

Total No. of Questions : 8]

SEAT No. :

P-581

[Total No. of Pages : 2

[6004]-521

**B.E. (Electrical Engineering)**

**ILLUMINATION ENGINEERING**

**(2019 Pattern) (Semester - VIII) (403151B) (Elective-VI)**

*Time : 2½ Hours]*

*[Max. Marks : 70*

*Instructions to the candidates:*

- 1) *Solve Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6 and Q.7 or Q.8.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right indicate full marks.*
- 4) *Use of calculator is allowed.*
- 5) *Assume Suitable data if necessary.*

**Q1) a)** Discuss the factors to be considered in indoor illumination scheme. [6]  
**b)** Define and explain the following terms in accordance with illumination : [6]

- i) Coefficient of utilization
- ii) Beam angle and field angle
- iii) Polar diagram

**c)** What different components of flux are considered in zonal cavity method? [6]

OR

**Q2) a)** What are the cavities to be considered in Indoor lighting design? Define and explain each of them. Also draw a cross section of a room showing these cavities. [6]

**b)** What are the various factors on which un-recoverable losses depend? State and explain the factors. [6]

**c)** State the uses of polar diagrams. [6]

**Q3) a)** State and explain the advantages of good illumination schemes. [7]

**b)** Explain the procedure for design of illumination for residential purpose. [10]

**P.T.O.**

OR

- Q4)** a) A room of size 15 x 6 m is to be illuminated by 20 lamps of 200 watts each. The MSCP (Mean Spherical candle power) of each lamp is 250. Take depreciation factor as 1.2 and utilization factor as 0.6. Find the average illumination produced on the floor. [7]
- b) Elaborate and explain the steps involved in design of illumination scheme for educational institute. [10]
- Q5)** a) What are the key factors in designing an outdoor illumination scheme? Explain each in brief. [10]
- b) With respect to road / street lighting explain the following terms : [8]
- Contrast
  - Glare
  - Visual Performance
  - Field of vision

OR

- Q6)** a) What are the different pole arrangements in street lighting? What are the factors affecting the selection of pole arrangement? [10]
- b) What are the objectives of road lighting? State them. [8]
- Q7)** a) What are intelligent LED lighting systems and how do they work?[5]
- b) Compare intelligent lighting for domestic and commercial use. [5]
- c) Explain in brief about optical Fiber and its construction. [7]

OR

- Q8)** a) Explain natural light conducting system (any two) [5]
- b) State the advantages and disadvantages of OLED. [5]
- c) Write a short note on LASERS. [7]

