

# GUJARAT TECHNOLOGICAL UNIVERSITY

BID- SEMESTER-V EXAMINATION – WINTER 2024

Subject Code:2X55107

Date:21-11-2024

Subject Name: Lighting and Lighting Design

Time:10:30 AM TO 12:30 PM

Total Marks:50

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

**Q.1** (a) Describe the four main types of natural light in interior spaces and explain how different window designs can be used to achieve each type of light through schematic sections. **10**

(b) Provide an example (description and sketch) of an interior space where specific kind of natural light would be most beneficial and with what kind of opening and orientation of sun. **10**

**Q.2** Describe the psychological effects of warm and cool lighting on human emotions. Provide examples of interior spaces where each type of lighting would be most appropriate. **05**

**OR**

**Q.2** Discuss the relationship between light and color in interior design. How does the color rendering index (CRI) of a light source affect the perception of colors in a space **05**

**Q.3** What is the suggested lux levels for a workspace and bedroom? And why? **05**

**OR**

**Q.3** A client wants to convert their basement into a home office. Suggest appropriate lighting fixtures to achieve the recommended lux levels for a workspace. **05**

**Q.4** Which type of lighting fixture is most commonly used to create focused illumination on specific artworks or displays in an exhibition space? **05**

a) Floodlights b) Track lights c) Pendant lights d) Wall washers

**Q.5** In an exhibition space, which lighting technique is used to reduce glare and unwanted reflections on glass-covered artworks or display cases? **05**

a) Backlighting b) Up lighting c) Cross lighting d) Angled lighting

**Q.6** Design a unique pendant light fixture for a modern living room. Describe the materials you would use, the fabrication process, and how your design considers both aesthetics and functionality through sketches. **10**

**OR**

**Q.6** You are tasked with creating a lighting installation for a hotel lobby that showcases local craftsmanship. Propose a concept that incorporates traditional materials in a contemporary way, and explain design through drawings **10**

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