CBCS SCHEME

USN					18ENG15
		1 1	1 1	A American Company (Section 1997)	

First Semester B.Arch. Degree Examination, Dec.2018/Jan.2019 **Building Structures - I**

Time: 3 hrs.

Max. Marks:100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each Module. 2. Missing data, if any, may be suitably assumed and clearly stated.

- 1 Explain the following with examples:
 - iii) Impact load i) Live load ii) Dead load iv) Earthquake load. (10 Marks)
 - What are the advantages and disadvantages of wood, steel, concrete, aluminum? (10 Marks)

OR

- What are the important properties of concrete? Also mention the advantages and disadvantages of concrete. (10 Marks)
 - Write important properties of wood, steel, aluminum concrete.

(10 Marks)

MODULE - 2

Define Mechanics. Explain the classification of Mechanics. 3

(06 Marks)

Explain the principle of transmissibility of forces. b.

(04 Marks)

Find the resultant of force system, Direction of force system shown in fig. Q3(c). (10 Marks)

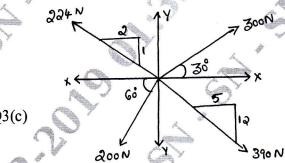
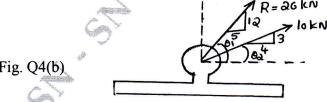


Fig. Q3(c)

- Define Force System. Briefly explain the classification of force system. (10 Marks)
 - 26kN force is the resultant of the two forces, one of which is as shown in fig.Q4(b). Determine the other force (10 Marks)

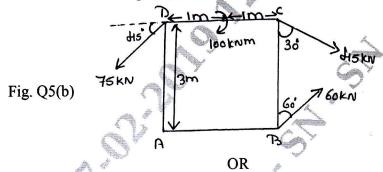


MODULE -3

5 a. Define Couple. Explain the characteristics of couple.

(05 Marks)

b. Find the magnitude and direction and distance of the resultant from the point 'A' for the system of forces shown in fig.Q5(b). (15 Marks)

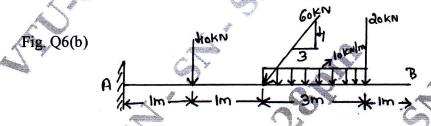


6 a. With neat sketches, explain different types of supports and loads.

(10 Marks)

b. Determine the support reactions for the beam shown in fig.Q6(b).

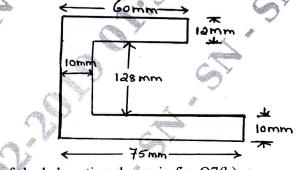
(10 Marks)



MODULE-4

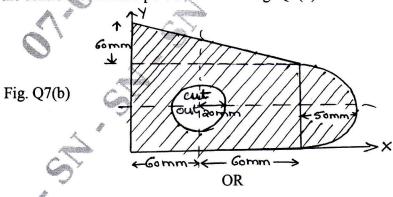
7 a. Locate the centroid of composite section shown in fig.Q7(a)

(10 Marks)



- Fig. Q7(a)
- b. Locate the centroid of shaded portion shown in fig. Q7(b).

(10 Marks)

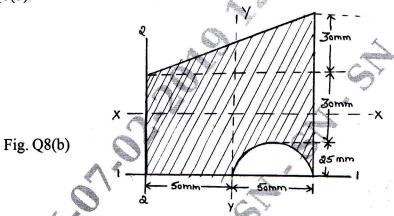


18ENG15

8 a. State and explain parallel axis theorem.

(05 Marks)

Find the least radius of gyration about X - axis and Y - axis of the shaded area shown in fig.Q8(b).



MODULE - 5

9 a. Briefly explain the methods used to analyze the truss by method of Joints.

(11 Marks)

- b. Explain the following:
 - i) Perfect frame
- ii) Deficient frame
- iii) Redundant frame.

(09 Marks)

OR

Analyse the truss shown in fig. Q10 by the method of joints. Tabulate the result and indicate the nature of force in the truss. (20 Marks)

