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EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY
An Autonomous Institution Affiliated to Visvesvaraya Technological University (VTU) Belagavi

USN | | | | | | | | | | |

25ES244

Second Semester B.E. Degree Examination, June/July 2026
INTRODUCTION TO MECHANICAL ENGINEERING

TIME:3 hrs. Max.Marks:100

Note: 1. Answer **any FIVE** full questions, choosing **ONE** question from **each MODULE.**
2. M: Marks, L: Bloom's level,C: Course outcomes.
3. Assume missing data suitably.

		Module-1	M	L	C
Q.1	a	Discuss various streams in mechanical engineering with examples.	6	L2	CO1
	b	Discuss career opportunities in mechanical engineering.	6	L3	CO1
	c	Explain working principle of Centrifugal pump with neat sketch.	8	L2	CO1
		OR			
Q.2	a	Explain gear system with neat sketch.	6	L2	CO1
	b	Classify drones machines.	6	L2	CO1
	c	Explain steering system with neat sketch.	8	L3	CO1
		Module–2			
Q.3	a	Define an engine and classify engines.	6	L2	CO2
	b	Differentiate between petrol and diesel internal combustion engines.	6	L2	CO2
	c	Describe the working of a four-stroke diesel engine with stages.	8	L3	CO2
		OR			
Q.4	a	What are Electric Vehicles (EVs)? List their components.	6	L2	CO2
	b	Explain simple and compound gear trains.	6	L2	CO2
	c	Explain the concept of CVT (Continuously Variable Transmission).	8	L3	CO2
		Module–3			
Q.5	a	What are engineering materials? Classify engineering materials.	6	L2	CO3
	b	Write a note on ferrous materials? Write advantages and disadvantages for ferrous materials.	8	L3	CO3
	c	List advantages, disadvantages and applications of composite materials.	6	L2	CO3
		OR			
Q.6	a	Write a note on shape memory alloys (SMA).	6	L2	CO3
	b	List advantages and disadvantages of smart materials.	6	L2	CO3
	c	Explain piezoelectric materials with applications.	8	L3	CO3
		Module–4			
Q.7	a	Classify manufacturing processes.	6	L3	CO4
	b	With a neat diagram explain the working of arc welding machine.	6	L2	CO4
	c	Explain working of Tapping operation (ii) Reaming operation	8	L2	CO4

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		OR			
Q.8	**a**	Draw and label components of CNC machine.	**6**	**L3**	**CO4**
	b	Explain different steps involved in 3D printing.	**8**	**L3**	**CO4**
	c	List advantages disadvantages and applications of additive manufacturing process.	**6**	**L2**	**CO4**
		Module–5			
Q.9	**a**	Define mechatronics and list its elements.	**6**	**L2**	**CO5**
	b	Explain in brief different types of automation used in industries.	**8**	**L3**	**CO5**
	c	List the examples of any two mechatronic systems with explanation.	**6**	**L2**	**CO5**
		OR			
Q.10	**a**	What is ADAS? List its features.	**6**	**L2**	**CO5**
	b	Sketch and explain the working of optical encoders	**8**	**L3**	**CO5**
	c	Write a note on integrated systems.	**6**	**L2**	**CO5**

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