

FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA
DEPARTMENT OF INDUSTRIAL AND TECHNOLOGY EDUCATION
SECOND SEMESTER EXAMINATION
2017/2018 SESSION

Course Title: Electrical Drafting
Course Code: I E T 521
Credit Units: 2 units
Time Allowed: 2 hours
Instructions: Answer questions one (1) and any other three.

1. (a). Define Electrical Drafting and state what it provides.
(b). Sketch neatly how a 415V three-phase four wire supply may be obtained from an 11KVA Delta- connected transformer. Assuming that the three phase four wire supply feeds a small factory. Show how the following loads should be connected:
 - (i). Three phase 415V Electric Motor
 - (ii). Single phase 415V welding machine
 - (iii). Two single phase 240V staff quarters
 - (iv). Three single phase 240V office accommodation
 - (v). Comment on the load distribution.
2. (a). Define estimating and state its purpose.
(b). As an expert in Electrical installation work, what are the facts you must know to be able to prepare an estimate for an internal wiring job?
(c). Write short notes on the following components of estimating:
 - (i). Estimating
 - (ii). Electrical Schedule
 - (iii). Catalogues
 - (iv). Market Survey and Source Selection
 - (v). Contingencies
3. (a). State any two general requirements that made fire alarm become increasingly sophisticated and reliable in recent years.
(b). Sketch and briefly explain any two types of High Intensity Discharge (HID) lamps.
(c). State any five factors that must be taken into consideration in the design of service-entrance equipment.
(d) What is the position of the IEE Regulations in Electrical Installation practice?
4. (a). State the relationship between a one line and three – line diagrams.
(b). Where are these HID lamps mostly used?
(c). What are the major components of a public address system?
(d). With the aid of a neat diagram, show the Flow chart plan of a single or three Phase supply building wiring installations.
5. (a). Define public address system (PAS) and give any five examples where it is used.
(b). With the aid of a neat diagram, show how a three phase (four wire) consumer electrical wiring is to be carried out. Show clearly how the load is distributed.
(c). Give in a tabular form, the types of material and their application of the following cross sectional areas of conductors: (i) 1.5mm², (ii) 2.5mm², (iii) 4.0mm², (iv) 6.0mm², (v) 16mm², and (vi) 25mm²