the casting processes? Why the chaplets are used in casting?	CO1	6
C)	What is 'Fluidity Index'? Name the property of the mold that provides "ability to give way and allow casting to shrink without cracking the casting". Define the casting defect 'Misrun'.	CO1	6
Q.2	**Explain any two of the following with neat diagrams.**		
A)	Two-high or three-high rolling mills.	CO2	6
B)	Cluster mill.	CO2	6
C)	Impression-die forging.	CO2	6
Q. 3	**Answer Any Two of the following.**		
A)	Explain the Process of Impact Extrusion giving suitable example.	CO3	6
B)	Explain types of shearing dies.	CO3	6
C)	Show the following types of discontinuities in fusion welds. i] Underfill ii] Inclusions iii] Overlap iv] Undercut v] Incomplete penetration	CO4	6
Q.4	**Answer Any Two of the following.**		
A)	Explain the following types of welding processes I] Thermit Welding II] Friction Stir Welding	CO4	6
B)	What are different types of lathes?	CO5	6
C)	What is gun drilling and how drill life is measured?	CO5	6
Q. 5	**Write short notes on Any Two of the following.**		
A)	Broaching.	CO6	6
B)	End milling	CO6	6
C)	Gear finishing processes.	CO6	6

***** End *****

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**

***** End *****