

17639

11920

3 Hours / 100 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
 - (2) Answer each next main Question on a new page.
 - (3) Illustrate your answers with neat sketches wherever necessary.
 - (4) Figures to the right indicate full marks.
 - (5) Assume suitable data, if necessary.
 - (6) Use of Non-programmable Electronic Pocket Calculator is permissible.
 - (7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. (A) Attempt any THREE : 12
- (a) State the purpose of Lighting Control.
 - (b) State advantages of good illumination scheme.
 - (c) State any four desirable characteristics of lighting required in Aquirium.
 - (d) Explain different types of dimmer.
- (B) Attempt any ONE : 06
- (a) State the features of good Illumination Scheme.
 - (b) Explain construction working of fluorescent lamp with neat sketch.

2. Attempt any TWO :**16**

- (a) A $50\text{ m} \times 15\text{ m}$ of a building is to be illuminated by flood lighting projectors 25 m away if required illumination is 100 lux , coefficient of utilization 0.5 , depreciation factor 1.5 , waste light factor 1.2 . Estimate number & size of projector assuming 1000 W lamps having 17 lumens/watt luminous efficiency. Also, calculate angle of spread.
- (b) Draw & explain how one lamp can be controlled by two switches.
- (c) A Room of $30 \times 10\text{ m}$ is illuminated by 20 no's of 200 W lamps. The MSCP of each lamp is 250 . If U.f. is 0.4 & D.f is 1.2 then find average illumination produce on surface.

3. Attempt any FOUR :**16**

- (a) State the two laws of Illumination.
- (b) Explain lumen or light flux method design technique of Interior Illumination.
- (c) State any four advantages of LED lamp & disadvantages of Incandescent lamp.
- (d) Explain Auto transformer Dimmer in detail.
- (e) Define flood lighting. State the purpose of flood lighting.

4. (A) Attempt any THREE :**12**

- (a) Explain Direct lighting scheme of Illumination.
- (b) Describe three point method of single lamp control in detail.
- (c) State the design consideration of interior location of commercial premises.
- (d) State the design consideration for Interior location of Residential Unit.

- (B) Attempt any ONE :** **06**
- (a) Explain Design considerations for Interior location of Industrial premises.
 - (b) Compare CFL lamp & LED lamp. (Minimum 6 points)
- 5. Attempt any TWO :** **16**
- (a) State main objective of Street lighting. Explain two general principles employed in design of street lighting.
 - (b) Explain Agriculture & Decorative lighting in detail.
 - (c) A minimum illumination of 80 lux is required in room of 50 m × 12 m. Calculate the number, location & wattage of lamp to be used. Assume that D.f. 1.2 & U.f is 0.4 & efficiency of lamp is 14 lumens/watt.
- 6. Attempt any FOUR :** **16**
- (a) Give advantages & disadvantages of high pressure mercury vapour lamp over filament lamp.
 - (b) Define the term related to flood lighting.
 - (i) Waste light factor
 - (ii) Beam factor
 - (c) Explain Railway Platform lighting.
 - (d) State the recommended illumination level required for any four areas of hospital lighting.
 - (e) State different types of lamps used for stage decoration and its purpose.
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