MANIPAL UNIVERSITY

FOURTH SEMESTER EXECUTIVE M. ARCH. (ADVANCED DESIGN) DEGREE EXAMINATION – JUNE 2016

SUBJECT: ARM 702 E – ADVANCED BUILDING SERVICES

Monday, June 06, 2016

Time: 10:00 – 13:00 Hrs.   Max. Marks: 50

✎   Answer any FIVE of the following questions.

✎   Support the answers with neat sketches.

✎   Mention assumed data (if any).

1.   Answer the following:

1A. What is building automation?

1B. What are the various systems that can be managed by automation in a building? Elaborate on any three systems.

$$(2+2+6 = 10 \text{ marks})$$

2.   For a 9-storeyed residential apartment building, which has 3 units per floor and per floor area is 5000 sq.ft:

2A. Calculate the water capacity requirements for over-head tank, sump and fire-fighting.

2B. What are the different capacities of pumps available and your selection for the above?

2C. What do you mean by refugee area and what are the norms?
     *Also mention the assumed data.

$$(5+2\frac{1}{2}+2\frac{1}{2} = 10 \text{ marks})$$

3.   Answer the following:

3A. What are the planning arrangements for 3, 6 and 8 lifts in a high rise building?

3B. What are the various types of lift traffic controls and explain any three controls.

$$(5+5 = 10 \text{ marks})$$

4.   What are the parameters considered to increase the efficiency of air-conditioning in a building?

$$(10 \text{ marks})$$

5.   What is structured cabling in a building and write about open cabling system.

$$(2+8 = 10 \text{ marks})$$

6.   How do you determine the capacity of the transformer including DG for a high-rise residential building (Consider calculations from an individual unit (2BHK) to shared facilities)?

$$(10 \text{ marks})$$