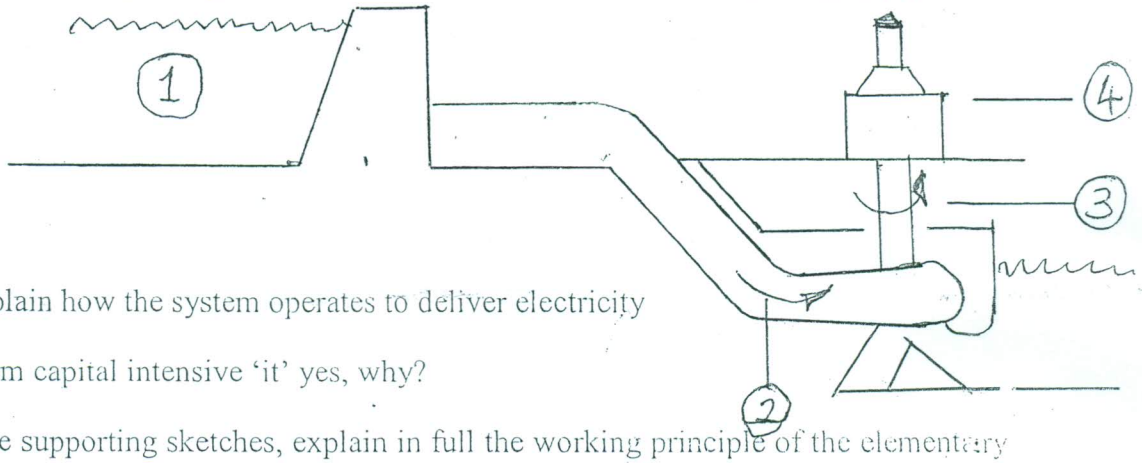
FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA
SCHOOL OF SCIENCE AND TECHNOLOGY EDUCATION
INDUSTRIAL AND TECHNOLOGY EDUCATION DEPARTMENT
2018/2019 SECOND SEMESTER EXAMINATION EXERCISE

COURSE TITLE:	Electrical Power and DC Machines
COURSE CODE:	ITE 361
INSTRUCTION:	Answer Question 1 And 3 Others.
TIME ALLOWED:	2hours

Q1. Identify the following energy converter and also name the labeled parts ((1)-(4)) from the diagram.



Q1b. Briefly explain how the system operates to deliver electricity

Q1c. Is the system capital intensive 'it' yes, why?

Q2a. With all the supporting sketches, explain in full the working principle of the elementary DC generator.

Q2b. Similarly, explain the principle of operation of a DC motor.

Q3a. Illustrate the sequence of connection of the following protective devices from the supply authority's meter to the distribution box (DB).

(i) Miniature circuit breaker (MC)
(ii) Earth leakage circuit breaker (ELCB) and (iii) FSCS to install 1 15a socket, 3 ceiling pans and a 100w Lamp controlled by 1-gang 2-two way switch.
Note: the stablocks are rated 30A, 25A, 20A, 15A, 10A & 5A.

Q3b. Explain the role of each of the following:

(i) Earth electrode (ii) Stablock (iii) Final Sub circuit (iv) ELCB

Q4a. Explain briefly the meaning of integrated power system. Your claim must be supported by sketches.

Q4b. write down the ranges of the following voltages:

(i) Low voltage (ii) Medium voltage (iii) High voltage (iv) Extra high voltage