Exam Seat No: _____ Enrollment No: _____

C. U. SHAH UNIVERSITY

WADHWAN CITY

University (Summer) Examination-2015

Course Name : B.Tech. Sem-II Marks: 70

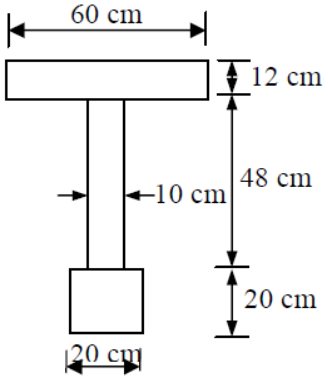
Subject Name : Basics of Civil and Structural Engg. Date: 29/05/2015

Subject Code: 4TE02BCS1 Duration: 2:30-5:30

Instructions:

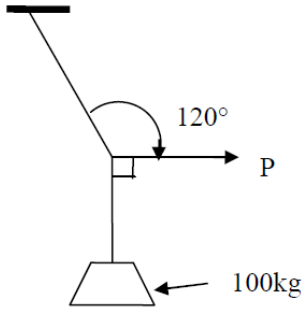
(1) Use of Programmable calculator & any other electronic instrument is prohibited.
(2) Instructions written on main answer Book are strictly to be obeyed.
(3) Draw neat diagrams & figures (If necessary) at right places.
(4) Assume suitable & Perfect data if needed.

Q-1	(a)	What is surveying and levelling?	2
	(b)	Explain Representative Fraction (RF)?	2
	(c)	Enlist different types of cement.	2
	(d)	Differentiate between: (1) Moment of couple v/s moment of force	2
	(e)	Write the units for Power, linear impulse, liner momentum, angular momentum, torque, work done.	2
	(f)	What are the uses of truss?	2
	(g)	What is contour line?	1
	(h)	Convert 1000MPa to KN/mm^2.	1
		Attempt any four	
Q-2	(a)	Explain fundamental principles of surveying.	5
	(b)	Explain the procedure reciprocal ranging.	5
	(c)	Give comparison between prismatic compass and surveyors compass.	4
Q-3	(a)	Discuss the classification of surveying based on; (a) instruments used, (b) Methods used, (c) Purposes or objects, (d) Nature of field.	7
	(b)	Describe briefly the seven elements involved in Remote sensing process.	7
Q-4	(a)	Explain properties and uses of concrete	5
	(b)	Explain the requirements, types and uses of bricks	5
	(c)	Differentiate between hydraulic lime and fat lime.	4
Q-5	(a)	Locate the centroid of a semicircle from its diametral axis using the method of integration.	5
	(b)	Determine moment of inertia of a section shown in Fig. about horizontal centroidal axis.	5

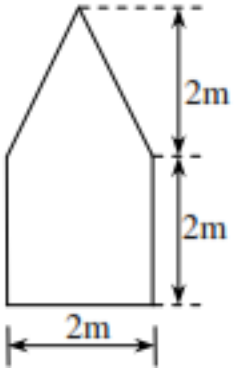


	(c)	Define Static, Dynamics, Kinematics and Kinetics.	4

Q-6 (a) Find the magnitude of the force P, required to keep the 100 kg mass in the position by strings as shown in the fig. 5

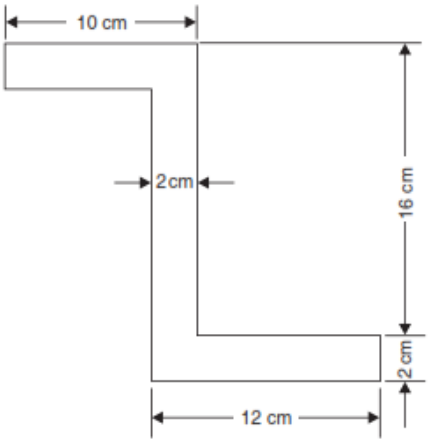


(b) Determine the moment of inertia of the section shown in fig. about an axis passing through centroid and parallel to the base. 5

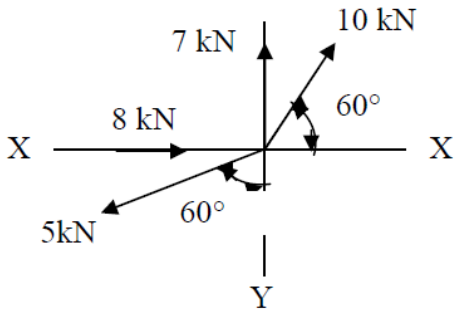


(c) Give the difference between scalar quantity and vector quantity. 4

Q-7 (a) Find centroid of a lamina shown in the fig. 7

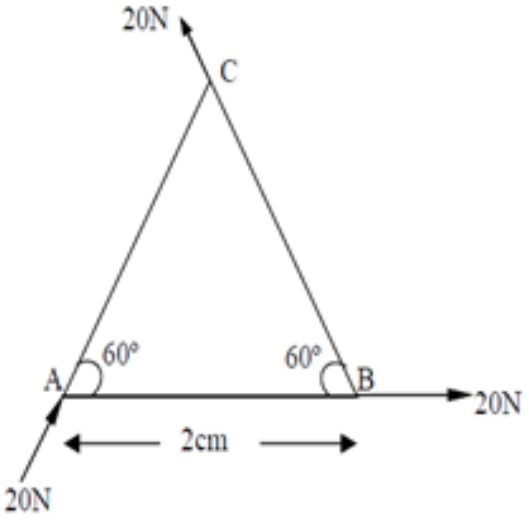


(b) Explain resultant force and equilibrant force. Find resultant of a force system shown in fig. 7



Q-8 (a) List the Fundamental principle of mechanics. And explain any three. 7

(b) Three forces are acting on a weightless equilateral triangular plate as shown in Fig. Determine the magnitude, direction and position of the resultant force. 7



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