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B. TECH.

THEORY EXAMINATION (SEM–VI) 2016-17

ADVANCED CONCRETE DESIGN

Time : 3 Hours ***Max. Marks : 100***

Note : *Be precise in your answer. In case of numerical problem assume data wherever not provided. Attempt all questions. Use of IS:456 allowed. Use M20 & Fe 415*

SECTION-A

1 Explain the following : **(10×2=20)**

a) Explain joints in water tanks.

b) How you will determine capacity of water tank?

c) Write live load for gathering spaces

d) Define codes on culvert design.

e) Define building frames.

f) Define earthquake loads.

g) What is seismic zone?

h) How much seismic load will increase if we change zone 2 to zone 3?

i) Name zones of wind in India.

j) Define high performance concrete.

SECTION-B

2 Attempt any five of the following : **(10×5=50)**

a) Discuss design requirements as per IS:3370 for water tanks

b) How you will analyze building frame for lateral loads?

c) Explain raft foundation for over head water tank.

d) How you will design deck slab for concentrated load?

e) Describe with example concept of exact analysis.

f) Discuss codal recommendations on RCC bridge design.

g) How you will design deck slab in RCC culvert?

h) Explain by neat sketches elements of RCC culvert and loads acting on it.

SECTION-C

Attempt any two of the following : **(15×2=30)**

3. Design RCC dome of intze water tank for 250 klitres. Take staging height 22m.sbc 12kn/sqm. Assume other details.
4. Discuss method of design moments calculation in 6 story three bay multistory RCC frame.
5. Design a single slab bridge for the following requirements:
   a. Clear span =5m
   b. Clear width of carriage way=7.5m
   c. Live load class AA loading

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