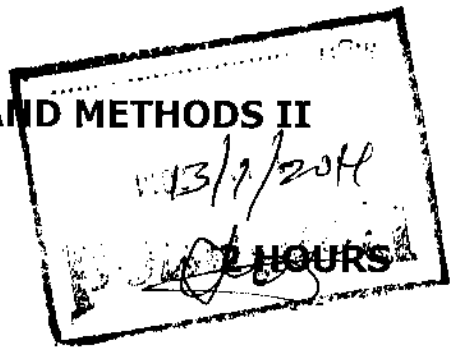
FEDERAL UNIVERSITY OF TECHNOLOGY: FINAL EXAM FOR RAIN SEMESTER, 2013.

ARCH. 304 - BUILDING COMPONENTS AND METHODS II

ANSWER ALL QUESTIONS.



Write short notes on the following:

1. Curtainwalls, concrete walls, stud frame walls, masonry walls, concrete columns, wood columns, concrete cover.

2. What is the difference between prestressed and precast concrete. Give two instances when they are used.

3(a) List 5 causes of building failures.
(b) List 3 type of foundation types.
(c) When are they used in a building project.

4. Draw a section cut of reinforced concrete column with r.c. slab and footing. Lable all the parts.

5. State if true or false on the following:

(i) Wind pressure can cause a building to translate or move laterally due to the shear forces created between the structure and its foundation.

(ii) Light building such as wood framed structure require careful detailing to prevent the effects of overturning.

(iii) The Venturi effect is as a result of high wind velocity air flow between two buildings.

(iv) When selecting and designing a structural system the scale of the building is directly related to the type of construction required and the uses or occupancy allowed by the building code.

(v) Concrete and masonry walls do not qualify as non combustible construction and do not rely on their mass for their load bearing capability.

(vi) Wood walls and columns are designed to collect gravity loads from trusses, girders, beams and slabs and redirect these loads vertically down to the foundation.

(vii) The tributary area for loads on vertical supports should not take into account the structural grid and the type and pattern of horizontal spanning systems being supported

(viii) The tributary area for the load on an interior column extends to lines half the distance to the nearest column in all directions.

(ix) A concentrated load produces very large bending moment if located close to the center of the span of a transfer beam.

(x) Resistance to lateral wind and seismic forces do not require the use of shear planes, diagonal bracing or rigid framing with moment resisting connections.