

|  |  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|--|
|  |  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|--|

**Sixth Semester B. Arch. Degree Examination, June/July 2016**  
**Building Services - IV**

Time: 3 hrs.

Max. Marks: 100

**Note: Answer any FIVE full questions, choosing  
 THREE from Part – A and any TWO from Part – B.**

**PART – A**

- 1 a. Explain acoustics and elaborate how acoustics plays a major role while designing and planning. (10 Marks)  
 b. Explain inverse square law through a neat sketch and derivations. (10 Marks)
- 2 Explain the following with short notes and neat sketches :  
 a. Sound foci  
 b. Flutter echo  
 c. Whispering gallery  
 d. Frequency of sound. (20 Marks)
- 3 Explain the following with short notes and sketches :  
 a. Decibel scale  
 b. Loudness  
 c. Threshold of audibility and pain  
 d. Sound masking. (20 Marks)
- 4 An art school wants to construct a multipurpose auditorium in its campus. So suggest a design ideas for an efficient multipurpose auditorium for a capacity of 500 seating. Draw a neat sketches of plan, sections, with interior surface treatment, assuming suitable technical data. (20 Marks)
- 5 Explain the following with notes and sketches :  
 a. Porous materials  
 b. Panel absorbers  
 c. Cavity resonators  
 d. Variable absorbers. (20 Marks)

**PART – B**

- 6 a. Explain noise and classifications. Write the causes for environmental noise in urban areas with examples. (10 Marks)  
 b. Suggest the remedial measures to avoid unwanted sound in noisy areas. (10 Marks)
- 7 Explain the following :  
 a. Air borne noise  
 b. Structure borne noise  
 c. Noise masking  
 d. Sound insulation. (20 Marks)
- 8 Explain as how would you control noise in the following places with neat sketches.  
 a. Airports  
 b. Railway stations  
 c. Bus terminals  
 d. Hospitals. (20 Marks)