

Code: 23ES1201

**I B.Tech - II Semester – Regular / Supplementary Examinations
MAY 2025**

**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)	List out any six disciplines of civil engineering.	L1	CO1
1.b)	Write any four construction materials.	L1	CO5
1.c)	Define levelling and state its objectives.	L1	CO2
1.d)	Distinguish the rigid and flexible pavement.	L1	CO3
1.e)	Classify the dams.	L1	CO4

			BL	CO	Max. Marks
UNIT-I					
2	a)	Discuss about the various types of Aggregates with their sizes and shapes.	L2	CO5	5 M
	b)	Explain the significance of building construction and planning.	L2	CO1	5 M
OR					

3	a)	Discuss the role of hydraulics and water resources engineering in ensuring better society.	L2	CO1	5 M
	b)	Explain about the prefabricated construction techniques.	L2	CO5	5 M
UNIT-II					
4	a)	Explain how you would take horizontal measurements using surveying instruments.	L2	CO2	5 M
	b)	Explain about contour and its characteristics (with sketch).	L2	CO2	5 M
OR					
5	a)	Write about the levelling instruments used in levelling process.	L2	CO2	5 M
	b)	What are the differences between magnetic bearing and true bearing?	L2	CO2	5 M
UNIT-III					
6	a)	Discuss how the transportation engineering plays an important role in economic development?	L2	CO3	5 M
	b)	Illustrate the hydrological cycle and mention its parts with a neat sketch.	L2	CO4	5 M
OR					
7	a)	Discuss the components and functions of rigid pavement.	L2	CO3	5 M
	b)	Explain about the quality of water.	L2	CO4	5 M

PART – B

		BL	CO
1.f)	Classify non-ferrous metals.	L1	CO1
1.g)	State the principle of Joining Process.	L1	CO2
1.h)	Define degrees of freedom.	L1	CO3
1.i)	What is the carbon percentage in steel?	L1	CO1
1.j)	What is meant by 2-stroke engine?	L1	CO2

			BL	CO	Max. Marks
UNIT-I					
8	a)	What is mechanical engineering? Discuss the role of mechanical engineers in the industrial sector and society.	L2	CO1	5 M
	b)	State the applications and advantages of ceramic materials.	L2	CO1	5 M
OR					
9	a)	Explain the role of mechanical engineer in automotive & aerospace sectors.	L2	CO1	5 M
	b)	Classify and discuss the composite materials in detail.	L2	CO1	5 M
UNIT-II					
10	a)	Explain any two types of machining process with a neat sketch.	L2	CO2	5 M
	b)	Illustrate the components of Refrigeration & Air Conditioning cycles with a neat sketch.	L2	CO2	5 M
OR					

11	a)	Explain the components of electric vehicles with a neat sketch.	L2	CO2	5 M
	b)	Distinguish between SI engine and CI engine.	L2	CO2	5 M
UNIT-III					
12	a)	Discuss the working principle of nuclear power plant and mention the advantages and disadvantages.	L2	CO3	5 M
	b)	Explain the importance of belt drives and its types in mechanical power transmission.	L2	CO3	5 M
OR					
13	a)	Demonstrate the working of hydroelectric power plant and list out the applications.	L2	CO3	5 M
	b)	Categorize the robots and list out the different types of robot configurations.	L2	CO3	5 M