

**CODE: 17CD02109**

M. Tech I Year I Semester (R17) Supplementary Examinations, May 2018  
**SOLID STATE LIGHTING AND CONTROL**  
**(PE & D)**

Time : 3 hours

Max Marks : 60

Answer all **five** units. (5 x 12 = 60 Marks)

**UNIT-I**

1. Briefly explain the following terms:  
i) Internal quantum efficiency ii) External quantum efficiency iii) Injection efficiency  
iv) feeding efficiency v) Light extraction efficiency vi) Radiant efficiency

OR

2. With suitable sketch explain light escape cones and its relevance in LED design

**UNIT-II**

3. Discuss different methods for generation of white lights in LED. Bring out the advantages and disadvantages of each method

OR

4. Discuss CIE x-y chromaticity diagram

**UNIT-III**

5. With neat circuit diagram and waveform explain boost converter

OR

6. With the help of equations and waveforms explain output voltage ripple in a buck converter

**UNIT-IV**

7. Bring out the advantages and disadvantages of OLED. Also list its applications

OR

8. What do you understand by AC LED? Explain its working principle. How is it different from DC LED?

**UNIT-V**

9. Discuss LED applications in

- i) Traffic Lights  
ii) Automatic Signage

OR

10. Write short notes on:

- i) LED applications on Alphanumeric Displays  
ii) LED application on Full color video displays

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