RV Educational Institutions ®
RV College of Engineering ®

Autonomous Institution Affiliated to Visvesvaraya Technological University, Belagavi

Approved by AICTE, New Delhi

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Academic year 2023-2024 (Even Sem)

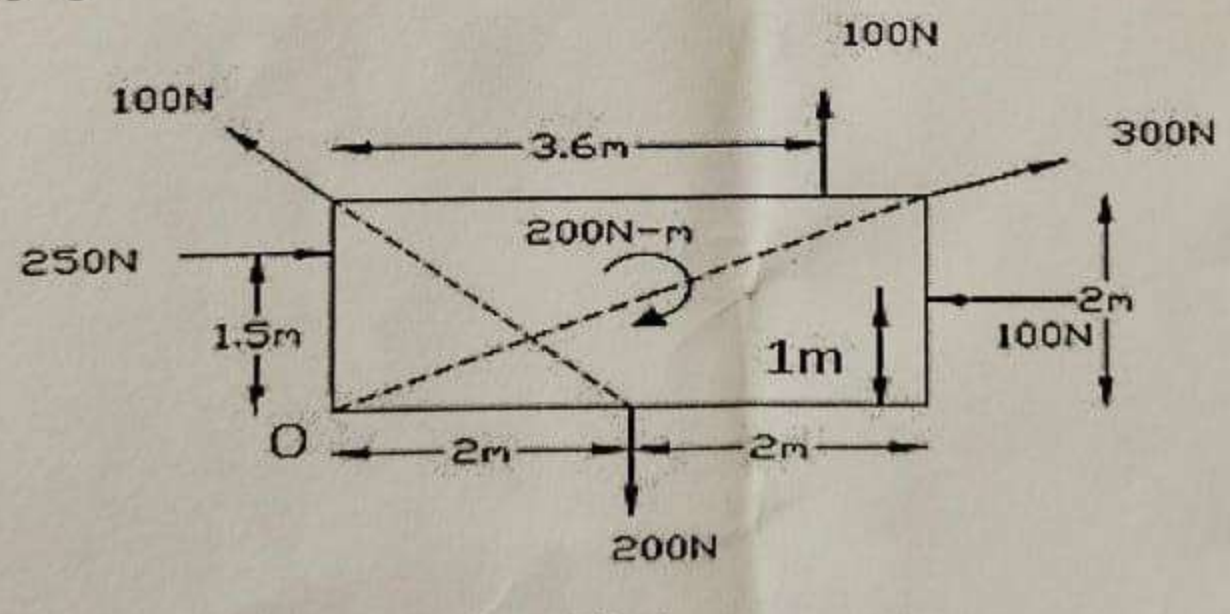
DEPARTMENT OF

CIVIL ENGINEERING

Date	14/05/2024	Maximum Marks	50
Course Code	CV123ATB	Duration	90 Min (T)
Sem	II	CIE I	
ELEMENTS OF CIVIL ENGINEERING			

Instructions:

1. All questions are compulsory.

Q. No.	Questions	Marks	CO	BTL
1.	Briefly explain the role of Civil Engineer in the infrastructural development of nation.	**10**	3	1
2.	Explain briefly the scope of Civil Engineering in: i. Environmental Engineering ii. Surveying	**10**	2	1
3.	Determine the magnitude and direction of the resultant for the system of coplanar forces shown in Fig. 3. Also determine the position of resultant with respect to 'O'  Fig.3	**10**	4	3
4.	a) Enlist the properties of bricks.	**05**	2	2
	b) Differentiate between RCC and PCC	**05**	1	2
5.	Enumerate the different types of structural steel.	**10**	1	1

BT-Blooms Taxonomy, CO-Course Outcomes, M-Marks

Marks Distribution	Particulars		CO1	CO2	CO3	CO4	L1	L2	L3	L4	L5	L6
	Test	Max Marks	15	15	10	10	30	10	10	-	-	-

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Date	19/06/2024	Maximum Marks	50
Course Code	CV123ATB	Duration	90Min
Sem	II	CIE II	
ELEMENTS OF CIVIL ENGINEERING			

Instructions: All questions are Compulsory

PART A- TEST

Q. No.	Questions	Marks	CO	BTL
1.	Bangalore city with a population of 1.4 crore, is currently facing significant challenges in managing solid waste. The rapid urbanization and population growth have led to an increase in the amount of waste generated daily, putting immense pressure on the city's waste management infrastructure. The inefficiencies in waste collection, segregation, recycling, and disposal are leading to environmental pollution and public health concern. For the above context, i. Mention the different types of solid waste generated in Bengaluru City. ii. What sustainable practices and innovations can be adopted to reduce waste generation and improve recycling rates?	10	2	3
2.	What are the steps involved in the wastewater treatment process, and how does each step contribute to the overall effectiveness of treating wastewater to make it safe for discharge or reuse.	10	2	3
3	What are the different types of urban floods, the primary causes behind them, and the most effective mitigation measures that cities can implement to minimize their impacts.	10	2	3
4	Discuss various types of beam and column used in buildings.	10	1	3
5	List different types of stair case and discuss any two type of stair case.	10	1	2

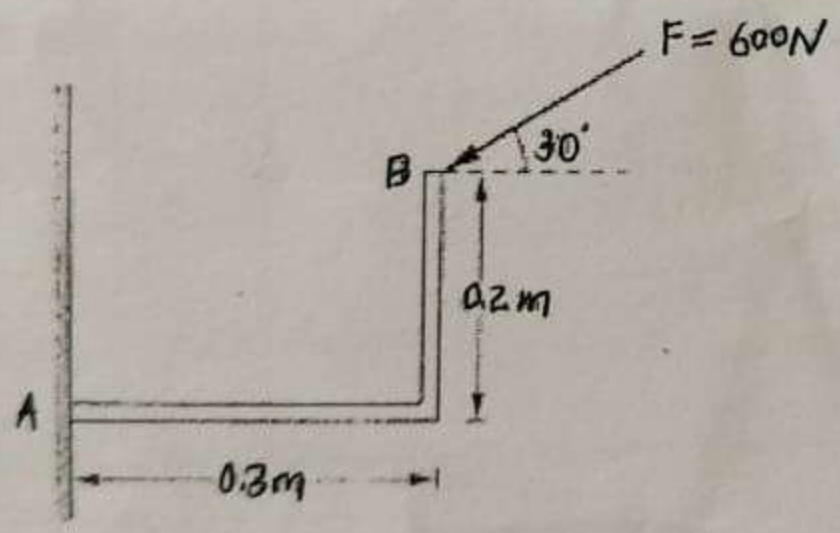
BT-Blooms Taxonomy, CO-Course Outcomes, M-Marks

Marks Distribution	Particulars		CO1	CO2	CO3	CO4	L1	L2	L3	L4	L5	L6
	Test	Max Marks	20	30	**	**	**	10	40	**	**	**

Date	02/07/2024	Maximum Marks	50(Test)+10(Quiz)
Course Code	CV123ATB	Duration	90Min+30 Min
Sem	II	CIE III	
ELEMENTS OF CIVIL ENGINEERING			

Instructions : All questions are Compulsory

PART A- QUIZ

Q. No.	Questions	Marks	CO	BTL
1.	List the application of Geotechnical engineering	2	1	1
2	Arrange the flexible pavement layer in chronological order based on construction i.Sub base ii. Wearing course iii. Subgrade iv. Base course v. Binder course	2	1	1
3	State Varignons theorem	2	2	2
4	Find the moment of force F = 600N about A as shown in the Figure 	2	2	1
5	Define Gauge in railways and what is the Gauge length adopted in India ?	2	1	1

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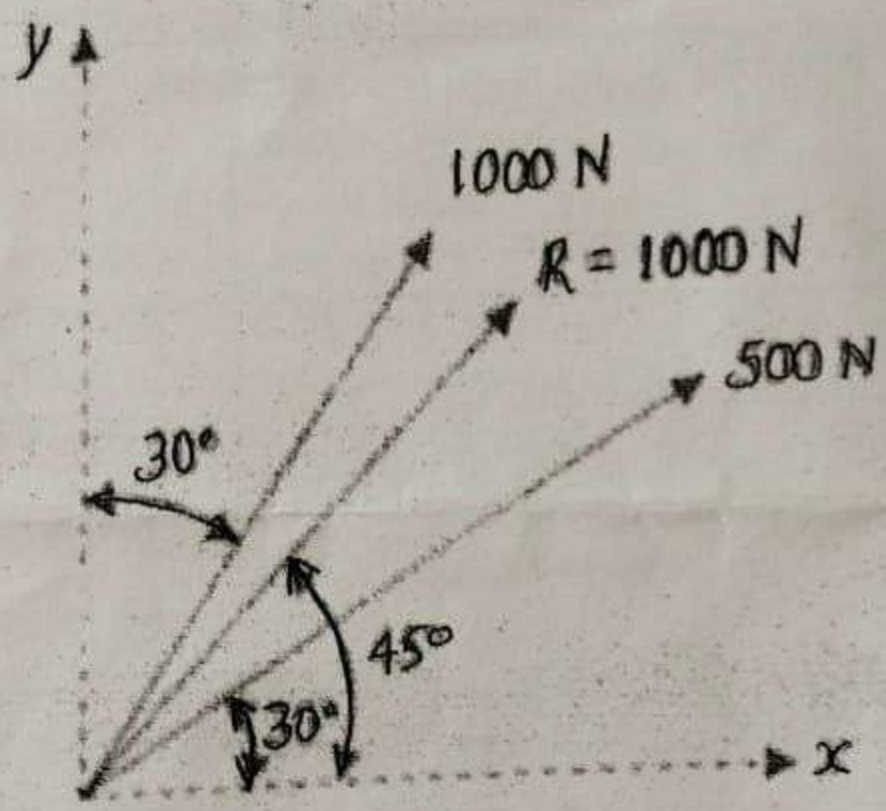
PART B

Q. No.	Questions	Marks	CO	BTL
1.	Describe the idealization made in Engineering Mechanics and also the characteristics of a force	10	1	2
2.	Explain briefly the scope of Civil Engineering in: i. Water resource Engineering ii. Construction Management	10	1	2
3	Draw a neat sketch of permanent way and mention the ideal requirements of permanent way.	10	1	3
4	With a neat sketch , explain the components and functions of flexible pavements	10	2	2
5	Two forces acting on a body are 500 N and 1000 N as shown in Figure below .Determine the third force F such that the resultant of all the three forces is 1000 N, directed at 40° to x-axis. 	10	1	3

BT-Blooms Taxonomy, CO-Course Outcomes, M-Marks

Marks Distribution	Particulars		CO1	CO2	CO3	CO4	L1	L2	L3	L4	L5	L6
	Test	Max Marks	40	10	**	**	**	30	20	**	**	**

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CV113ATB / CV123ATB / 22ES24B

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RV COLLEGE OF ENGINEERING®

(An Autonomous Institution Affiliated to VTU)

I / II Semester B. E. Regular / Supplementary Examinations Aug-2024

ELEMENTS OF CIVIL ENGINEERING

Time: 03 Hours *Maximum Marks: 100*

Instructions to candidates:

1. Answer all questions from Part A. Part A questions should be answered in first three pages of the answer book only.
2. Answer FIVE full questions from Part B. In Part B question number 2 is compulsory. Answer any one full question from 3 and 4, 5 and 6, 7 and 8, 9 and 10.

PART-A

			M	BT	CO
1	1.1	Enlist any two idealizations commonly employed in study of mechanics.	02	1	3
	1.2	Define the components of moment of forces.	02	2	3
	1.3	Enlist any two functions of chejja.	02	2	1
	1.4	Define: a) plinth area; b) carpet area.	02	1	1
	1.5	Enlist any two sources of solid waste.	02	1	2
	1.6	Define smart building.	02	2	2
	1.7	List the two common forms of highway pavement.	02	1	4
	1.8	List any two functions of tunnels.	02	3	4
	1.9	The basic classification of foundation upon founding depth is _____ & _____.	02	2	4
	1.10	Mention any two objectives of smart cities.	02	3	4

PART-B

2	a	Elaborate different force systems with examples.	08	2	3
	b	Explain the scope of Civil Engineering in the field of: *i)* Structural Engineering; *ii)* Geotechnical Engineering.	08	2	1
3	a	Enlist and explain any four commonly used construction chemicals.	08	3	1
	b	Explain Plinth level, floor level, sill level, lintel level, roof level with neat sketch.	08	1	1
		OR			
4	a	Differentiate: *i)* Masonry Construction; *ii)* Concrete frame construction.	08	3	1
	b	Describe any four applications of: *i)* Bricks; *ii)* Concrete.	08	3	1
5	a	Define air pollution its causes and suitable remedial measures.	08	2	2
	b	What is energy efficient building, explain the design considerations?	08	3	2
		OR			

6	a	Define solid waste and explain the types of solid waste.	08	2	2
	b	Explain the concept of Smart Buildings and aspect of the design.	08	3	2
7	a	Discuss the basis for classification of roads based on location and function.	08	3	4
	b	Define multimodal transport system and explain its benefits.	08	4	4
		OR			
8	a	Explain the requirements of a permanent pavement.	08	2	4
	b	Discuss the basic classification of pavement with illustrative sketch.	08	2	4
9	a	Explain the process of origin and formation of soil.	08	3	4
	b	Explain any two types of shallow foundation.	08	3	4
		OR			
10	a	Define foundation, its function and briefly explain the classification.	08	2	
	b	Describe smart city in context of urban and rural development.	08	3	