MANIPAL UNIVERSITY

FIRST SEMESTER B. ARCH. DEGREE EXAMINATION – NOVEMBER 2015

SUBJECT: ARC 103 - BUILDING CONSTRUCTION AND MATERIALS – I
(2010 SCHEME)

Tuesday, November 17, 2015

Time: 14:00 – 18:00 Hrs.

Max. Marks: 50

- ✎ From **PART – A**, answer any **THREE** questions in full.
- ✎ From **PART – B**, answer any **ONE** question in full.
- ✎ Wherever necessary, illustrate answers with neat sketches (in scale and in proper dimensions).

PART – A

1A. Notate the following Building Components:
   i)   Single Leaf Single Swing Door
   ii) Sink with Drainage Board
   iii) Earthing
   iv) Sliding Door
   v)   Rainwater Outlet
   vi) Ceiling Fan

1B. Draw the **elevation** of a wall built in any two different kinds of stone masonry. Also draft one typical **section** of one of the stone wall.

(4½+8 = 12½ marks)

2. A single room fruit stall constructed in brick masonry (1 brick thick wall) measures 3.0m × 2.5m has a window opening measuring 1.5m × 1.2m on one of the shorter faces and a door measuring 1.0m × 2.1m on the longer face. Consider the Sill height is of 0.9m. Draw plan and section of the same by labelling the significant parts. (Scale 1: 25)

(12½ marks)

3A. Draft the isometric view showing the alternate courses of a one and a half brick thick wall in Flemish Bond (Scale 1:10)

3B. What is the difference between Header and Stretcher Bond. Illustrate with proportionate sketches.

(8½+4 = 12½ marks)

4A. Draw the elevation and section of a segmental arch set in masonry over an entrance 2m wide. Assume the rise as 50 cm.

4B. Differentiate between Lintel and Arches; explain each with neat sketches.

(6½+6 = 12½ marks)

PART – B

5A. Tabulate the setting time and significance of Pozzolona Cement.

5B. Enlisting two different types of Stone, which are used as a Building material and describe each of its purpose in Construction.

5C. What are the different types of Mortar binding. Explain any one in detail.

<div align="right">(4+4+4½ = 12½ marks)</div>

6A. Explain the advantages and disadvantages of clay as a building material. State examples of clay products used in building industry.

6B. Mention the ways to determine the quality of bricks available in the market.

<div align="right">(6½+6 = 12½ marks)</div>

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