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7/11/17
19/1/17
20/1/17

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

HEAVY ENGINEERING II (QTS 524) SECOND SEMESTER EXAMINATION, 2016/2017
SESSION

TIME ALLOWED: 2½ Hour

Credit unit: 2

LEVEL: 500

INSTRUCTIONS: Attempt all Questions. all assumption should be clearly stated.

Question 1:

- 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

Question 2: Federal Government of Nigeria through its Petroleum Marketing Company 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 3: 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

[Signature]
10/08/2017