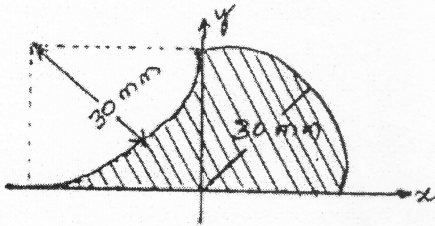
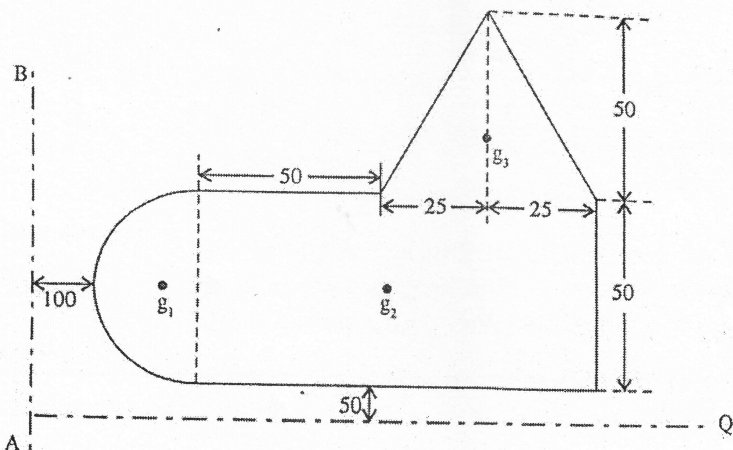
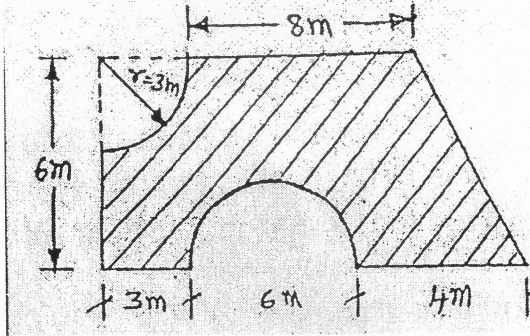


CONTINUOUS INTERNAL EVALUATION- 3

Dept: FY	Sem/Div: 1 st A, B & C	Sub: ELEMENTS OF CIVIL ENGINEERING	S Code: 18CIV14
Date: 18/12/19	Time: 9:30-11:00	Max Marks: 50	Elective: N
Note: Answer any 2 full questions, choosing one full question from each part.			

Q N	Questions	Marks	RBT	COs
PART A				
1 a	Derive the expression for M.I of a semicircular lamina of radius 'r' about its centroid axis parallel to the diameter.	7	L2	CO4
b	Determine the centroid of the lamina as shown in figure	10	L3	CO4
				
c	What is super elevation and its necessity	8	L2	CO5
OR				
2 a	Define the following a) Motion b) Kinetics c) Kinematics d) Path	4	L2	CO5
b	Determine the M.I of the area shown about the axes AB and PQ	15	L4	CO4
				
c	A ball is thrown vertically into the air at 36m/sec. After 3 seconds another ball is thrown vertically up. With what initial velocity must the second ball have to pass the first at 30m from the ground.	6	L3	CO5
PART B				
3 a	Derive the expression for centroid of semicircle.	5	L2	CO4
b	Determine the centroid of lamina shown in the figure and mark the centroid.	15	L3	CO4

CONTINUOUS INTERNAL EVALUATION- 3



c State and prove parallel axis theorem for M.I

5

L2

CO4

OR

4 a Define the following:

5

L2

CO5

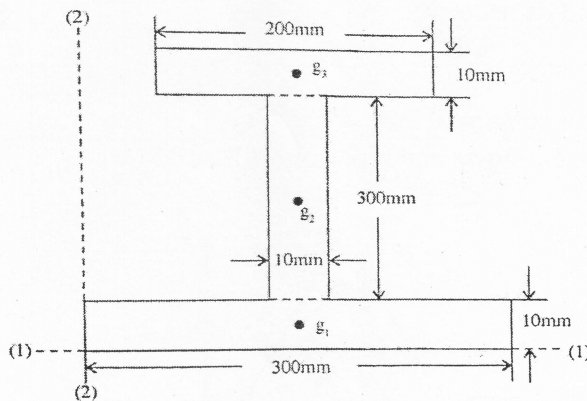
- a) Uniform velocity
- b) Rectilinear Motion
- c) Curvilinear Motion
- d) Projectile

b Determine the moment of inertia of the unequal I-section shown in figure about its centroid axis.

10

L3

CO4



c A burglar's car starts with an acceleration of 2m/sec^2 . A police van came after 10 secs and continued to chase the burglar's car with a uniform velocity of 40m/sec . Find the time taken by the police van to overtake the burglar's car,

10

L3

CO5