

**SCHOOL OF PLANNING AND ARCHITECTURE, VIJAYAWADA**

**SEMESTER END EXAMINATIONS (REGULAR) APRIL – MAY - 2017**

**B. ARCH III YEAR VI SEMESTER**

**THEORY OF STRUCTURES (TS-6)**

Maximum Marks – 100

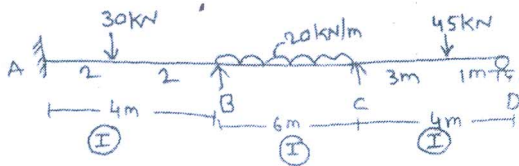
Time – 3.00 Hours

a) Answer any Four out of 1 to 7 questions.

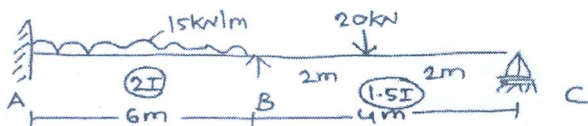
b) Question No.8 is compulsory and answer any four out of six sub questions.

Q1. Explain the procedure for Wind Load Analysis? (20M)

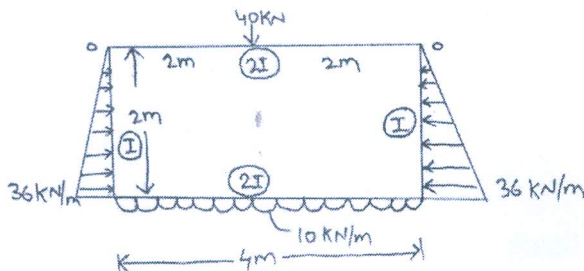
Q2. Analyse the given continuous beam by moment Distribution method. (20M)



Q3. Analyse the given continuous beam by slope-Deflection method. (20M)



Q4. Analyse the box Culvert as shown in figure by slope-Deflection method. (20M)



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- Q5. A Four storey reinforced Concrete frame of Special moment Resisting frame as shown in figure is situated in Zone – IV. The Height between floors is 3m and the total height of the building is 12m. The dead load and live load is lumped at respective floors. The soil below the foundation is assumed to be hard rock. Determine the total base shear as per IS 1893(Part I):2002. Distribute the base shear along height of building. Consider the value of importance factor as 1, Response Reduction factor as 5. (20M)

Infill walls : 230mm thick of exterior walls

115mm thick of interior walls

Materials : M20 grade concrete, Fe 415 steel

Size of Column : 230mm x 350mm

Size of Beam : 230mm x 450mm for beam on exterior wall  
230mm x 400mm for beam on interior wall

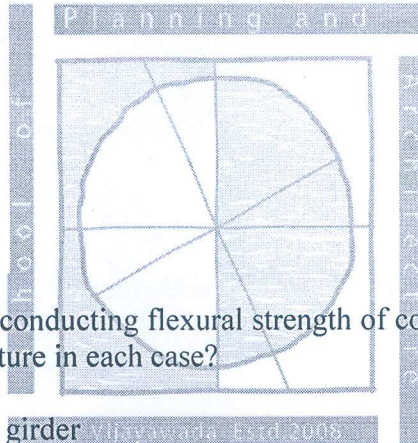
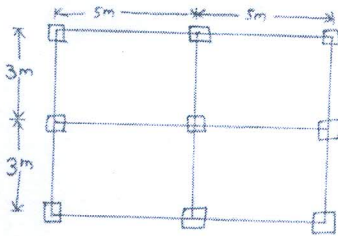
Depth of slab : 100mm

Imposed load : 3KN/m

Specific weight of R.C.C : 25KN/m<sup>3</sup>

Specific weight of Infill wall : 20KN/m<sup>3</sup>

Type of Soil : Rock

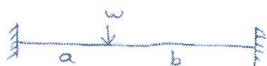


- Q6. Write step by step procedure for conducting flexural strength of concrete beam and write formulae for calculation of modules of rupture in each case? (20M)

- Q7. i. Write a short note on box girder (5M)  
ii. What are the advantages and disadvantages of box girder (5M)  
iii. Explain step by step procedure in post tensioning (10M)

- Q8. Write short notes on any FOUR of the following: (4x5= 20M)

- State slope Deflection equation
- Define pretensioning
- State the seismic zones of India
- Explain distribution factor in detail
- Define
  - Static determinacy
  - Static indeterminacy
- Draw S.F.D & B.M.D for the given figure



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