Total No. of Questions :12]

SEAT No. :

P820

[Total No. of Pages :3

[4659] - 70
B.E. (Electrical)
c- ILLUMINATION ENGINEERING
(Elective-I)(2008 Pattern) (Semester-I)

Time : 3 Hours] *[Max. Marks : 100*

Instructions to the candidates:

1) ***Answer 3 questions from Section I and 3 questions from Section II.***
2) ***Answers to the two sections should be written in separate books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***
5) ***Use of electronic pocket calculator is allowed.***
6) ***Assume suitable data, if necessary.***

SECTION-I

Q1) a) How quantification of light is made? Elaborate your answer with suitable diagram. **[9]**

b) Explain- Production of light and physics of generation of light. **[9]**

OR

Q2) a) Define: **[9]**

i) MHCP

ii) Illumination

iii) Depreciation factor

iv) Plane angle and solid angle.

Derive the relationship between them.

b) Explain the laws of illumination. Also deduce the relation to find illumination at any point on the surface due to light source suspended at height 'h' from the plane surface. **[9]**

Q3) a) Explain the operating characteristics of Gaseous discharge lamps. **[8]**

b) Write a short note on stroboscopic effect of fluoroscent lamps. **[8]**

OR

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Q4) a) What are the different materials used in manufacturing of lamps? Explain any four materials in brief. **[8]**

b) Explain Metal Halide Lamp in detail. **[8]**

Q5) a) Define luminaire as per IEC. What are the different design factors for the luminaire? **[8]**

b) State different accessories of control gear circuit for gaseous discharge lamps. Explain ignitors in detail. **[8]**

OR

Q6) a) State and explain different phenomena used for optical control. **[8]**

b) Classify the light fittings according to the way the light reaches the object. **[8]**

SECTION-II

Q7) a) Elaborate the steps involved in design of illumination scheme for indoor installation Hospital. **[8]**

b) What is glare? Explain in detail about the types of glare and remedies to reduce the effect of glare. **[8]**

OR

Q8) a) Explain the various factors to be considered while designing lighting of a place. **[8]**

b) Explain Zonal Cavity Method for indoor lighting design. **[8]**

Q9) a) What are the objectives of road lighting? Give the details of road lighting code in India. **[8]**

b) Elaborate the various arrangements of luminaires for straight roads. **[8]**

OR

Q10) a) Define: **[8]**

i) Light Output Ratio (LOR)
ii) Utilisation factor
iii) Tilt angle
iv) Overall Uniformity
v) Throw
vi) Spread
vii) Control
viii) Surround Ratio

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b) Explain flood lighting wrt the types of projectors and the location of projectors. **[8]**

Q11) Write short note on: **[18]**

a) Day lighting.

b) Emergency lighting.

OR

Q12) a) Explain photovoltaic lighting with suitable diagram. **[9]**

b) Write a short note on Optical Fibre. **[9]**