Fourth Semester B.Arch. Degree Examination, Dec.2016/Jan.2017
Building Services – II

Time: 3 hrs. Max. Marks:100

Note: *1. Answer any FIVE full questions selecting atleast TWO questions from each part.*
2. Assume any missing data suitably.
3. Draw sketches wherever necessary.

PART - A

1 a. Explain with a neat labeled sketch, how electricity is distributed from the generation point of a power plant to the consumers through transmission and distribution system. **(10 Marks)**
   b. What is a conductor? What are the properties of a good conductor? What are the various types of conductors? **(06 Marks)**
   c. Explain the advantage of transferring electricity at high voltages. **(04 Marks)**

2 a. What is a substation? What are the different classification of substations? **(10 Marks)**
   b. Explain with a neat sketch the sequence of space organization in a substation. **(10 Marks)**

3 a. Explain with neat labeled sketches the underground (U.G.) method of cable laying. **(10 Marks)**
   b. List the advantages of U.G. method over Overhead (O.H) method. **(10 Marks)**

4 a. Explain with a neat sketch the parts of a cable. **(10 Marks)**
   b. What is earthing? Explain with neat labeled sketch the method of plate earthing. **(10 Marks)**

5 Write short notes on any four:
   a. ELCB
   b. Fuse
   c. Transformer
   d. Distribution board
   e. Cleat system of wiring
   f. Cable tray **(20 Marks)**

PART - B

6 a. What are the design considerations of a good lighting scheme? **(10 Marks)**
   b. A modern small shop - 20M (L) × 15M (W) × 4M (H) – to be illuminated to a level of 300 lux. Maintenance factor (M.F) – 0.8 and coefficient of utilization (c.u) – 0.75. Calculate the member of lamps required to illuminate the complete area if output lumen of the lamp selected is 3000 lumens. **(10 Marks)**

7 Write short notes on any four:
   a. Ambient lighting
   b. Task lighting
   c. CFL lamps
   d. Laws of illumination – inverse square law
   e. Lambert's cosine law
   f. Coefficient of utilization
   g. Maintenance factor
   h. Artificial illumination. **(20 Marks)**

8 Draw a single line sketch of a 2 BR residential building and prepare the electrical layout using standard electrical symbols. Also calculate the electrical load for the same. **(20 Marks)**

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