

# CBCS SCHEME

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BMR302

## Third Semester B.E./B.Tech. Degree Examination, Dec.2023/Jan.2024 Manufacturing Processes

Time: 3 hrs.

Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.  
2. M : Marks , L: Bloom's level , C: Course outcomes.

Module – 1			M	L	C
Q.1	a.	Define casting and moulding. Explain the steps involved in sand casting process.	10	L2	CO1
	b.	Explain with neat sketches, shell moulding process and investment moulding process.	10	L2	CO2
OR					
Q.2	a.	What is Pattern? Explain in detail various allowances given to pattern and reasons to provide the allowances.	10	L2	CO2
	b.	How gating system in casting process helps for production of quality casting? Explain squeeze casting process.	10	L3	CO3
Module – 2					
Q.3	a.	Define welding. Give the complete classification of welding and list its application and advantages.	10	L2	CO1
	b.	With neat sketches, explain the working principle of seam welding and spot welding process.	10	L3	CO3
OR					
Q.4	a.	With a neat sketch, explain the working principle of FLUX shielded metal arc welding and list its advantages.	10	L3	CO3
	b.	Write a short note on welding defects and inspection of welded joints.	10	L2	CO1
Module – 3					
Q.5	a.	Give the classification of lathe machine. State and briefly explain any three operations performed on a lathe machine.	12	L2	CO2
	b.	Estimate the time required to machine a cast iron surface 250mm. Long and 150mm wide on a shaper with cutting-to-ratio of 3:2. Use a cutting speed of 21m/min, a feed of 2mm/stroke and a clearance of 25mm. The available ram strokes on the shaper are : 28, 40, 60 and 90 strokes/min. Also, determine MRR assuming depth of cut as 4mm.	8	L3	CO3
OR					
Q.6	a.	List and explain any four operations performed by the milling machine with neat sketches.	12	L3	CO3
	b.	With the neat sketch, explain the working principle and main parts of a shaper machine.	8	L3	CO4

## Module – 4

Q.7	a.	What is drawing and extrusion process? Explain the following: i) Direct and indirect extrusion. ii) Tube drawing and wire drawing.	10	L3	CO3
	b.	What is 3D-printing? List the various applications, advantages and limitations of 3D printing.	10	L3	CO4

## OR

Q.8	a.	What is HERF? List and explain the various advantages, disadvantages and applications of HERF process.	10	L2	CO2
	b.	What is forging and rolling? Explain the following with neat sketch: i) Three high rolling mill and four high rolling mill. ii) Closed die and open die forging.	10	L2	CO2

## Module – 5

Q.9	a.	Explain the working of plasma arc machining and list its advantages and limitations.	10	L3	CO3
	b.	Identify mechanism of material removal, energy source of AJM. List its advantages.	10	L3	CO3

## OR

Q.10	a.	Define surface finishing process and elaborate the following finishing process: i) Lapping      ii) Honing.	10	L2	CO2
	b.	With a neat sketch, explain the working principle of LBM. List its limitations.	10	L3	CO3

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