SCHOOL OF PLANNING AND ARCHITECTURE, VIJAYAWADA

SEMESTER END EXAMINATIONS (REGULAR), MAY-2016

B.ARCH, I YEAR II SEMESTER

INTRODUCTION TO STRUCTURES (10110205)

Maximum Marks – 50 **Time – 2.00 Hours**

a) Answer any Two out of 1to 4 questions.
b) Question No.5 is compulsory and answer any four out of six sub-questions.
c) Scientific calculator is allowed.

Q1 a) An electric light fixture weighing 15N hangs from a point 'B' by 2 strings AB and BC as shown in fig – 1.Using Lami's theorem determine the forces in the strings AB and BC. **(10M)**

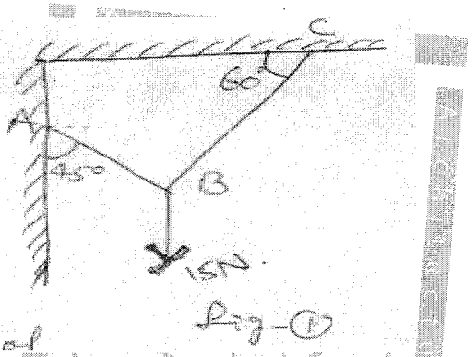


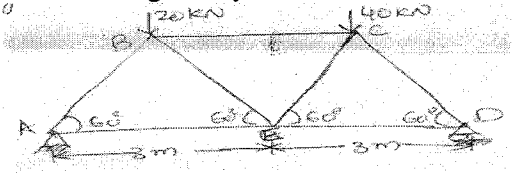
Fig-1

b) State Parallelogram Law of forces with neat sketch **(5M)**

Q2 **(15M)**

a) Define Bulk modulus
b) Derive the expression of Young's modulus in terms of Bulk modulus of rigidity.

Q3 Find the magnitude and nature of forces in all the members of truss shown in fig – 2 by method of sections. **(15M)**



P.T.O

Q4. a) Explain Importance of structural elements in the design of buildings. **(10M)**

b) Discuss Mixing of Concrete. **(5M)**

Q5. Write short notes on any four of the following: **(4x5= 20M)**

a) Find the magnitude of two forces such that if they act at right angles, their resultant is $\sqrt{10}$N, but if they act at 60^0 their resultant is $\sqrt{13}$N.

b) Define triangle law of forces and polygon law of forces with neat sketches.

c) A rod circular in section tapers form 20mm diameter at one end to 10mm diameter at the other end and is 200mm long. On applying an axial pull of 6000N it was found to extend by 0.068mm. Find the Young's modules of the material of the rod.

d) Draw the stress, strain curve for the mild steel and explain the curve.

e) Define Lamis theorem and explain it.

f) What are the field tests on bricks explain briefly.

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