

Model Question Paper- I with effect from 2022

CBCS SCHEME

First Semester B.E Degree Examination

Introduction to Mechanical Engineering (BESCK104D)

TIME: 03 Hours

Max.Marks:100

Note:

1. Answer any **FIVE** full questions, choosing at least **ONE** question from each **MODULE**
2. VTU Formula Hand Book is Permitted
3. M: Marks, L: Bloom's level, C: Course outcomes.

		Module - 1	M	L	C
Q.1	a	Explain briefly the emerging trends of Mechanical engineering in Manufacturing & Energy sectors.	10	L2	CO1
	b	Describe the following i) Nuclear fuels ii) Fossil fuels	10	L2	CO1
OR					
Q.2	a	Describe the construction & working of wind power plant with a schematic diagram	08	L2	CO1
	b	Explain the utilization of solar energy using flat plate collector with a schematic diagram.	08	L2	CO1
	c	Outline the following i) Environmental Issues ii) Bio fuels	04	L1	CO1
Module – 2					
Q.3	a	Explain the working principle of Lathe with a line diagram.	07	L2	CO2
	b	Illustrate the following operations of drilling with sketches. i) Boring ii) Drilling iii) Reaming	06	L3	CO2
	c	Explain the working principle of Milling with schematic diagram.	07	L2	CO2
OR					
Q.4	a	Describe the various components of CNC with schematic diagram.	08	L2	CO2
	b	Define Additive Manufacturing. List the various steps involved in additive manufacturing	06	L1	CO2
	c	List the advantages and applications of CNC	06	L1	CO2
Module – 3					
Q.5	a	Analyze the working of the 4 stroke Petrol engine with sketches. Plot the PV diagram.	12	L4	CO3
	b	List the differences between 4 stroke Petrol and diesel engine	08	L1	CO3
OR					
Q.6	a	Describe Electric vehicles. Explain the components and working of electric vehicles.	08	L2	CO3
	b	Describe Hybrid vehicles. Explain the components of Hybrid vehicles.	08	L2	CO3
	c	List the advantages and limitations of electric vehicles.	04	L2	CO3
Module – 4					
Q.7	a	Recite the classification of metals	05	L1	CO4

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	b	Describe the following Materials i) Ceramics ii) Shape memory Alloys	06	L2	CO4
	c	Describe the three types of carbon steels with applications	09	L2	CO4
OR					
Q.8	a	List the differences between Soldering, Brazing and Welding	10	L1	CO4
	b	Describe the construction & working of Arc welding process with neat sketch	10	L2	CO4
Module – 5					
Q.9	a	Define Mechatronics. List the differences between Open loop and Closed loop systems	08	L1	CO5
	b	Based on the configuration, explain the four types of robots with sketches	08	L3	CO5
	c	Describe the communication models with respect to IoT	04	L1	CO5
OR					
Q.10	a	Define Automation. Explain the three types of Automation.	07	L1, L3	CO5
	b	Describe the basic elements of automation system with block diagram	08	L2	CO5
	c	Define IoT. List the characteristics of IoT.	05	L1	CO5