**Rajasthan Institute of Engineering & Technology, Jaipur.**

**Department of Civil Engineering**

**I Mid Term examination**

**Session: 2018-19**

**Subject – Building Design (5CE4A)**

**Semester – V th (3Rd year) Set -A**

Time: 2 hrs. M.M.:20

**Instruction for students:**

1. No provision for supplementary answer book.

Q.1 A three Storey RC frame building placed in bhuj with following data:-

plan Dimension = 7m

Story height = 3 m

Total weight of beam in a storey = 130 kN

Total weight of column in a storey = 50 kN

Total weight of slab in a storey = 250 kN

Total weight of wall in a storey = 530 kN

Live load of the structure = 130 kN

Weight of terrace floor = 655 kN

Structure resting on the hard rock.

Determine the total base shear and Lateral load at each floor level.

Or

Q.1 Determine the design base shear for the plain frame of a four storey building the building is placed in Jaipur

a) floor heigh­t – 3.m

b) live load – 3 kn/m2

c) Total Dead load on floor of Component = 2.5 kn/m2

d) Total dead load on roof = 2 kn/m2

e) Plan Dimension = 15x 20 m

Q.2 Determine the design base shear for the plain frame of a four storey building the building is placed in Delhi

a) floor heigh­t – 3.5 m b) live load – 3.5 kn/m2

c) column size – 250 mm×450mm

d) beam size – 250 mm×400 mm

e) slab thickness – 100 mm

f) types of soil – silty soil

g) in fill wall – 250 mm thick

**OR**

Q.2 Calculate seismic load for the building frame if seismic zone v and soil is medium.

The data given:-

i) column size = 550mm x 550mm

ii) beam size = 400mm x 500mm

iii) slab thickness = 120mm

iv) brick wall thickness = 130 mm

v) storey height = 3.5 metre

vi) live load on floor = 2 kilo Newton per metre square

Q.3 Describe the design procedure for design of a building for lateral load.

**Or**

Q.3 Describe the design procedure for design of a building for earthquake load .

Q.4 Calculate wind load on wall and roof of a pitched roof building located in a farm. Consider height 10m,width 30m, length 50m,roof angle 10°.Opening in wall is 10%,ground is flat and building is at Jaipur. **Or**

Q.4 Determine the average wind pressure on wall on a general building with flat roof without overhangs. The building is located in Surat. The topography of the area is fairly leveled. The wall of the building have total 10 opening of 1.2x1.2m. Plan dimension 25x15 with 10m height

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