



MAKE-UP EXAM

BESCK204A / BESCKA204

Second Semester B.E./B.Tech. Degree Examination, Nov./Dec. 2023

Introduction to Civil Engineering

Time: 3 hrs.

Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

Module - 1			M	L	C
Q.1	a.	List the different fields of civil engineering and explain the scope of following fields, i) Geotechnical Engineering ii) Structural Engineering.	10	L1	CO1
	b.	Explain briefly with neat sketch : i) Foundation ii) Chajja and Lintel iii) Column and beam iv) Masonry wall v) Staircase.	10	L1	CO1
OR					
Q.2	a.	Explain briefly : i) Environmental and sanitary engineering ii) GIS and Earth quake engineering.	10	L1	CO1
	b.	Explain Bricks and Enumerate the requirement of good brick.	5	L1	CO1
	c.	Explain the difference between RCC and PSC.	5	L1	CO1
Module - 2					
Q.3	a.	Explain Infrastructure and types of infrastructure.	6	L1	CO2
	b.	Explain smart city concept, clean city concept and safe city concept.	10	L1	CO2
	c.	Explain briefly Energy efficient buildings.	4	L1	CO2
OR					
Q.4	a.	Write a short note on Demolition and Recycled waste.	6	L1	CO2
	b.	Explain briefly solid waste management and urban air pollution management.	6	L1	CO2
	c.	Explain sustainable construction of buildings and sustainable development goals.	8	L1	CO2
Module - 3					
Q.5	a.	State and Prove Parallelogram law of forces.	8	L2	CO3
	b.	Determine that magnitude, direction, X and Y intercept of the resultant force system acting on the lamina with respect to O as shown in Fig Q5(b). All dimensions are in mm, each unit is 100mm.	12	L3	CO3

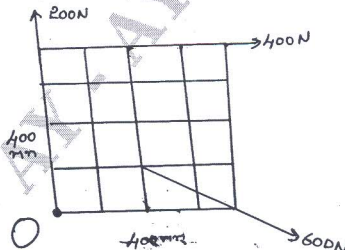


Fig Q5(b)

OR					
Q.6	a.	State and Prove Varignon's theorem.	8	L2	CO3
	b.	2 cylinder each of weight 100N and 200N on an inclined plane, which makes an angle of 70° with the vertical wall as shown in Fig Q6(b). Find the reaction at all contact points, assuming all surfaces to be smooth.	12	L3	CO3

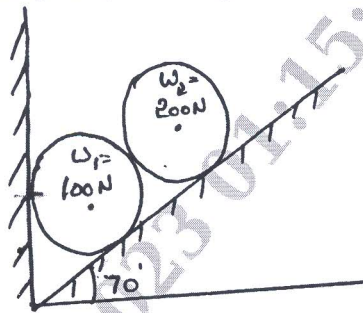


Fig Q6(b)

Module - 4					
Q.7	a.	Define : i) Centroid ii) Centre of gravity iii) Axis of symmetry.	6	L1	CO4
	b.	Locate the centroid of the shaded area shown in Fig Q7(b) with respect to OX and OY, all dimension in mm.	14	L3	CO4

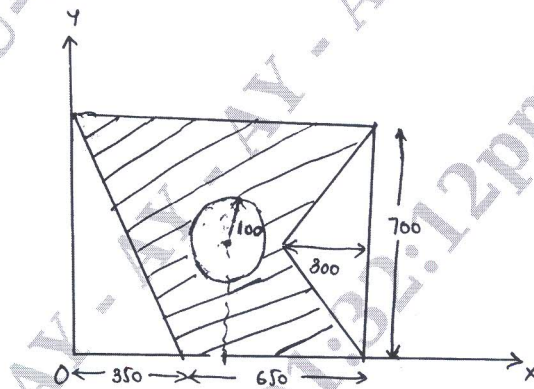


Fig Q7(b)

OR					
Q.8	a.	Derivation of expression for centroid of Equilateral triangle.	6	L2	CO4
	b.	Determine the centroid with respect to origin O for the section as shown in Fig Q8(b). All dimensions are in mm.	14	L3	CO4

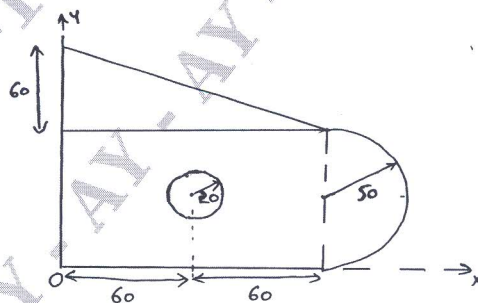
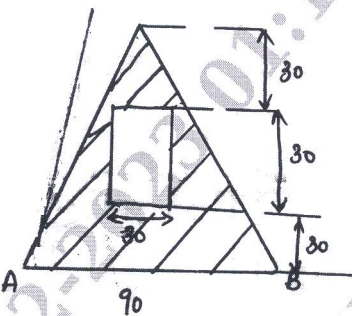
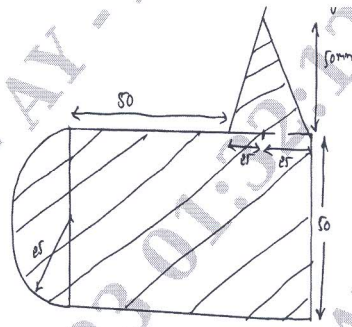


Fig Q8(b)

Module – 5					
Q.9	a.	State and prove Parallel axis theorem.	6	L2	CO5
	b.	Determine the MOI and radius of gyration of the area shaded shown in Fig Q9(b) about the base AB and centroidal axis parallel to AB, All dimensions are in mm.  Fig Q9(b)	14	L3	CO5
OR					
Q.10	a.	Define : i) Radius of gyration ii) Product of inertia	6	L1	CO5
	b.	Determine the MOI for the shaded area shown in Fig Q10(b) below above horizontal axis passing through centroidal area. all dimensional are in mm  Fig.Q10(b)	14	L3	CO5
