

FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA  
DEPARTMENT OF INDUSTRIAL AND TECHNOLOGY EDUCATION  
SECOND SEMESTER EXAMINATION  
2019/2020 SESSION

Course Title: Electrical Drafting  
Course Code: ITE 561  
Credit Units: 2 units  
Time Allowed: 2 hours  
Instructions: Answer any four questions.

1. (a). Define Electrical Drafting and state any five requirements that a complete set of working drawings for the average electrical system in large projects should have. **6**  
(b). Sketch the flow chart for single and three phase supply building wiring regulations. **9**
2. (a). Define estimating and state its purpose. **2.5**  
(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? **5**  
(c). Write short notes on the following components of estimating: **7.5 (1.5 each)**
  - (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. **3**  
(b). Differentiate very clearly between single-line and three-line diagrams. **3**  
(c). State any five factors that must be taken into consideration in the design of service-entrance equipment. **9**
4. (a). Sketch the connection of a ring circuit diagram of six socket outlets, and give some of its advantages over a radial type. **5**  
(b). Give in a tabular form, the types of material and their application of the following cross sectional areas of conductors: (i) 1.5mm<sup>2</sup>, (ii) 2.5mm<sup>2</sup>, (iii) 4.0mm<sup>2</sup>, (iv) 6.0mm<sup>2</sup>, (v) 16mm<sup>2</sup>, and (vi) 25mm<sup>2</sup>. **5**  
(c). Calculate the energy consumed in a building whose meter reading ranged from 0389567 and 0496548 in one month. Assuming the service authority charges N34.33 per unit, add 7.5% VAT. **5**
5. (a). Define public address system (PAS) and give any five examples where it is used. **3**  
(b). Distinguish clearly, the difference between Overhead and Underground transmission **4**  
and distribution systems.  
(c). List 10 components of overhead lines. **4**  
(d). List any five important requirements of the insulating materials to be used On underground cables. **4**