

**MANIPAL ACADEMY OF HIGHER EDUCATION**  
**FOURTH/FIFTH SEMESTER B. ARCH. DEGREE EXAMINATION – APRIL 2018**  
**SUBJECT: BUILDING SERVICES III (ARC-14-208/ARC 311)**  
**(2014/2010 SCHEME)**

Tuesday, April 17, 2018

Time: 10:00 - 13:00 Hrs.

Max. Marks: 50

**✍ Answer any FIVE FULL questions.**

1A. What are the necessity of ventilation?

1B. What are the components of Psychrometric chart? Explain.

(4+6 = 10 marks)

2A. Explain the working principle of central plant AC System.

2B. Explain the single zone system and multiple zone system in AC system.

(6+4 = 10 marks)

3A. What are the methods to be followed to reduce:

- i) Air borne sound
- ii) Structure borne sound

3B. What are the methods of reducing environmental noise via town planning?

(4+6 = 10 marks)

4A. List out the requirements for good hearing condition in Auditorium.

4B. Write the important criteria for choosing the site for open air theatre.

(5+5 = 10 marks)

5A. What are the functions of BAS (Building Automation System) ?

5B. What are the application of sensors?

5C. Explain the following fire protection measures:

- i) Active measures
- ii) Passive measures

(2+2+6 = 10 marks)

6A. What are the fire safety measures to be considered while designing AC System?

6B. How to minimize the energy consumption in air conditioned buildings?

(5+5 = 10 marks)

