MODEL QUESTION PAPER (CBCS 2018 SCHEME) (For Reference only)

Note: The model question paper highlights the overall distribution of marks and provides generic examples of questions set with reference to the modules & syllabus.

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18ENG15

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

I Semester B.Arch. (CBCS 2018 Scheme) Examination …… 2018

BUILDING STRUCTURES-I

Time: 03 Hours ***Maximum Marks: 100***

Instructions for Candidates

1) All questions carry equal marks.
2) Answer FIVE Full questions, taking ONE question from each Module.
3) Follow written dimensions do not scale the drawing.

Module 1

1. a) Write important properties of Steel, Wood, Aluminium and Concrete. 12
   b) Explain with example Static load & Dynamic load. 08

OR

2. a) What are the different types of tests conducted on Fresh and hardened concrete. 08
   b) Explain the factors affecting the durability of concrete. 08
   c) Write a note on Thermo mechanically treated(TMT) steel 04

Module 2

3. (a) Differentiate between 09
   (i) Rigid body & Deformable body
   (ii) Concurrent force system & Parallel force system
   (iii) Resolution of force & Composition of force

   (b) Mention any 3 axioms of mechanics. 03

   (c) Determine the magnitude & direction of force 'F' such that resultant force 270N acts Y axis as shown in fig. 3c 08

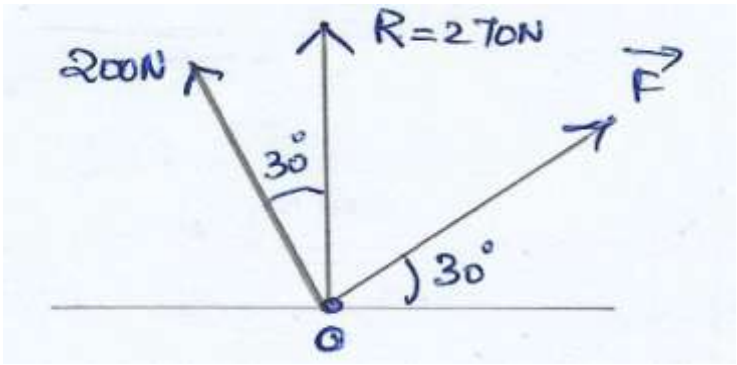

Fig. 3c

OR

4. (a) Explain the geometrical representation of moment of force about a point. 04

(b) A Rigid bar AB is subjected to a system of parallel force, reduce the system to an equivalent (Refer fig. 4b) 06
(i) Single Resultant
(ii)Force - Moment system at A
(iii)find equilibrant of the system

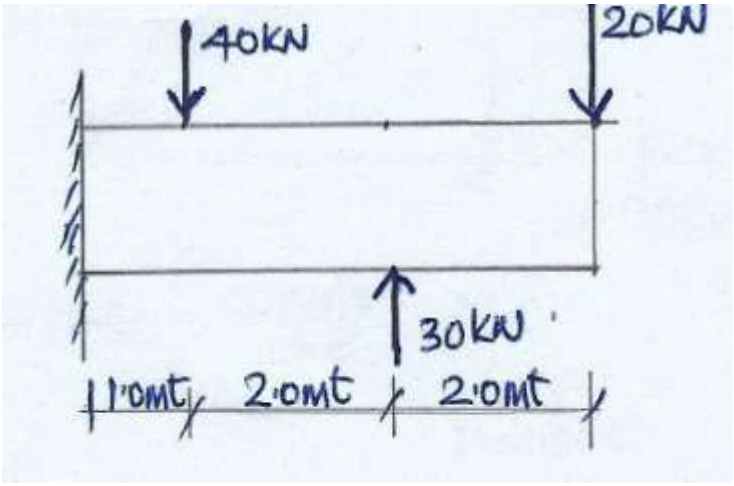

Fig. 4b

(c) Determine the magnitude & direction of resultant force for coplanar concurrent forces shown in fig. 4c 10

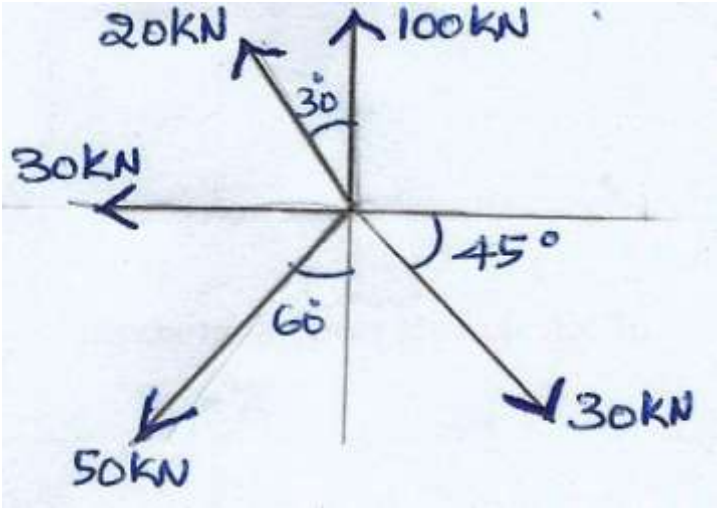

Fig. 4c

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Module 3

5. (a) Find the resultant of the force system acting on the lamina of equilateral triangular shape (Refer fig. 5a) 10

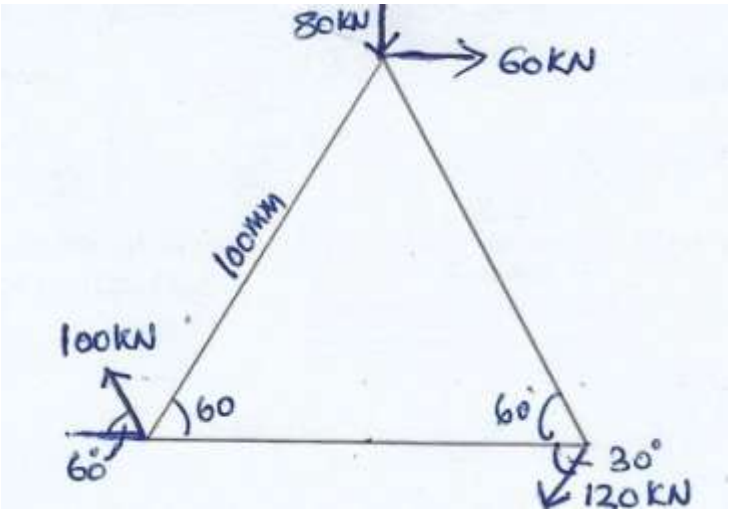

Fig. 5a

(b) Bracket is subjected to three forces & couple Determine the Resultant force completely (Refer 5b) 10

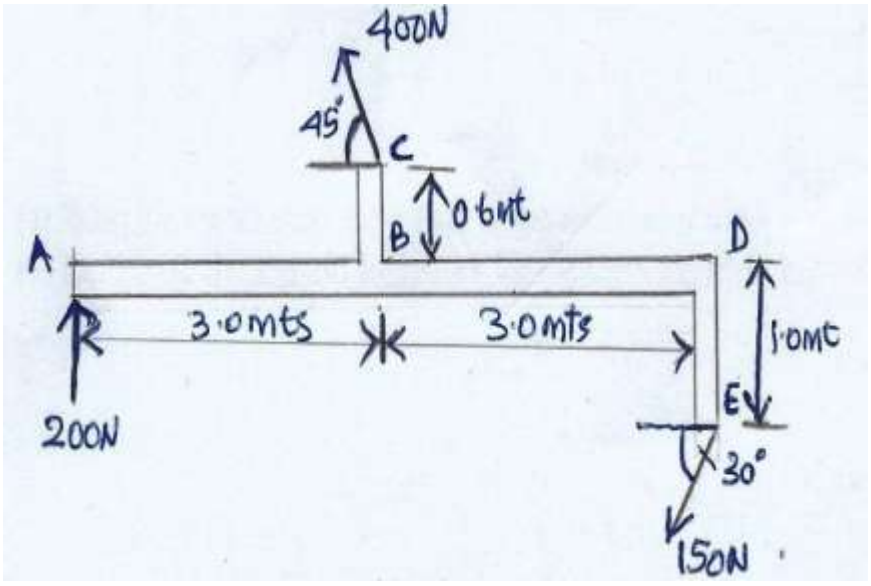

Fig 5b

OR

6. Explain briefly:
   (a) What are statically determinate & statically indeterminate beams with examples 08
   (b) Determine the support reactions for the beam shown is Fig. 6b 12

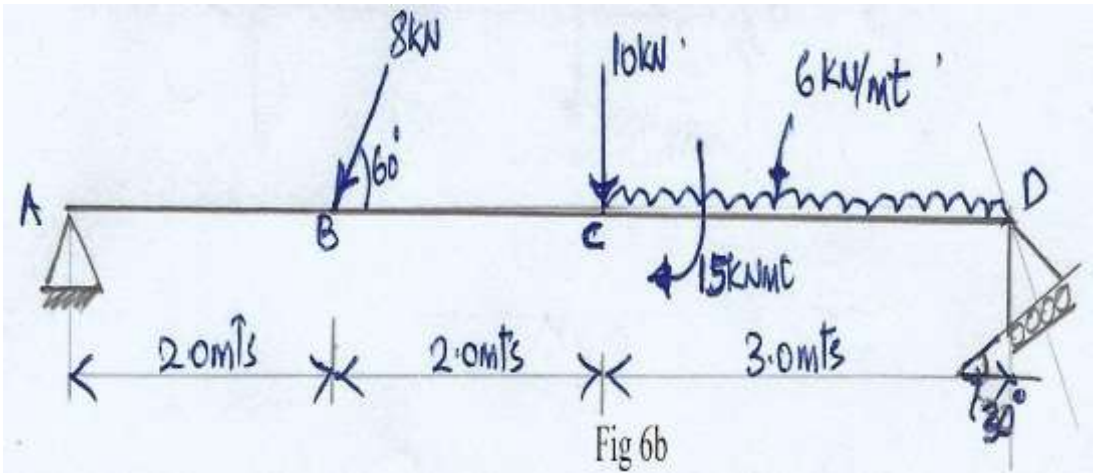

Fig. 6b

Module 4

7. (a) Locate the centriod of the Tee section shown fig. 7a 08

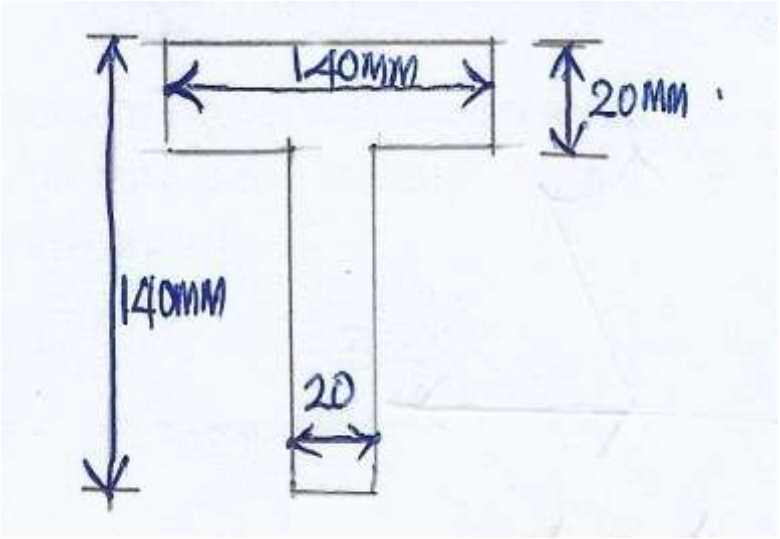

Fig. 7a

(b) Locate the centriod of the composite section shown fig. 7b 12

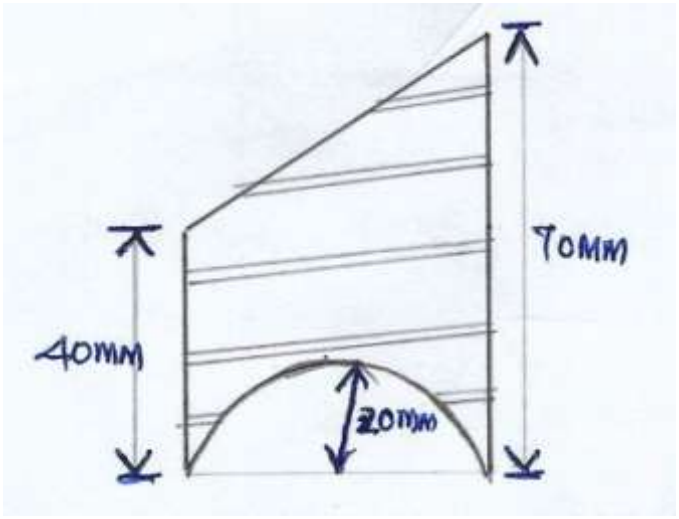

Fig.7b

OR

8. Compute the moment of inertia of the section shown in about its centriodal axis, also find polar moment of inertia. Fig. 8 08

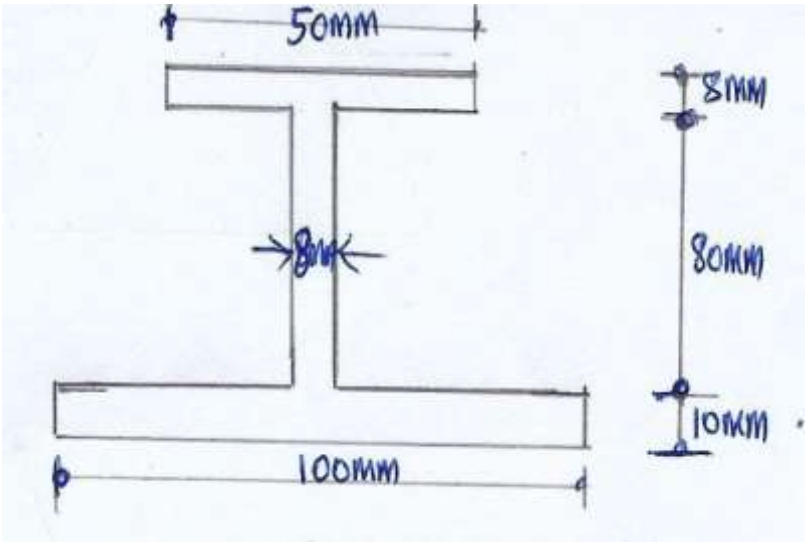

Fig.8

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Module 5

9. (a) What are the assumptions made in the analysis of truss. 05
   (b) Determine the support reactions for the truss shown in Fig. 9b. 06

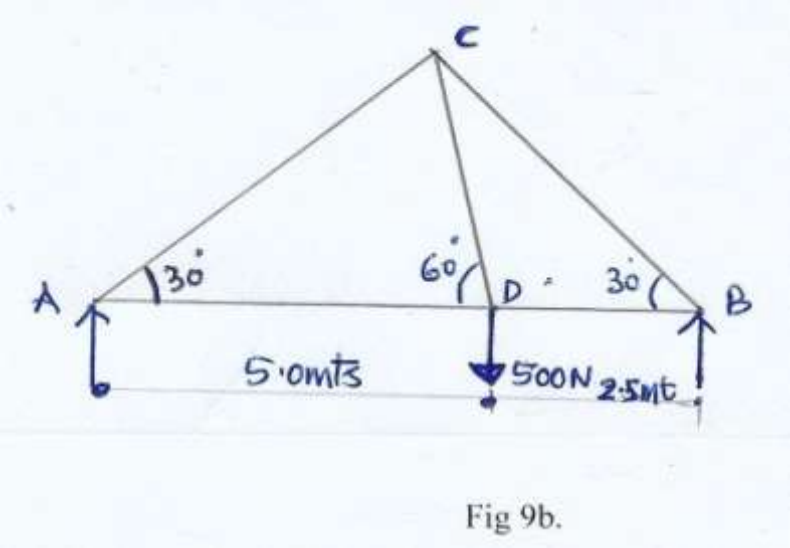

Fig 9b.

Fig. 9b

(c) Determine the force in each member for truss shown in Fig. 9b by "Method of Joints". 09

OR

10. Determine the force in each member by method of joints, mention the nature of force in each for the truss shown in fig. 10. 20

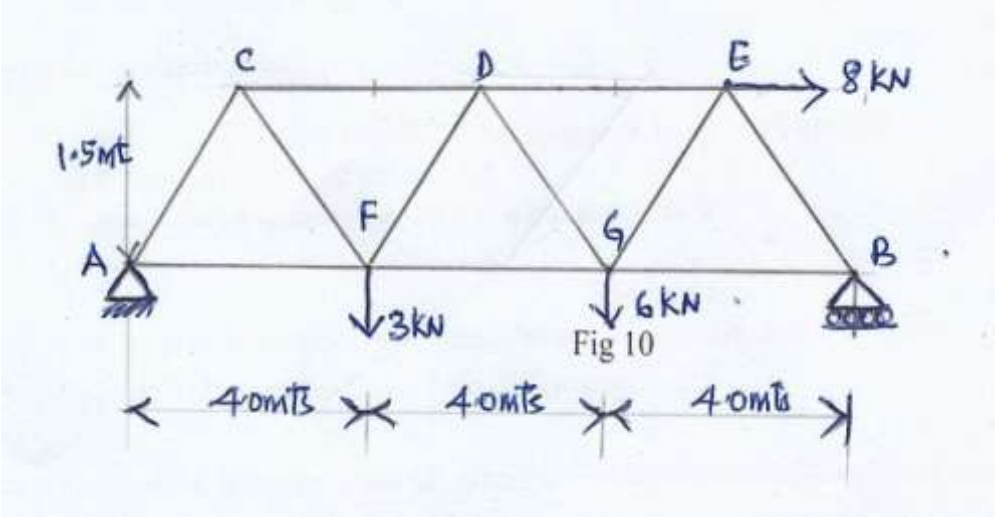

Fig 10

Fig. 10