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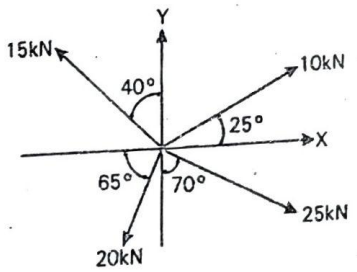
	MAHARAJA INSTITUTE OF TECHNOLOGY MYSORE Dept. of Civil Engineering 1st Internal Assessment 1st Sem.	Sub. Name : Introduction to Civil Engineering(BESCK104A) Schedule: 10/11/2023 and 2.15 pm – 3.45 pm Total Marks: 30

Instructions to students

1. Answer ONE full question from each part
2. Assume any missing data suitably

Q#		Question Description	M	BTL	COs
		PART A			
1	a	Mention the disciplines of civil engineering and explain any two.	7	2	1
	b	Summarize bricks and the requirements of a good brick to be used as a construction material.	8	2	1
2	a	Summarize cement and its types.	7	2	1
	b	Summarize the foundations in the field of construction.	8	2	1
		PART B			
3	a	Summarize force and also briefly explain the classification of force system with neat sketch.	8	3	3
	b	Determine the magnitude and direction of resultant of the force of the given system of forces as shown in Fig.3b.  Fig.3b	7	3	3
4	a	State and prove the parallelogram law of forces.	8	3	3
	b	Determine the magnitude and direction of resultant of the force of magnitude 12N and 9N acting at a point, if the angle between the two forces is 30°.	7	3	3

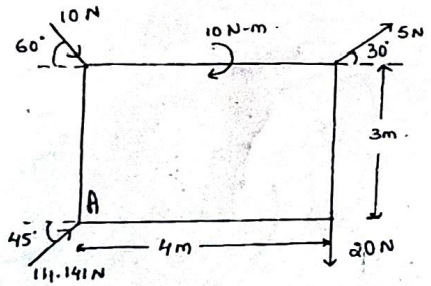
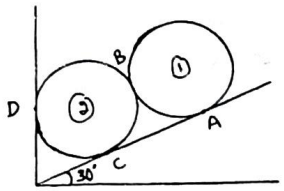
0.185

2	b	

	MAHARAJA INSTITUTE OF TECHNOLOGY MYSORE Department of Civil Engineering 2nd Internal Assessment 1st Semester.	Sub. Name : Introduction to Civil Engineering (BESCK104A) Schedule 08 / 12 /2023 and 2.15 pm – 3.30 pm Total Marks: 30

Instructions to students

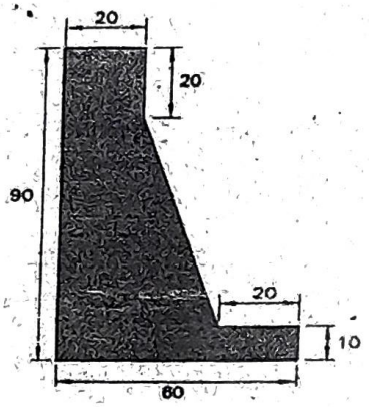
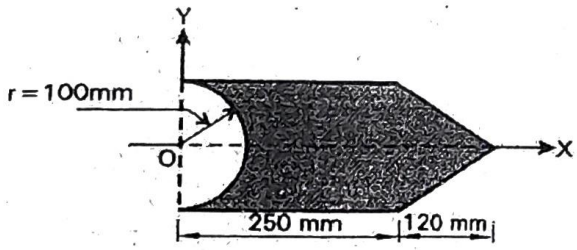
1. Answer ONE full question from each part
2. Assume any missing data suitably

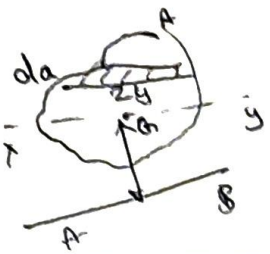
Q#		Question Description	M	BTL	COs
		PART A			
1	a	Define Sustainable Development Goals. List and Summarize the various goals of sustainable development set by United Nations.	8	2	2
	b	Summarize the remedial measures that cities can implement to reduce flood risk.	7	2	2
2	a	Summarize different methods to manage the solid waste in urban areas.	8	2	2
	b	Summarize the "Smart buildings" with their major benefits.	7	2	2
		PART B			
3	a	Calculate the resultant of the force system acting on the plate as shown in the figure with respect to A.  Fig.3(a)	8	3	3
	b	State and prove Varignon's theorem of moments.	7	3	3
4	a	Two identical rollers each of weight 200N are placed in a trough. Assuming all contact surfaces are smooth, calculate the reactions developed at contact surfaces A, B, C and D  Fig 4(a)	8	3	3
	b	Summerize Couple and its Characteristics.	7	2	3

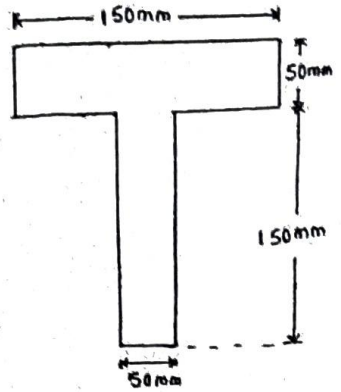
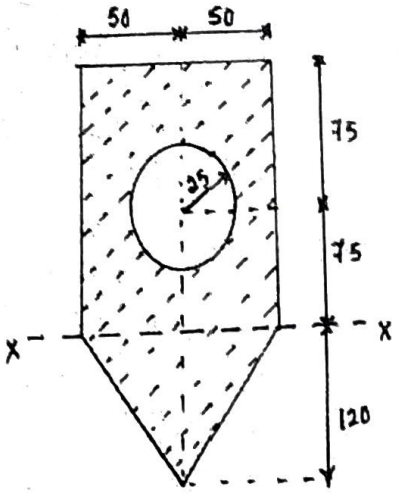
	MAHARAJA INSTITUTE OF TECHNOLOGY MYSORE **Department of Civil Engineering** **3rd Internal Assessment** **1nd Sem.**	**Sub. Name : Introduction to Civil Engineering(BESCK104A)** **Schedule: 09 / 01 /2024 and 2.15 pm – 3.30 pm** **Total Marks: 30**

Instructions to students

1. Answer any ONE full question from each part
2. Assume any missing data suitably

Q#		Question Description	M	BTL	COs
		PART A			
1	a	Determine an expression to locate the centroid of a semicircle using first Principle or by the method of integration.	7	3	4
	b	Determine the co-ordinates of the centroid of the area shown in the Fig.1(b). All dimensions are in mm.  Fig.1(b)	8	3	4
2	a	Determine an expression to locate the centroid of a rectangle using first Principle or by the method of integration.	7	3	4
	b	Determine the C.G of the shaded area with respect to given X and Y axes shown in Fig.2(b).  Fig. 2(b)	8	3	4



		PART B			
3	a	State and prove parallel axis theorem.	7	3	5
	b	Determine the radius of gyration of the T section about the co-ordinate axis shown in the Fig.3(b)  Fig.3(b)	8	3	5
4	a	Determine an expression to find the moment of inertia of a rectangle about the centroidal X- axis using first Principle or by the method of integration.	7	3	5
	b	Determine the moment of inertia of the shaded area about the x-x axis shown in Fig. 4(b). All dimensions are in mm.  Fig.4(b)	8	3	5