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## Fifth Semester B.Arch. Degree Examination, Dec.2019/Jan.2020 Building Services – II

Time: 3 hrs.

Max. Marks: 100

*Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.  
2. Support your answer with neat sketches.*

### Module-1

- 1 a. Explain the distribution of Electricity from A substation to a typical multi-storied apartment building. (15 Marks)  
b. Differentiate between AC and DC current. (05 Marks)

**OR**

- 2 Write short notes on:  
a. Voltage  
b. Transformers  
c. Lighting protection  
d. Electrical cables. (20 Marks)

### Module-2

- 3 Explain the generation of electricity using solar, hydel or thermal energy. Listing its merits and demerits. (20 Marks)

**OR**

- 4 a. Discuss various measures to conserve electricity. (10 Marks)  
b. Explain the concept of “Net zero Building Design”. (10 Marks)

### Module-3

- 5 a. What are electrical faults? How can they be avoided? (10 Marks)  
b. Explain ELCB and air circuit breakers. (10 Marks)

**OR**

- 6 a. Explain the purpose and construction of plate earthing, with neat sketch. (12 Marks)  
b. Explain lighting protection measures in high rise structures. (08 Marks)

### Module-4

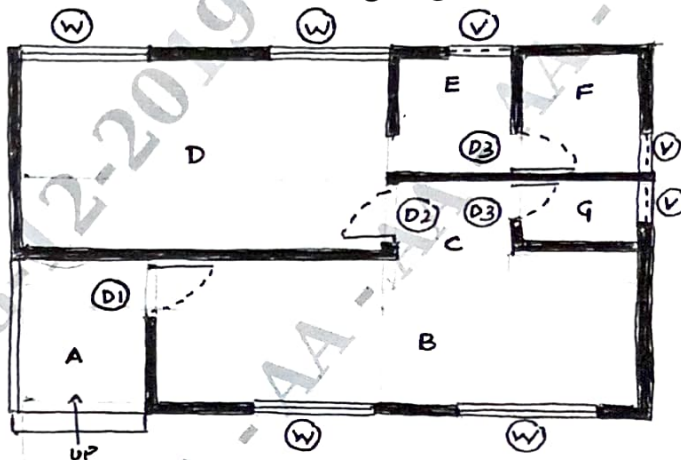
- 7 Write short notes on:  
a. Lamberts cosine law  
b. LUX levels  
c. LED Lamps  
d. Optimizing daylight usage. (20 Marks)

OR

- 8 a. Calculate the illumination produced at a point by an electric lamp having intensity of 3200 candles and mounted at a height of 2m. The lamp casts an angle of  $60^\circ$  with respect to the point. (10 Marks)
- b. Explain "LIGHT SHELF". (10 Marks)

**Module-5**

- 9 a. Draw an electrical layout for a Doctor's Clinic using standard notations. [Use the figure and spatial requirements for reference. Assume missing data]. (15 Marks)
- b. Make a schedule of switch boards with mounting heights. (05 Marks)



A- Porch	(2.0 × 3.0m)
B- Waiting and Reception	(6.0 × 3.0m)
C- Ante Room	(1.2 × 1.2m)
D- Consultation and Examination	(5.0 × 4.0m)
E- Store	(1.2 × 1.8m)
F- Toilet 01	(1.2 × 1.8m)
G- Toilet 02	(1.2 × 1.30m)

OR

- 10 Give a detailed note on extra low voltage system and explain their relevance and importance. (20 Marks)

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