D.Y.PATIL COLLEGE OF ENGINEERING & TECHNOLOGY
KASABA BAWADA KOLHAPUR-416006
(An Autonomous Institute)
F. Y. B. Tech

Q. Paper Code:
Set-: I/II

END SEMESTER EXAMINATION,OCT/NOV.– 2021-22

Course Name: Fundamentals of civil Engineering Course Code: 201GEL107

Day and Date: Wednesday, 13/4 /2022
Time: 10 am to 1 pm

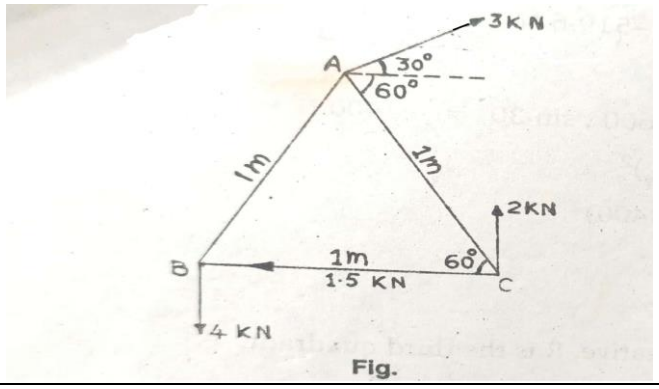
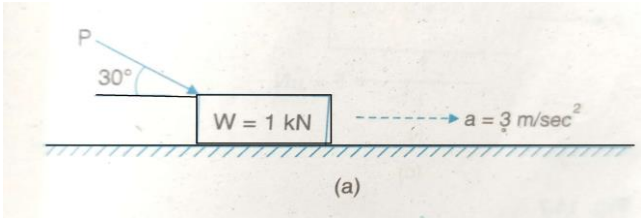
Seat No:

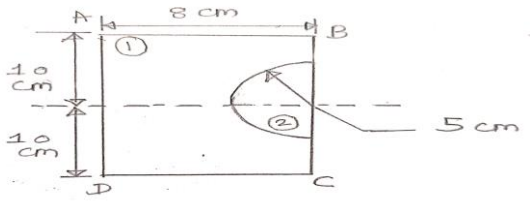
Max. Marks- 100

Instructions:

i. Question No. 1 is compulsory.
ii. Figure to the right indicate full marks.
iii. Give suitable general Instructions
iv. Any other Course Specific Instructions.
v. No questions should repeat from MSE/ISE

BT	CO's	Q.No.			Marks	Weightage
		Q.1	**Attempt the following**		**40**	**40%**
Understand	**107.1**	**a**	*(10 Marks)* i)What is water resource engineering? (4) ii)What is the relevance of Civil Engineering to other branches? (6)	Unit: 1,2 & 3		
Understand	**107.1**	**b**	*(10 Marks)* i)State uses of surveying. (3) ii)Define (3) 1.Reduced Level 2.Benchmark 3.Back sight iii) Enlist different types of EDM and explain EDM s based on range. (4)			
Understand	**107.2**	**c**	*(10 Marks)* i)What are properties of good timber. (4) OR What are requirements of good building stone. (4) ii)Explain components of substructure. (6)			
		d	*(10Marks)* i)What is the application of smart materials in civil engineering any five. (5) OR Explain Geotechnical engineering (5) ii)Write a note on planimeter. (5)			

		Q.2	**Attempt (any one options are allowed for sub questions)**		**20**	
Understand	**107.3**	**a**	Explain types of system of forces. *(6)* *OR* Explain the types of loads applied on beam with neat sketch.	Unit: 4		
Apply	**107.3**	**b**	A simply supported beam 5m span carries UDL 2KN/m on right half span and also a concentrated or point load of 4KN at centre. Find reactions at the support. (7)			
Apply	**107.3**	**c**	An equilateral triangle of side 1m is acted upon by forces as shown in fig. Find the resultant of the force system, in magnitude and direction. (7)  Fig.			
		Q.3	**Attempt (any four questions)**		**20**	**60%**
Understand	**107.4**	**a**	Explain types of impact. (5)			
Understand	**107.4**	**b**	Define impact and coefficient of restitution. (5)			
Apply	**107.4**	**c**	Body A and B is moving in the same direction with a velocity of 5m/s and 2m/s respectively. The mass of body A is 7kg while that of body B is 5kg.If the coefficient of restitution is 0.6 Determine the velocities of two bodies after impact. (5)	Unit: 5		
Apply	**107.4**	**d**	A block weighing 1KN rests on a horizontal plane as shown in fig. a. Find the magnitude of the force P required to give the block an acceleration of 3 m/sec^2 to the right. The coefficient of friction between the block and the plane is 0.25. (5)  			
Understand	**107.4**	**e**	State law of conservation of momentum and Newton's law of collision of elastic bodies. (5)			
		Q.4	**Attempt (any one options are allowed for sub questions of**		**20**	

			a,b,c…….)			
Understand	**107.5**	**a**	State perpendicular axis theorem and parallel axis theorem. (4)			
Understand	**107.5**	**b**	Define centroid and center of gravity. (4) OR Define polar moment of inertia and radius of gyration .			
Apply	**107.5**	**c**	From a plate of 8 cm x 20 cm a semi-circle of 12 cm diameter is cut as shown in fig. The centre of the circle lies on the right-hand vertical edge and also bisects it. Determine the centroid of the remainder. (6) 	Unit: 6		
Apply	**107.5**	**d**	Calculate the moment of inertia for an inverted T-section as shown in fig. about its horizontal centroidal axis (6)