

Code: 23ES1201

I B.Tech - II Semester – Regular / Supplementary Examinations
JUNE 2026

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)	Mention various disciplines of civil engineering.	L1	CO1
1.b)	Interpret the composition of bricks.	L2	CO5
1.c)	Explain the check used in Height of Instrument method and its terms.	L2	CO2
1.d)	Illustrate the importance of transportation engineering in Nation's economic development.	L2	CO3
1.e)	Differentiate between Dams and Reservoirs.	L3	CO4

			BL	CO	Max. Marks
UNIT-I					
2	a)	Describe the Geo-technical engineering discipline in detail.	L2	CO1	5 M
	b)	Summarize the popularity of cement concrete as a construction material and types of concrete.	L2	CO5	5 M

OR					
3	a)	Demonstrate the importance of various disciplines of civil engineering for infrastructural development of a nation.	L2	CO1	5 M
	b)	Classify aggregates based on origin, size and shape for use in construction.	L3	CO5	5 M
UNIT-II					
4	a)	Classify bearings and illustrate system of measurements for measuring horizontal angles in WCB and QB with examples.	L3	CO2	5 M
	b)	A staff is held on a benchmark (BM) of RL 100.00 m. The Backsight (BS) is 1.50 m. The staff is then held on a point A, and the Foresight (FS) is 2.20 m. Calculate the RL of point A.	L3	CO2	5 M
OR					
5	a)	What are the various levelling methods? Explain any one method used to determine the reduced level of a point.	L2	CO2	5 M
	b)	Illustrate the characteristics of a contour map with neat sketches.	L3	CO2	5 M
UNIT-III					
6	a)	Interpret the key differences between flexible and rigid pavements.	L2	CO3	5 M
	b)	Explain various qualities of drinking water.	L2	CO4	5 M
OR					

7	a)	Describe various modes of transportation and differentiate highway transportation from other modes.	L2	CO3	5 M
	b)	Discuss the advantages of rainwater harvesting.	L2	CO4	5 M

PART – B

			BL	CO
1.f)		Define machine.	L1	CO1
1.g)		Give two examples of non-ferrous metals.	L1	CO1
1.h)		State the principle of casting.	L1	CO2
1.i)		Define CNC machine.	L1	CO2
1.j)		Define belt drive.	L1	CO3

			BL	CO	Max. Marks
UNIT-I					
8	a)	Discuss ceramic materials and their engineering applications.	L2	CO1	5 M
	b)	Discuss the importance of Mechanical Engineering in society.	L2	CO1	5 M
OR					
9	a)	Classify engineering materials with suitable examples.	L2	CO1	5 M
	b)	Explain the properties and applications of ferrous and non-ferrous metals.	L2	CO1	5 M

UNIT-II					
10	a)	Explain the basic principles of casting process with advantages.	L2	CO2	5 M
	b)	Describe forming processes used in manufacturing industries.	L2	CO2	5 M
OR					
11	a)	Explain the concept of 4 stroke IC engine with neat sketch.	L2	CO2	5 M
	b)	Describe the basic machining processes and their applications.	L2	CO2	5 M
UNIT-III					
12	a)	Explain the working principle of a steam power plant.	L2	CO3	5 M
	b)	Describe the working principle of a hydroelectric power plant.	L2	CO3	5 M
OR					
13	a)	Explain the working principle of a nuclear power plant.	L2	CO3	5 M
	b)	Discuss belt drives and their applications.	L2	CO3	5 M