

Course Code: 23CM101T

**PRAGATI ENGINEERING COLLEGE: SURAMPALEM
(AUTONOMOUS)**

I B.Tech I Semester Supplementary Examinations, July-2024

**BASIC CIVIL AND MECHANICAL ENGINEERING
(Common to CE, EEE, ME, ECE, IT and CSE(CS))**

Time: 3 hours

Max. Marks : 70

Part-A

(BASIC CIVIL ENGINEERING)

Note::

- i. Question 1 shall contain 5 compulsory short answer questions such that each question carry 1 Mark.
- ii. In each of the questions from 2 to the last question, there shall be either/or type questions of 10 marks each. Student shall answer any one of them.

Max. Marks : 35

Q. No.		Questions	BTL	CO	Marks														
1.	a)	List any two roles of Civil Engineers in society.	K1	CO1	1M														
	b)	Convert N30 ⁰ E and S10 ⁰ W to whole circle bearing system.	K1	CO2	1M														
	c)	What is dam? List the different types of dams.	K1	CO3	1M														
	d)	What is Rainwater Harvesting? Mention the benefits of it.	K2	CO1	1M														
	e)	What is taxiway?	K1	CO3	1M														
UNIT-I																			
2.	a)	Discuss the properties of concrete.	K2	CO1	5 M														
	b)	Explain the scope of structural and environmental engineering.	K2	CO1	5M														
OR																			
3	a)	List out the various disciplines in Civil Engineering and explain the scope of any two of them.	K2	CO1	5 M														
	b)	Describe the characteristics of good bricks.	K2	CO1	5 M														
UNIT-II																			
4	a)	Explain the concept of angular and horizontal measurements in surveying and the instruments used.	K2	CO2	5 M														
	b)	Explain the primary divisions in surveying.	K2	CO2	5 M														
OR																			
5.	The following bearing were observed with a compass. Sketch the traverse and compute the interior angles made by the traverse.		K3	CO2	10M														
<table><tr><td>Line</td><td>Fore Bearing</td><td>Back Bearing</td></tr><tr><td>AB</td><td>40⁰</td><td>220⁰</td></tr><tr><td>BC</td><td>120⁰</td><td>300⁰</td></tr><tr><td>CD</td><td>240⁰</td><td>60⁰</td></tr><tr><td>DA</td><td>340⁰</td><td>160⁰</td></tr></table>		Line				Fore Bearing	Back Bearing	AB	40 ⁰	220 ⁰	BC	120 ⁰	300 ⁰	CD	240 ⁰	60 ⁰	DA	340 ⁰	160 ⁰
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DA	340 ⁰	160 ⁰																	
UNIT-III																			
6.	a)	Discuss about the different sources of surface water.	K2	CO3	5 M														
	b)	Explain about the different types of highway pavements	K2	CO3	5 M														
OR																			
7.	a)	Define the following terms i) Runway ii) Apron iii) Hangers	K2	CO3	5 M														
	b)	What is a tunnel? State the purpose of tunnels.	K2	CO3	5 M														

Part-B
(BAISC MECHANICAL ENGINEERING)

Note::

- i. Question 1 shall contain 5 compulsory short answer questions such that each question carry 1 Mark.
- ii. In each of the questions from 2 to the last question, there shall be either/or type questions of 10 marks each. Student shall answer any one of them.

Max. Marks : 35

Q. No.	Questions	BTL	CO	Marks
1.	a) Discuss the role of mechanical engineer to the society.	K2	CO1	1M
	b) What is a ceramic?	K1	CO1	1M
	c) List the components of a SI engine.	K1	CO2	1M
	d) What are CNC machines?	K1	CO2	1M
	e) Summarize the applications of Robots.	K2	CO3	1M
UNIT-IV				
2.	Explain the role of mechanical engineering in energy sector.	K2	CO1	10M
OR				
3.	What are smart materials and discuss about few smart materials and their applications.	K2	CO1	10M
UNIT-V				
4.	List various joining processes. Explain the principle of one joining process with the help of a neat sketch.	K2	CO2	10M
OR				
5.	Sketch the Otto cycle and discuss its working principle.	K2	CO2	10M
UNIT-VI				
6.	Explain the working of hydro power plant with a neat schematic diagram.	K2	CO3	10M
OR				
7.	Compare Belt, Rope, Chain and Gear Drives.	K3	CO3	10M