MALINENI LAKSHMAIAH WOMEN'S ENGINEERING COLLEGE
(AUTONOMOUS)
I-B.Tech I-Semester Regular Examinations (MR23), February - 2024
Basic Civil and Mechanical Engineering
(Common to CSE, IT)

Time: 3 hours   Max. Marks: 70

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1. Question Paper consist of two parts viz., Part -A & Part -B with equal weightage of 35 marks each.
2. Answer all 5 Questions in Section A of each Part. Each question carries 1 Mark.
3. Answer one question from Section B of each part. Each question carries 10 Marks.

PART–A

SECTION-A (1 X 5M = 5M)

		Marks	CO	BL
1. a)	What are the different Construction Materials	(1M)	CO1	L2
b)	What are the instruments used for measuring the vertical measurements	(1M)	CO3	L2
c)	What is contour gradient and horizontal equivalent	(1M)	CO2	L2
d)	What are the various sources of water	(1M)	CO3	L2
e)	What are the components of permanent way	(1M)	CO2	L2

SECTION-B (3 X 10M = 30M)

2	a) Explain about role of a civil engineer in a society.	(5M)	CO1	L2
	b) What are the various disciplines of a civil engineering and explain any of two.	(5M)	CO1	L2
	(OR)			
3	a) Explain in detail about the following construction materials.	(5M)	CO1	L2
	i) Bricks	(5M)	CO1	L2
	ii) Aggregates			
	b) Write in detail about the prefabricated construction techniques.			

4	a) What are the objectives of surveying and what are different methods to measure the horizontal measurement approximately.	(5M)	CO2	L2
	b) What is bearing and what are the types of bearings.	(5M)	CO2	L3
	Whole circle bearing = 130°. Calculate Reduced bearing for this whole circle bearing			
	(OR)			
5	a) The following consecutive readings were taken with a dumpy level and 4m leveling staff. The readings are 1.895m, 1.500m, 1.865m, 2.570m, 2.990m, 2.020m, 0.2410, 2.520m and 2.960m. The level was shifted after fourth and sixth readings. The reduced level of the first point was 30.5m. Rule out a page of level book and fill all the column. Use Height of the Instrument method and apply arithmetic checks.	(5M)	CO2	L2
		(5M)	CO2	L3
	b) What is contour? Explain about characteristics of contours.			

6	a) Write about importance of transportation in nation's economic development. b) What are the types of highway pavements and explain the simple differences between flexible and rigid pavements.	(5M) (5M)	CO3 CO3	L3 L2
	(OR)			
7	a) What are the various source of water and explain the specifications of quality of water. b) Explain in detail about rainwater harvesting.	(5M) (5M)	CO3 CO3	L2 L2

PART–B

SECTION-A (1 X 5M = 5M)

		Marks	CO	BL
8. a)	Define casting	(1M)	CO4	L1
b)	Write the applications of belt drive	(1M)	CO4	L1
c)	Define robot	(1M)	CO5	L1
d)	Draw the PV diagram of Otto cycle	(1M)	CO5	L2
e)	Define refrigeration	(1M)	CO6	L1

SECTION-B (3 X 10M = 30M)

9	a) Discuss the role of mechanical engineering in industries. b) Discuss the technologies of mechanical engineering in automotive sector	(5M) (5M)	CO4 CO4	L2 L1
	(OR)			
10	a) Discuss the role of mechanical engineering in society. b) Explain the technologies of mechanical engineering in manufacturing sector.	(5M) (5M)	CO4 CO4	L2 L2

11	a) Discuss the steps involved in making a casting b) Explain the working of SI engine with PV diagram	(5M) (5M)	CO5 CO5	L4 L2
	(OR)			
12	a) Describe the vapour compression refrigeration system with a neat sketch b) Compare four-stroke and two-stroke engines.	(5M) (5M)	CO5 CO5	L2 L2

13	a) Differentiate open belt drive and cross belt drive b) Describe Robotic arm configurations with neat sketches	(5M) (5M)	CO6 CO6	L2 L2
	(OR)			
14	a) Explain the hydro power plant with neat sketch. b) Discuss the working of a nuclear power plant with a neat sketch	(5M) (5M)	CO6 CO6	L2 L2

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