

Code: 23ES1201

**I B.Tech - II Semester – Supplementary Examinations
DECEMBER 2025**

**BASIC CIVIL & MECHANICAL ENGINEERING
(Common for CE, ME, IT, AIML, DS)**

Duration: 3 hours

Max. Marks: 70

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- 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.
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PART – A

1.a)	Write the scope of studying structural engineering.
1.b)	List the various sizes of bricks.
1.c)	Difference between the Azimuth and Bearing.
1.d)	What is meant by pavement and classify it.
1.e)	What do you understand by rainwater harvesting system?

			Max. Marks
UNIT-I			
2	a)	Discuss the role of civil engineers in society.	5 M
	b)	Explain the purpose of studying geo-technical engineering.	5 M
OR			
3	a)	Discuss the role of environmental engineering in ensuring better society.	5 M
	b)	Discuss the ingredients used in cement concrete and its proportions.	5 M

UNIT-II			
4	a)	Explain the importance of using leveling instrument in civil construction works.	5 M
	b)	Explain step by step procedure of locating contours.	5 M
OR			
5	a)	Explain how to do angular measurements using surveying instruments?	5 M
	b)	Explain briefly about contour mapping.	5 M
UNIT-III			
6	a)	Discuss about the need of i) Harbour ii) Tunnel iii) Airport.	5 M
	b)	Explain the purpose of reservoirs.	5 M
OR			
7	a)	Discuss the components and functions of flexible pavement.	5 M
	b)	Write a note on hydrology and hydrological cycle.	5 M

PART – B

1.f)	What is Mechanical Engineering?
1.g)	Define the term “Casting”.
1.h)	State laws of robot.
1.i)	List out Ferrous materials.
1.j)	Write the applications of joining process.

			Max. Marks
UNIT-I			
8	a)	Elucidate the role of mechanical engineering in the manufacturing sector.	5 M

	b)	Classify and explain different types of composite.	5 M
OR			
9	a)	Explain the role of mechanical engineer in energy sector.	5 M
	b)	Differentiate ferrous and non-ferrous metals.	5 M
UNIT-II			
10	a)	Classify the casting process and illustrate the sand casting with a neat sketch.	5 M
	b)	Illustrate the working principle of boiler with a neat sketch.	5 M
OR			
11	a)	Describe the CNC machines and explain the necessity of CNC machines with a neat sketch.	5 M
	b)	Explain the working of four stroke SI engine with a neat sketch.	5 M
UNIT-III			
12	a)	Elaborate the working principle of steam power plant with a neat sketch.	5 M
	b)	Describe the robot anatomy with different types of joints and links.	5 M
OR			
13	a)	Describe and classify the mechanical power transmission drives.	5 M
	b)	Demonstrate the working of hydroelectric power plant and list out the applications.	5 M