Reg. No.										

MANIPAL UNIVERSITY

SIXTH SEMESTER B. ARCH. DEGREE EXAMINATION – MAY 2016

SUBJECT: ARC 304 - BUILDING CONSTRUCTION AND MATERIALS VI (2010 SCHEME)
ARC 304 - BUILDING CONSTRUCTION VI (2007 SCHEME)

Monday, May 23, 2016

Time: 14:00-18:00 Hrs. Max. Marks: 50

- **Answer any THREE questions from PART A and any ONE question from PART B.**
- **All drawings shall be appropriately dimensioned and labelled.**
- **Suitable scale shall be assumed for a drawing if scale is not specified in the question.**
- **Any missing data in the question shall be suitably assumed.**

PART – A

1. Draw the details of folded- plate roof for a multi- purpose hall measuring 12m × 20m in plan and a minimum room height of 4m. Make the following drawings:

1A. Sketch a view of the structure

1B. Plan of the roof (including parts / beams / stiffeners / column positions)

1C. 2 sections to show typical reinforcement

(3+4½+5 = 12½ marks)

2A. What advantages does PVC wall cladding panels have over wood paneling and conventional tiles?

2B. In mid- and high-rise buildings, the stone veneer cladding system is generally supported at each floor using steel shelf angles. Sketch a sectional elevation showing supports of such a system at ground level and one floor level. Also sketch the schematic detail at a typical shelf angle.

2C. Detailed sketch of wall cladding for wet and dry system construction.

(2½+6+4 = 12½ marks)

3. An exhibition hall of 20m × 25m is to be constructed with curtain wall. The total height of 9m is divided in 2 floors. Draw in suitable scale the fixing of its member's details. Draw the following to detail the scheme.

3A. Plan and Elevation

3B. Sectional Elevation of curtain wall

3C. Any two fixing details

(3½+3+6 = 12½ marks)

4. A typical bay of an industrial shed is of size 6 m × 12. Ferro concrete cement channel roofing to cover this area. Draw details of roofing as given below.

4A. Roof Plan with channel placement details and dimensions to suitable scale

4B. Detail section showing Reinforcement details and junction details between two units.

4C. Explain with neat sketches the process of casting of ferro-cement channel

(3½+4½+4½ = 12½ marks)

PART – B

5A. What are the characteristics of a good glass system in a building? State any five properties.

5B. **Differentiate between:**

i) Laminated and toughened glass

ii) Tinted and reflective glass

5C. Explain fire resistant glass. How is it different from wired glass?

(5+4+3½ = 12½ marks)

6A. Mention the advantages of precast construction.

6B. **Write short notes on:**

i) Stabilized mud blocks

ii) Jack Roof arch

iii) Adobe construction

6C. Explain how filler slab is a cost effective construction technique. Mention three key points to remember for filler material selection.

(3+6+3½ = 12½ marks)