

No. of Printed Pages : 03

Roll No. ....

**E-4003**

**B. Arch. EXAMINATION, Dec. 2018**

(Fifth Semester)

(B. Scheme) (Main & Re-appear)

(ARCH)

AR309B

BUILDING SERVICES-V

*Time : 3 Hours]*

*[Maximum Marks : 50*

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Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

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**Note :** Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

(2-10/5) M-E-4003

**P.T.O.**

### **Unit I**

1. Define wavelength of a sound and the relationship between wavelength, frequency and velocity of a sound.
2. Define sound absorption co-efficient. Discuss the effect of adding sound absorbing material to a room and effect of room surface sound absorbing treatment.

### **Unit II**

3. Describe briefly how you will determine the reverberation time for a speech room. How does the reverberation time varies with frequency, and what is the precautionary measure one must adopt to get uniform response.
4. Define sound isolation. Explain in detail barriers between exterior sound source and interior receiver.

**M-E-4003**

**2**

### **Unit III**

5. Define the following :
  - (a) Down-comer
  - (b) Dry Riser
  - (c) Fire Resistant Wall
  - (d) Means of Egress.
6. What do you know about vertical circulation in buildings ? Describe various means and methods of climbing up. Also explain the grouping of Lifts and planning consideration for vertical circulation.

### **Unit IV**

7. Discuss various methods and techniques in passive fire protection and control.
8. What do you mean by fire rating ? What are the rules for fire protection and fire fighting requirements for high rise buildings ?

**(2-10/6) M-E-4003**

**3**

**420**