

MANIPAL UNIVERSITY**FOURTH SEMESTER B. ARCH. DEGREE EXAMINATION – MAY 2016****SUBJECT: BUILDING SERVICES III (ARC-14-208)
(2014 SCHEME)**

Tuesday, May 24, 2016

Time: 14:00 - 17:00 Hrs.

Max. Marks: 50

✍ Answer any **FIVE** questions.

✍ Support your answers with sketches wherever necessary.

- 1A. List the different components of a centralised air conditioning system.
1B. Explain with the help of sketches the different types of Ducting systems used in Centralised Air Conditioning systems.

(4+6 = 10 marks)

- 2A. Explain reverberation time. Stating reason, explain the difference in the reverberation time requirement for speech and music.
2B. Explain various methods used for noise isolation at the site planning level.

(4+6 = 10 marks)

- 3A. Explain the concept of intelligent buildings and describe a few ways to achieve intelligent buildings.
3B. Explain access control systems in a building with respect to building automation systems.

(4+6 = 10 marks)

4. Write short notes on any **FOUR** of the following:

- 4A. Air Handling Unit
4B. Flutter echo
4C. Sound Intensity Level
4D. Indoor Air Quality
4E. Use of sensors in Intelligent Buildings

(2½ marks × 4 = 10 marks)

- 5A. What are the objectives of Ventilation in a building?
5B. Explain in detail the components in a Compression Refrigeration Cycle and their functions.

(4+6 = 10 marks)

- 6A. Explain the acoustical considerations for the design of an open air theatre.
6B. What is sound absorption coefficient of a material? Differentiate between porous absorbers and panel absorbers.

(4+6 = 10 marks)

