PVP 14

Code: CE7T1

IV B.Tech - I Semester – Regular Examinations – October - 2017

ADVANCED STRUCTURAL ENGINEERING
(CIVIL ENGINEERING)

Duration: 3 hours Max. Marks: 70

PART – A

Answer ***all*** the questions. All questions carry equal marks

11 x 2 = 22

1.

a) What is Impact Factor for RC Bridges?
b) Sketch a deck slab bridge and name the component parts.
c) What are the different loading vehicles as per IRC Class A?
d) Write about Piguad's Theory.
e) Name the various types of joints in water tanks.
f) What is an Intze Tank?
g) Define staging of an over head water tank.
h) Name different types of stresses developed in water tanks.
i) What is the effect of eccentric axial load on a tower?
j) Define Impact factor for a Gantry Girder.
k) What are communication towers?

PART – B

Answer any ***THREE*** questions. All questions carry equal marks.

3 x 16 = 48 M

2. a) Explain about classification of bridges with sketches. 8 M

b) Explain various types of loads, Forces and Stresses in RC Bridges. 8 M

3. Design a T Beam bridge with the following Data.
Clear width of roadway = 8 m.
Effective span of the bridge = 16 m.
Live load = IRC Class AA loading.
Wearing Coat thickness = 80 mm.
Concrete and steel = M25 concrete and Fe415 steel.

16 M

4. Design a circular overhead water tank of capacity 250000 L. Use M20 grade concrete and Fe415 steel. 16 M

5. Design a simply supported gantry girder with the following data:
Capacity of crane = 400 kN
Weight of crane excluding trolley = 230 kN
Minimum approach of crane Hook =1.20 m
Wheel Base = 3.5 m
Centre to centre distance between gantry rails = 16 m

Centre to centre distance between columns = 8m
Self weight of rail section = 300 N/m
Yield stress of steel = 250 N/mm^2

16 M

6. a) Distinguish between transmission line tower and communication tower. 8 M

b) What are the different loads to be considered in design of towers? 8 M