Model Question Paper-I with effect from 2022

CBCS SCHEME

First Semester B.E Degree Examination_____

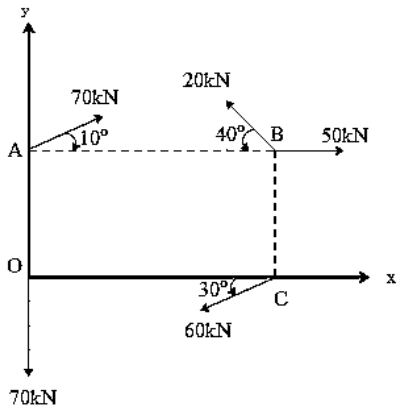
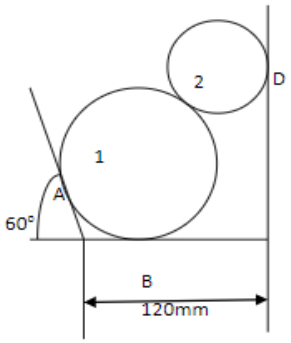
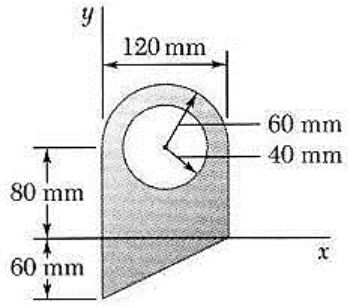
Introduction to Civil Engineering (BESCK104A)

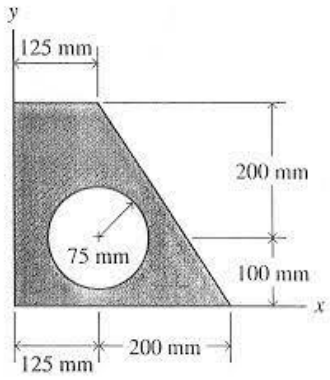
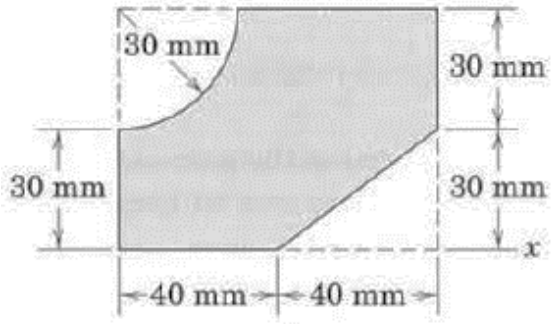
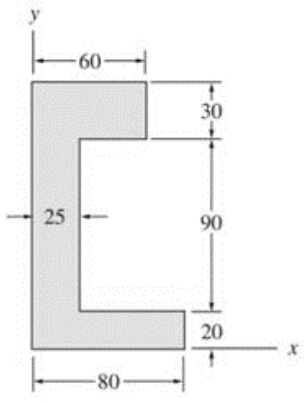
TIME: 03Hours **Max.Marks:100**

NOTES:

1. *Answer any **FIVE** full questions, choosing at least **ONE** question from each **MODULE.***
2. *VTU Formula Hand Book is permitted.*
3. *M – Marks, L – Bloom's Level, C – Course Outcomes*

Q No.		Module - 1	M	L	C
Q.1	a	Explain scope of the following branches of Civil Engineering Disciplines i) Structural Engineering ii) Construction Planning and Project Management	10	L2	CO1
	b	Explain the following building materials along with their application in construction i) Cement Mortar ii) Pre-Stressed Concrete	10	L2	CO1
		OR			
Q.2	a	Explain scope of the following branches of Civil Engineering Disciplines i) Environmental Engineering ii) Hydraulics and Water Resource Engineering	10	L2	CO1
	b	Explain the following structural elements of a building with their functions i) Masonry Wall ii) Staircase	10	L2	CO1
		Module – 2			
Q.3	a	Define Sustainable Development Goals. List and explain the various goals of sustainable development set by United Nations.	10	L2	CO2
	b	Explain the causes of Urban Floods. List the remedial measures to control urban floods.	10	L2	CO2
		OR			
Q.4	a	Explain different methods to manage the solid waste in Urban Areas.	10	L2	CO2
	b	Explain the methods to control sound and temperature to create a conducive atmosphere in a building.	10	L2	CO2
		Module – 3			
Q.5	a	State and Prove Parallelogram Law of Forces.	10	L2	CO3
	b	Determine the resultant of a given system of force Fig.5(b) about point A	10	L3	CO3

		 Fig. 5(b)			
		OR			
Q.6	**a**	Explain the basic idealizations in Engineering mechanics.	**10**	**L2**	**CO3**
	b	Two cylinders are placed in a ditch as shown in Fig.6(b) Determine the reactions at all the contact surfaces (A, B, C, D). Radius: Cylinder 1 = 100 mm, Cylinder 2 = 50 mm; Weight: Cylinder 1 = 2000 N, Cylinder 2 = 800 N  Fig.6(b)	**10**	**L3**	**CO3**
		Module – 4			
Q.7	**a**	Derive an expression to locate the centroid of a semicircle.	**8**	**L2**	**CO4**
	b	Determine the centroid of the shaded region shown in Fig.7(b) about x and y axis.  Fig.7(b)	**12**	**L3**	**CO4**
		OR			
Q.8	**a**	Derive an expression to locate the centroid of a rectangle.	**8**	**L2**	**CO4**

	b	Determine the centroid of the shaded region shown in Fig.8(b) about x and y axis.  Fig.8(b)	12	L3	CO4
		Module – 5			
Q.9	a	Derive an expression to locate the moment of inertia of a Triangle.	8	L2	CO5
	b	Determine the moment of inertia of the shaded region shown in Fig.9(b) about reference x and y axis.  Fig.9(b)	12	L3	CO5
		OR			
Q.10	a	Derive an expression to locate the moment of inertia of a circle.	8	L2	CO5
	b	Determine the polar moment of inertia of the shaded region shown in Fig.10(b)  Dimensions in mm Fig.10(b)	12	L3	CO5

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