

**DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY,
LONERE – RAIGAD -402 103**

Supplementary Winter Semester Examination – Nov - 2019

Branch: Mechanical Engineering

Sem.:- IV

Subject :- Manufacturing Processes –I (BTMEC401)

Marks: 60

Date:- 26/11/2019

Time:- 3 Hr.

Instructions to the Students

1. Attempt **any five** questions of the following.
2. Illustrate your answers with neat sketches, diagram etc., wherever necessary.
3. If some part or parameter is noticed to be missing, you may appropriately assume it and should mention it clearly

Q. N.	Question	Marks
1 a	Sketch the cross section of a sand mould which is ready for pouring and label the various important parts. Give a brief write-up on the following casting terms - Sprue, Gate, Runner, Riser.	4 2
1b	Explain the following properties of a moulding sand. i) Adhesiveness ii) Collapsibility iii) Permeability	6
2a	How does a cold rolling differ from hot rolling in terms of the process and product? Explain what do you understand by the terms slab and billet?	4 2
2b	Distinguish between open- and closed- die forging processes. What do you understand by the term flash in forging.	4 2
3a	A hole of 10 mm × 25 mm is to be cut in a 3 mm thick sheet. The shear strength of the material is 80 MPa. Estimate the press load required.	6
3b	Explain with sketches the difference between direct and indirect extrusion. List the variables which affect the extrusion process performance.	4 2
4a	List out any three differences between brazing and soldering. Write two applications of each of them. Explain the undercut and cracking defects in welding.	6
4b	Describe the submerged arc welding process in respect of working principle, advantages and limitations.	6
5a	List the methods of taper turning on a lathe. In a turning operation, a cutting speed of 55 m/min has been selected. At what rpm should a 15 mm diameter bar be rotated?	6
5b	Show with a neat sketch the various parts and angles of a twist drill. Explain the various allied operations that can be performed on drilling machine, draw a simple sketch.	6
6a	What are three basic forms of milling process? Differentiate between the up milling and down milling. Any three differences.	6
6b	Classify gear manufacturing methods. Explain gear hobbing process with a neat sketch.	6