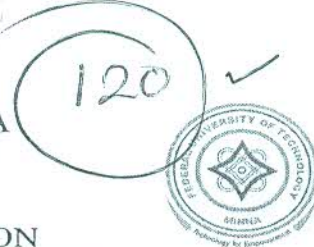


FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA  
SCHOOL OF ENVIRONMENTAL TECHNOLOGY  
DEPARTMENT OF QUANTITY SURVEYING



SECOND SEMESTER EXAMINATION 2017/2018 SESSION

COURSE CODE: QTS 524 COURSE TITLE: HEAVY ENGINEERING II

TIME ALLOWED: 2½ Hour

CREDIT LOAD: 2 Units

INSTRUCTION: Attempt all Questions. All assumption should be clearly stated.

**Question 1:** The Federal Government of Nigeria through the Nigeria National Petroleum Corporation (NNPC) is desirous to commence Crude Exploration in Chad Basin (Onshore) and your firm is hired by NNPC as the Consultant Cost Engineer to prepare the Bills of Quantities (BOQ) for the project.

- a. Outline all works required for this project? ..... 5 marks
- b. Explain with supporting sketches; the Survey and Drilling process? ..... 10 marks
- c. Measure and prepare a draft BOQ for the works listed in 2b ..... 5 marks

**Question 2:** Maizube Farms Limited is desirous to link Garatu village with 33KV electricity supply from FUT Gidan-Kwano covering a total distance of 5,600 meters. The H.T. Concrete Poles are erected at 50 meters interval and the poles are located on moderately firm soil.

You are required to:

- a. Sketch a typical 33KVA High Tension Transmission Lines Structure including necessary detail and take-off quantities for H.T. Concrete Poles (only) ..... 10 marks
- b. Sketch a typical Sub-station Base for 500KVA/33KV/415V Transformer including all necessary sub-station installation details and take-off quantities for all item necessary for complete sub-station installation ..... 15 marks

**Question 3:**

- a. What do you understand by Industrial Engineering works? (5 marks)
- b. What are the similarities between “BESMM3” and “SMMIEC”? ..... 5 marks
- c. Outline all works covered as “Heavy Engineering Works” in SMMIEC ..... 5 marks