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MANIPAL UNIVERSITY
FOURTH SEMESTER B. ARCH. DEGREE EXAMINATION – JULY 2017
SUBJECT: BUILDING SERVICES II (ARC-212)
(2010 SCHEME)

Time: 14:00 - 17:00 Hrs.

Tuesday, July 11, 2017

Max. Marks: 50

- ✍ **Answer any FIVE questions.**
- ✍ **Support your answers with necessary sketches.**

1. Define the term luminaire. Discuss the principles of good architectural artificial lighting design.
(3+7 = 10 marks)
2. Describe briefly the planning principles of lifts. List the different types of passenger lifts.
(10 marks)
3. Explain typical earthing system for electrical installations. What are the other systems used in protection of electrical wiring, describe briefly.
(10 marks)
- 4A. Mention benefits of escalators over elevators.
- 4B. With reference to planning and design of escalators describe the following:
 - i) Speed
 - ii) Step width
 - iii) Inclination
(3+7 = 10 marks)
5. What is counter weight and machine room in a typical lift? Sketch a typical lift system; plans and sections by marking all the necessary features.
(4+6 = 10 marks)
6. **Write short notes on:**
 - 6A. CFL
 - 6B. LED Lamps
 - 6C. Hydraulic Elevators
(3+3+4 = 10 marks)

