BE - VIIth Semester Examination, 2018

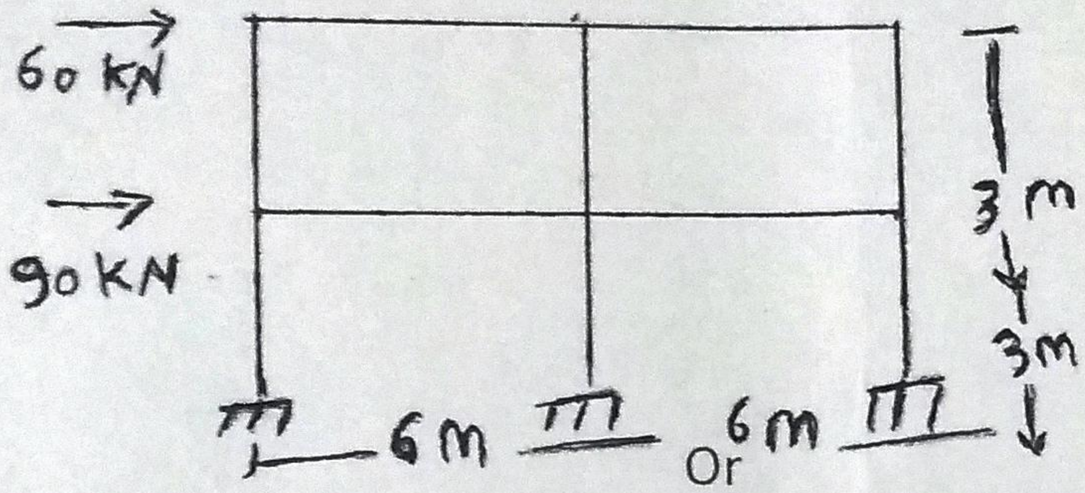
Subject: Advanced structural Design (RCC)

Paper: CE-702

Time : 3 Hours Maximum Marks -60

Note: Assume missing data suitably according to is specification.

Q.1. Find bending moment, shear force and arcial force in Beam EF and column using portal method? 12



Or

(a) Discuss classification of shearwall ? 6

(b) Explain the difference between a braced and an unbraced building . What condition should be satisfied by a braced building ? 6

Q.2. Design the stem of a cantilever retaining wall to retain leveled Earth 6.0m above base slab. Take density of soil as 18KN/m^3 and angle of repose 30^0 . Apply check for shear . sketch the detail . Assume suitable data according to Is specification . 12

Or

(a) Define retaining wall ? 4

(b) Discuss the function of shear key ? 4

(c) Explain the design of counter fort retaining wall ? 4

Q.3. Design the roof dome. Top ring beam and cylindrical wall of an Intze tank having diameter =12m Height of cylindrical wall = 8m Rise of top done =1.8m 12

Or

Design a circular tank with flexible base for capacity of 600KL . The depth of tank is 6.0m Including a free board of 0.2m . 12

Q.4. Design the bunker to be used for storing coal with following: 12

(a) Capacity of bunkar = 500 KN

(b) Unit weight of coal = 8 KN/m^3

(c) Size of bunkar in plan = 4.0 x 4.0m

(d) Bottom opening = 0.5mx 0.5m

Or

Distinguish between behaviour of bunker and a silo also explain the procedure for design of a silo. 12

Q.5. (a) Explain pre-tensioned and port tensioned ? 4

(b) What are different type of "losses" encountered in prostressing concrete ? 4

(c) Discuss advantage of prostressed concrete ? 4

Or

Design a solid slab bridge for the following data: 12

(a) Clear span =6.5m. clear weidth of Roadway = 7.6m , thickness of weaving coat =75mm Bearing on support =400mm.

(b) IRC class AA tracked vehicle , Use m25 Grade concrete and Fe415 grade steel .
