

LAGOS CITY POLYTECHNIC, IKEJA

SCHOOL OF ENGINEERING AND APPLIED SCIENCE

DEPARTMENT OF ELECT/ELECT COMPUTER ENGINEERING

2015/2016 SEMESTER EXAMINATION

1. (a) Explain the following as applicable to the Electrical System design and drafting
(i) Schematic diagram (ii) Layout diagram (iii) Wiring diagram

- (b) Mention and explain six(6) factors to be considered in the choice of a particular electrical wiring system.

COURSE TITLE: ELECTRIC AND DESIGN
QUESTION: 6
DIFFERENTIATE BETWEEN ELECTRICAL SYSTEM REPAIRS AND TROUBLESHOOTING.

2. (a) Design a suitable lighting scheme for a factory with a dimension of 120m x 40m with a height of 7m. Illumination required is 60 lux. State the number, location and mounting of 40 watts fluorescent tube giving 45lm/w.

FOR WHOM: AND YR1 EEPT INSTRUCTIONS:
ANSWER: Depreciation factor = 1.2, while utilization factor = 0.5

1. (a) Explain the following as applicable to the Electrical System design and drafting
(i) Schematic diagram (ii) Layout diagram (iii) Wiring diagram
(b) Differentiate between electrical accessories and fittings.

3. (a) With the aid of appropriate schematic diagram draft the sequence of equipment connect ion for a single phase 2-wire system.
(b) Mention and explain six(6) factors to be considered in the choice of a particular electrical wiring system.

- (b) Mention and explain 4 principles to be applied in the drafting of building electrical diagrams.
(c) Differentiate between electrical system repairs and troubleshooting.

2. (a) Design a suitable lighting scheme for a factory with a dimension of 120m x 40m with a height of 7m. Illumination required is 60 lux. State the number, location and mounting of 40 watts fluorescent tube giving 45lm/w.

- (c) Mention and explain the function of 4 electrical devices that can be used to provide height of 40 watts fluorescent tube giving 45lm/w.
Depreciation factor against excessive current in electrical installation.

4. (b) Differentiate between electrical accessories and fittings.
(a) List and draft 8 electrical device graphical symbols that can be used in electrical system design and state their function.

3. (a) With the aid of appropriate schematic diagram draft the sequence of equipment connect ion for various sources of light with practical examples.
(b) Mention and explain four principles to be applied in the drafting of building electrical diagrams.

- (c) Mention and explain 4 electrical devices that could be used to prevent excessive current.

5. (a) Explain the following as applicable to the electrical lighting system designs
(c) Mention and explain the function of 4 electrical devices that can be used to provide efficiency factor

- (i) Lamp
(ii) Maintenance factor
(iii) Flux against excessive current in electrical installation

4. (a) List and draft 8 electrical device graphical symbols that can be used in electrical system design and state their function
(vi) Space Height Ratio (SHR)

- (b) Mention and explain various sources of light with practical examples.
(c) Mention and explain features of a good electrical system designs.

- (c) Mention and explain 4 electrical devices that could be used to prevent excessive current.

5. (a) Explain the following as applicable to the electrical lighting system designs
(i) Lamp
(ii) Maintenance factor
(iii) Flux
(iv) Coefficient of utilization
(v) Depreciation factor

- (vi) Space Height Ratio (SHR)
(vii) State explain factors considered for electrical lighting design

6. (a) The illumination of a drawing office with a dimension of 30m x 10m is to have a value of 250 lux and is to be provided by a number of 300 watts filament lamp. If the coefficient of utilization is 0.4 and depreciation factor is 0.9 and luminous efficiency of each lamp is 4 lumen per watt. Determine the number of lamps required.

