Total No. of Questions : 8]

SEAT No. :

PB-2283

[Total No. of Pages : 2

[6263]-121

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 diagrams must be drawn wherever necessary.***
4) ***Assume Suitable additional data if necessary.***
5) ***Use of non-programmable calculator is allowed.***

Q1) a) What is Polar Curve? Describe its types. **[4]**

b) State the feature of good illumination scheme. **[6]**

c) What different components of flux are considered in zonal cavity method? Explain in detail. **[8]**

OR

Q2) a) Write short notes on cavity ratio. **[4]**

b) What are the different Lighting systems for Residential illumination. Explain in detail. **[6]**

c) Explain zonal cavity method for indoor lighting design. **[8]**

Q3) a) Define following terms **[3]**

i) Beam factor

ii) Maintenance factor

iii) Lux

b) Write short note on LFF (Light Loss Factor) **[6]**

c) A light source of 1000 watts having MSCP =2500 is suspended 3 meters above the working plane. Find the following: **[8]**

i) Illumination in Lux directly below the lamp on working plane.

ii) Lamp efficiency in Lumens/watt.

iii) Illumination 3meter away on the horizontal plane from vertically below the lamp.

OR

P.T.O.

Q4) a) Define following terms **[3]**

i) Reflection factor

ii) Utilisation factor

iii) Glare

b) Find MSCP and Luminous intensity in lumens per watt and MSCP per watt of a 250 volts lamp which takes a current of 0.4 Amp and has total flux of 1500 Lumens. **[6]**

c) Explain in details the factors to be consider for design of illumination scheme for Educational installation. **[8]**

Q5) a) State and Explain Road classification as per BIS. **[4]**

b) Draw and explain the constructional part of LED. **[6]**

c) Explain in details the factors to be consider for design of illumination scheme for indoor installation -Hospital. **[8]**

OR

Q6) a) Explain special purpose lighting scheme for swimming pool lighting. **[4]**

b) Explain in details the factors to be consider for design of illumination scheme for outdoor lighting schemes. **[6]**

c) Explain in details the factors to be consider for design of illumination scheme for Theatre installation. **[8]**

Q7) a) Write short note on street lighting. **[3]**

b) With suitable diagram explain any two methods of natural light conducting. **[6]**

c) Explain working of OLED with suitable diagram and state its advantage. **[8]**

OR

Q8) a) Compare between LED and LASER. **[3]**

b) With suitable diagram explain different fibre optic guide. **[6]**

c) What are the objectives of road lighting? Give the details of road lighting codes in India. **[8]**

⌘⌘⌘