CBCS SCHEME

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BMT303

Third Semester B.E./B.Tech. Degree Examination, Dec.2024/Jan.2025
Material science and Manufacturing Technology

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 the following and draw graphs and equations if necessary : i) Stiffness ii) Resilience iii) Young's modulus iv) Bulk modulus v) Co-ordination number.	10	L2	CO1
	b.	Describe the different types of defects found in crystalline solids.	10	L2	CO1
		OR			
Q.2	a.	Define Atomic packing factor. Find the APF of Body Centered Cubic Structure (BBC).	10	L2	CO1
	b.	With a neat sketch explain the stress strain curve for mild steel with its salient points.	10	L2	CO1
		Module – 2			
Q.3	a.	Give classification of composite materials, and explain them briefly.	10	L2	CO2
	b.	Describe different Advantages, Limitations and application of composite materials.	10	L2	CO2
		OR			
Q.4	a.	Write short notes on with working principles and applications on : i) Piezoelectric materials ii) Shape memory alloys.	10	L2	CO2
	b.	Explain : i) Magnetorleological materials ii) Fibre optic sensor.	10	L2	CO2
		Module – 3			
Q.5	a.	Define manufacturing. Briefly explain the classifications of manufacturing process.	10	L2	CO3
	b.	With a neat sketch explain the working principle of electric arc furnace.	10	L2	CO3
		OR			
Q.6	a.	Define casting and briefly explain the steps involved in casting process.	10	L2	CO3
	b.	Explain continuous casting process with sketch.	10	L2	CO3

		Module – 4			
Q.7	**a.**	What is welding? Give advantage and limitations of welding.	**10**	**L2**	**CO4**
	b.	Explain the working principle of atomic hydrogen welding with a sketch.	**10**	**L2**	**CO4**
		OR			
Q.8	**a.**	With a neat diagram, explain flux shielded welding process.	**10**	**L2**	**CO4**
	b.	With a neat sketch Describe : i) Resistance welding ii) Tungsten inert gas welding.	**10**	**L2**	**CO4**
		Module – 5			
Q.9	**a.**	With a neat sketch explain single point cutting tool nomenclature.	**10**	**L2**	**CO4**
	b.	Define milling process. Briefly explain the classification of milling machines.	**10**	**L2**	**CO4**
		OR			
Q.10	**a.**	With a neat sketch explain the parts of lathe.	**10**	**L2**	**CO4**
	b.	Explain different operations carried out on lathe.	**10**	**L2**	**CO4**

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