BESCK104D/204D

Model Question Paper -1 with effect from 2022-23(CBCS Scheme)

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

First Semester B.E. Degree Examination

INTRODUCTION TO MECHANICAL ENGINEERING

TIME: 03 Hours **Max. Marks: 100**

Note: 01. Answer any **FIVE** full questions, choosing at least **ONE** question from each **MODULE**.

			Marks
		Module – 1	
Q.1	**(a)**	**Explain** the Role of Mechanical Engineering in Industries and Society.	8
	(b)	**Explain** the Emerging Trends and Technologies in Automotive and Aerospace sectors.	6
	(c)	**Write** a short note on i) Global warming ii) Ozone layer depletion	6
		OR	
Q.2	**(a)**	**Explain** the different types of Fossil fuels & biofuels with applications.	8
	(b)	With a neat sketch **Explain** the working of hydel power plant.	8
	(c)	**Explain** the Emerging Trends and Technologies in Manufacturing sector.	4
		Module – 2	
Q.3	**(a)**	With neat sketch **explain** the following machine tool operations i) Boring ii) Plane milling iii) Slot milling	12
	(b)	**Explain** the components of CNC with block diagram.	8
		OR	
Q.4	**(a)**	**What** are the advantages and applications of CNC?	6
	(b)	**Write** a short note on 3D printing.	6
	(c)	**Explain** the following lathe operations with neat sketch: i) Turning ii) Knurling	8
		Module – 3	
Q.5	**(a)**	**Explain** the Working of 4-Strokes Diesel Engine with P-V diagram.	10
	(b)	**Enumerate** the Difference between Petrol engine and Diesel engine	6
	(c)	**What** are the applications of IC engines?	4
		OR	
Q.6	**(a)**	**Describe** the Components of Electric Vehicle with neat sketch.	8
	(b)	**Describe** the Components of Hybrid Vehicle with neat sketch.	8
	(c)	**What** are the advantages and disadvantages of Electric Vehicles?	4
		Module – 4	
Q.7	**(a)**	**Explain** the different types of Ferrous materials with applications.	8
	(b)	**Explain** the different types of Nonferrous materials with applications.	8
	(c)	**Write** a short note on Shape Memory Alloys.	4

		OR	
Q.8	**(a)**	**Enumerate** the Difference between Soldering, Brazing and Welding.	6
	(b)	**Explain** the Working principle of Arc welding with neat sketch.	8
	(c)	**Explain** the different types of flames used in Gas welding.	6
		Module – 5	
Q.9	**(a)**	**Describe** closed-loop mechatronic system.	6
	(b)	**Explain** the different types of Automation system.	8
	(c)	**Explain** the following robotics configuration: i) Polar cylindrical ii) Cartesian coordinate	8
		OR	
Q.10	**(a)**	**Explain** Physical design and Logical design of IoT.	10
	(b)	**Explain** Functional blocks and communication models used in IoT.	10

Table showing the Bloom's Taxonomy Level, Course Outcome and Programme Outcome

Question		Bloom's Taxonomy Level attached	Course Outcome	Programme Outcome
Q.1	(a)	L2	CO1	PO1, PO6, PO12
	(b)	L2	CO1	PO1
	(c)	L1	CO1	PO1, PO7
Q.2	(a)	L2	CO1	PO1
	(b)	L2	CO1	PO1, PO7
	(c)	L2	CO1	PO1
Q.3	(a)	L2	CO2	PO1
	(b)	L2	CO2	PO1
Q.4	(a)	L1	CO2	PO1
	(b)	L1	CO2	PO1
	(c)	L2	CO2	PO1
Q.5	(a)	L2	CO3	PO1, PO7
	(b)	L2	CO3	PO1
	(c)	L1	CO3	PO1
Q.6	(a)	L2	CO3	PO1, PO7,PO12
	(b)	L2	CO3	PO1, PO7, PO12
	(c)	L1	CO3	PO1
Q.7	(a)	L2	CO4	PO1
	(b)	L2	CO4	PO1
	(c)	L1	CO4	PO1, PO12
Q.8	(a)	L1	CO4	PO1
	(b)	L2	CO4	PO1
	(c)	L2	CO4	PO1
Q.9	(a)	L2	CO5	PO1, PO12
	(b)	L2	CO5	PO1, PO12
	(c)	L2	CO5	PO1
Q.10	(a)	L2	CO5	PO1, PO12
	(b)	L2	CO5	PO1, PO12

Bloom's Taxonomy Levels	**Lower order thinking skills**		
	Remembering:L_1	Understanding: L_2	Applying:L_3
	Higher order thinking skills		
	Analyzing: L_4	Evaluating : L_5	Creating: L_6