Reg. No.										

MANIPAL UNIVERSITY

THIRD SEMESTER B.S. (ENGG.) DEGREE EXAMINATION – DECEMBER 2015

SUBJECT: BUILDING CONSTRUCTION – II (CE 231)

(BRANCH: CIVIL)

Friday, December 11, 2015

Time: 10:00 – 13:00 Hrs. Max. Marks: 100

- **Answer any FIVE FULL questions.**
- **Any missing data may be suitably assumed.**
- **Figures should be neatly drawn.**

1A. What is site exploration? Explain the purpose of site exploration.

1B. Explain the functions of foundation.

1C. Explain plate load test to determine the ultimate bearing capacity of soil with the help of sketch.

(4+6+10 = 20 marks)

2A. Explain English bond with the help of neat sketch showing elevation and plan for 1 brick thick wall.

2B. Design the isolated stepped footing for a brick pillar 300mm × 300mm carrying a superimposed load of 300kN at its top. The height of the column above the ground level is 3.2m. Take the unit weight of brick masonry as 19kN/m^3 while lime concrete to be used in the base and its unit weight 20kN/m^3. The soil has an angle of repose of 30° and unit weight of soil is 18kN/m^3 and safe bearing capacity 200kN/m^2 the foundation concrete has a modulus of rupture of 150kN/m^2.

(10+10 = 20 marks)

3A. **Explain with neat sketches:**

i) Lean to roof

ii) Madras terrace roof

3B. **Write short note on the following with the help of neat sketches wherever necessary:**

i) Louvered door

ii) Fixed window

((5 marks × 2) + (5 marks × 2) = 20 marks)

4A. What are load bearing and non-load bearing walls? Explain the different types of load bearing wall.

4B. Write comparison between Brick and Stone Masonry with points in favour of brick masonry.

4C. Plan a Dog legged staircase for a residential building in which the vertical distance between each floor is 3.6m. The size of the stair hall is limited to 5.0m × 2.5m.
Take, Rise =0.15m and Tread =0.25m. Draw plan and sectional elevation proportionally.
(6+5+9 = 20 marks)

5A. **Explain the method of laying following types of flooring:**
i) Mosaic flooring
ii) Plastic or P.V.C flooring

5B. Explain any four types of pointing with the help of sketch.

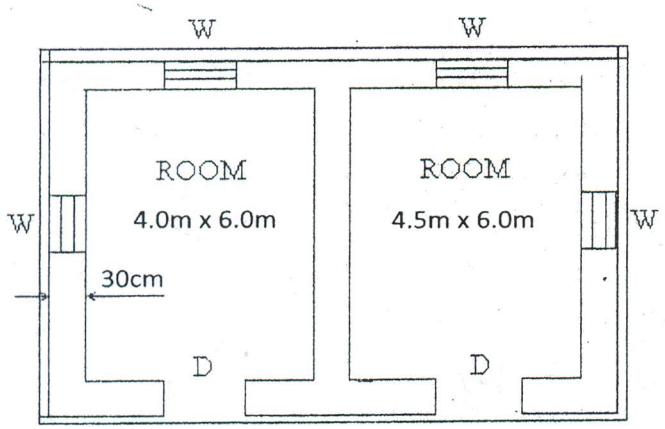
5C. Describe the steps involved in the two-coat cement plastering.
((4 marks × 2)+8+4 = 20 marks)

6A. What is shoring? Write a short note on Horizontal shores with the help of neat sketch.

6B. What is scaffolding? Explain Double scaffolding with the help of neat sketch.

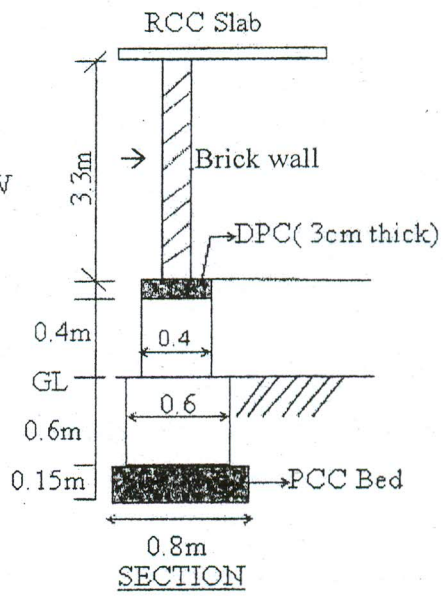
6C. Explain the different causes of dampness in buildings.
(6+6+8 = 20marks)

7A. Work out the quantities for the following items of work for the building plan shown below by center line method.
i) Earth work in excavation
ii) 1st class brick work in cement mortar 1:6 in foundation and plinth
iii) 3.0cm thick Damp Proof Course



PLAN

Schedule of openings
D= 1.1m×2m
W= 1.2m×1.2m



SECTION

7B. Calculate the quantities of various materials required for the following items of work. (Any two)
i) First class brick work in cement sand mortar 1:6 in foundation and plinth.
ii) Internal plastering, 12mm thick in CM 1:6 on new brick work.
iii) 2.5cm cement concrete floor 1:2:4
(10+10 = 20 marks)