

Code: 23ES1201

I B.Tech - II Semester – Regular Examinations - JULY 2024

BASIC CIVIL & MECHANICAL ENGINEERING

(Common for CE, ME, IT, AIML, DS)

Duration: 3 hours

Max. Marks: 70

Note: 1. This question paper contains two Parts: Part-A and Part-B.

2. Each Part contains:

- 5 short answer questions. Each Question carries 1 Mark and
- 3 essay questions with an internal choice from each unit. Each question carries 10 marks.

3. All parts of Question paper must be answered in one place.

BL – Blooms Level

CO – Course Outcome

PART – A

		BL	CO
1.a)	Enlist the safety measures in Civil Engineering.	L1	CO1
1.b)	Differences between substructure and super structure.	L2	CO5
1.c)	Define Surveying.	L1	CO2
1.d)	Define hydrology.	L1	CO4
1.e)	Classify types of dams.	L2	CO4

			BL	CO	Max. Marks
UNIT-I					
2	a)	Write short notes on scope of Civil Engineering.	L2	CO1	5 M
	b)	List types of cement and explain any three of them.	L3	CO5	5 M
OR					

3	a)	List the disciplines of Civil Engineering and explain Transportation and Structural Engineering.	L2	CO1	5 M
	b)	Explain about pre-fabrication construction techniques.	L3	CO5	5 M
UNIT-II					
4	a)	With neat sketches explain the principles of surveying.	L2	CO2	5 M
	b)	The following staff readings were observed successfully with level, the instrument having been moved after 3 rd , 6 th and 8 th readings; 2.228, 1.606, 0.988, 2.090, 2.864, 1.262, 0.602, 1.982, 1.044, 2.684 meters. Enter the above readings in a page of a level book and calculate the RL of points if the first reading was taken with a staff held on bench mark of 300mt.	L4	CO2	5 M
OR					
5	a)	List and explain the instruments used in surveying.	L2	CO2	5 M
	b)	Explain the characteristics of Contour Mapping.	L3	CO2	5 M
UNIT-III					
6	a)	Explain the components of airport with neat sketch.	L2	CO3	5 M

	b)	Differentiate between Flexible and Rigid pavement.	L3	CO3	5 M
OR					
7	a)	Explain the water quality parameters.	L2	CO4	5 M
	b)	Explain the components of dam with neat sketch.	L3	CO4	5 M

PART – B

			BL	CO	
1.f)		Give the classification of engineering materials.	L1	CO1	
1.g)		Mention any two roles of mechanical engineer in the society.	L1	CO1	
1.h)		Define casting process.	L1	CO2	
1.i)		What is a power plant?	L1	CO3	
1.j)		Mention the configurations of robot.	L1	CO3	

			BL	CO	Max. Marks
UNIT-I					
8	a)	Explain the new technological developments in mechanical engineering in any two sectors.	L2	CO1	6 M
	b)	Write the applications of metals.	L1	CO1	4 M
OR					
9	a)	What is the role of mechanical engineering in industries?	L1	CO1	4 M
	b)	Write a short note on engineering materials.	L1	CO1	6 M

UNIT-II					
10	a)	Differentiate between hot and cold working processes.	L2	CO2	5 M
	b)	Explain the principle of additive manufacturing technology.	L2	CO2	5 M
OR					
11	a)	Explain the working of Otto cycle with the help of p-v and T-s diagrams.	L2	CO2	6 M
	b)	What are the advantages and disadvantages of electric vehicles?	L1	CO2	4 M
UNIT-III					
12	a)	With neat line diagram, explain the working principle of a thermal power plant.	L2	CO3	6 M
	b)	What are different types of belt drives?	L1	CO3	4 M
OR					
13	a)	Explain different types of robotic joints with line diagrams.	L2	CO3	6 M
	b)	Write any four applications of robots in industry.	L1	CO3	4 M