

Total No. of Questions: 8]

SEAT No. :

P6591

[6181]-142

[Total No. of Pages :3

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, Q.7 or Q.8.
- 2) Figures to the right side indicate full marks.
- 3) Neat diagram must be drawn wherever necessary.
- 4) Assume suitable data if necessary.
- 5) Use of non-programmable calculator is allowed.

Q1) a) Write a short note on [4]

- i) Coefficient of utilization
- ii) beam angle

b) 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]

c) Explain the various factors to be considered for design of indoor illumination scheme [8]

OR

Q2) a) What is Light loss factor? State its types and explain. [4]

b) What is Polar Curve? Describe its types. State its significance. [6]

c) What are different components of flux are considered in zonal cavity method Explain each of them [8]

Q3) a) Define following terms [3]

- i) Reflection factor
- ii) Lumen

b) State and explain the advantages of good illumination schemes [6]

c) Explain the procedure for design of illumination for an aquarium and swimming pool. [8]

OR

P.T.O.

- Q4)** a) Define following terms [3]
- i) Depreciation factor
 - ii) Waste light factor
- b) Explain briefly with respect to residential lighting the following: [6]
- i) General lighting
 - ii) Decorative lighting
 - iii) Spot / Focus lighting
- c) Explain the procedure for design of illumination for hospitals. [8]

- Q5)** a) Explain following terms with respect to road lighting — [4]
- i) Uniformity ratio
 - ii) Field of vision
- b) Explain the illumination design for advertisement/ hoardings. [6]
- c) What are the key factors in designing an outdoor illumination scheme? Explain each in brief. [8]

OR

- Q6)** a) With suitable diagram explain isolux diagram for designing outdoor illumination scheme. [4]
- b) Explain following terms with respect to road lighting — [6]
- i) visual performance
 - ii) visual comfort
 - iii) Glare
- c) Explain the various Road classifications according to BIS. [8]

- Q7)** a) Compare intelligent lighting for domestic and commercial use. [3]
b) Explain natural light conducting system (any two) [6]
c) Explain the working principle and construction of OLED. Support the answer with a diagram. [8]

OR

- Q8)** a) What are intelligent LED Fixtures? Explain. [3]
b) Explain working of Laser arrangement with suitable diagram. State types of LASERS. [6]
c) Explain construction and working of Fiber optic cables. State and explain its types. (any two). Support your answer with diagram. [8]

