

**BONAM VENKATA CHALAMAYYA INSTITUTE OF TECHNOLOGY &  
SCIENCE  
(AUTONOMOUS)**

***I - B. Tech II-Semester Regular/Supplementary Examinations (BR23), June - 2025***

**BASIC CIVIL & MECHANICAL ENGINEERING (CIVIL, EEE & ECE)**

Time: 3 hours

Max. Marks: 70

*Question Paper consists of Part-A and Part-B  
Answer ALL the question in Part-A and Part-B*

**PART-A (1 X 5 = 5M)**

		Marks	CO	BL
1. a)	What are the uses of Cement?	(1M)	CO 1	L1
b)	What is Transportation Engineering?	(1M)	CO 2	L1
c)	What are the instruments used in Chain Surveying?	(1M)	CO 2	L1
d)	Define Hydrology	(1M)	CO 3	L1
e)	What are the uses of dams?	(1M)	CO 3	L1
<u><b>(10 X 3 = 30M)</b></u>				
2.a)	What is the Role of Civil Engineers in Society?	05(M)	CO 1	L2
b)	What is the Scope of Structural Engineering	05(M)	CO 1	L2
<b>(OR)</b>				
3. a)	List out the materials used in construction and mention the uses of each in brief	05(M)	CO 1	L2
b)	Short note on uses of Prefabrication Construction Technology	05(M)	CO 1	L2
4.a)	What are Objectives and types of Surveying	05(M)	CO 2	L2
b)	Calculate Fore Bearings for the following Back Bearings i) $55^{\circ} 5'$ ii) $225^{\circ} 16'$ iii) $90^{\circ} 22'$ iv) $335^{\circ} 9'$ v) $181^{\circ}$	05(M)	CO 2	L3
<b>(OR)</b>				
5.a)	Explain the Formation of Soil?	05(M)	CO 2	L2
b)	Explain the three-phase system of soil with neat sketch?	05(M)	CO 2	L3
6.a)	Explain the importance of Transportation in nation's Economic Development	05(M)	CO 3	L2
b)	Differentiate Types of Pavements	05(M)	CO 3	L2
<b>(OR)</b>				
7.a)	Discuss the components of Hydrological Cycle	05(M)	CO 3	L2
b)	Tabulate Drinking water Standards as per I.S 10500	05(M)	CO 3	L2

PART-B (1 X 5 = 5M)

		Marks	CO	BL
8. a)	Name one ferrous and one non-ferrous metal.	(1M)	4	I
b)	What are the applications of ceramics?	(1M)	4	I
c)	Describe the function of the condenser in a refrigeration cycle.	(1M)	5	II
d)	What is a CNC machine?	(1M)	5	I
e)	Name any three types of power plants.	(1M)	6	I

(10 X 3 = 30M)

9.a)	Describe the role of Mechanical Engineering in the Industry. (OR)	10(M)	4	II
10.a)	What are composite materials? Discuss the advantages and disadvantages and applications of composite materials.	10(M)	4	I
11.a)	What is casting process? Explain the steps involved in casting process. (OR)	10(M)	5	I
12.a)	What are the main differences between SI and CI engines.	10(M)	5	I
13.a)	Explain the working principle of Hydro power plant. (OR)	10(M)	6	II
14.a)	What are the fundamental components of a robotic system and how are joints and links crucial in defining the robot's capabilities?	10(M)	6	I

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