Reg. No.										

MANIPAL UNIVERSITY

SEVENTH SEMESTER B. ARCH. DEGREE EXAMINATION – NOVEMBER 2017

SUBJECT: ARC-14-409.2 - ADVANCED ACOUSTICS AND ILLUMINATION

(2014 SCHEME)

Wednesday, November 15, 2017

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

- **Answer any FIVE questions fully.**
- **Give neat sketches wherever relevant.**

1A. Explain the significance of reverberation time. How is it estimated? How can it be controlled?

1B. Explain the raking of seats as a method for achieving good audio-visual qualities. Give sketches to give typical measurements.

(5+5 = 10 marks)

2A. Explain Noise Criteria curves.

2B. Explain how Transmission loss (TL) can be used in noise reduction.

2C. Explain the logic of controlling internal noises using sound absorption properties of building materials and finishes. Also describe the method of quantification.

(3+3+4 = 10 marks)

3. **Explain the following:**

3A. Acoustical requirements of a recording studio

3B. Difference between sound absorption and sound insulation

3C. Noise control by site planning and landscaping

3D. Requirements of balconies in an auditorium

(10 marks)

4. Explain how the objective of energy conservation can be incorporated at various levels of lighting design.

(10 marks)

5A. What are the scope and limitations of usage of software for artificial lighting design?

5B. Explain any one method of day-light prediction and design of window opening on wall for day-lighting.

5C. What all information must be given in a reflected ceiling plan for artificial lighting?

(3+5+2 = 10 marks)

6A. Explain Lumens method of general lighting.

6B. Explain the factors that affect coefficient of utilization of a luminaire

6C. How do we specify luminaires for spot lighting and flood lighting? Give example.

(4+4+2 = 10 marks)