

DEPARTMENT OF SURVEYING AND GEOINFORMATICS
SCHOOL OF ENVIRONMENTAL TECHNOLOGY
FEDERAL UNIVERSITY OF TECHNOLOGY MINNA, NIGER STATE.

SEMESTER: 1ST Semester Examination

SESSION: 2019/2020.

COUSE TITLE: Basic Surveying III

COURSE CODE: SVG211

TIME: 2 Hours, 30 minutes.

Date: 22/03/2021.

INSTRUCTION: Answer any 5 out of 7 questions.

- 1a) Setting out of bridges is necessary in road construction, discuss.
- 1b) Highlight the procedures in setting out a bridge.
- 2a) With graphical illustrations where necessary, explain
 - i. Abutments
 - ii. Wing walls
 - iii. Cross-section of earthwork
- 2b) Highlight how to ensure verticality during setting out of high rise structures.
- 3a) You have been contracted to set out from the architectural plan of the environmental complex, FUTMINNA, Gidan-kwano campus of Niger state. As a surveyor, discuss the steps involved to achieve a successful setting out of the structure.
- 3b) What are the requirements a surveyor must fulfil when setting out a structure from a design plan?
- 4a) Write short explanatory notes on the general methods of calculating earthworks
- 4b) Cross-sections were drawn from a level survey at 25m intervals along a proposed road. From station 1 at chainage 00m to station 9 at chainage 200m, the cross-section areas of cut were found to be: 00 m = 30 m², 25 m = 35 m², 50 m = 42 m², 75 m = 48 m², 100 m = 53 m², 125 m = 42 m², 150 m = 31 m², 175 m = 26 m², 200 m = 18 m². Calculate the volume of cut in cubic meters using Simpson's rule and End areas rule.
- 5a) List and briefly discuss methods of plane tabling survey.
- 5b) List and briefly discuss methods of representing scale on a map.
- 6a) what are the processes involved in carrying out a control survey?
- 6b) Itemize major factors affecting accuracy for a control survey.
- 6c) What are major factors affecting the positioning a control station?
- 7a) List and explain four (4) methods of representing relief on maps.
- 7b) Highlight the expression for curvature correction in earthwork measurement.