FEDERAL UNIVERSITY OF TECHNOLOGY MINNA

(School of Environmental Sciences)

DEPARTMENT OF SURVEYING AND GEOINFORMATICS

First Semester Examinations 2019/2020 Session

SVG 416 Hydrographic Surveying II

Instruction: Answer any **four** questions
Time Allowed: 2 hours 30 minutes

Q.1 (a) What are the purpose of Sounding operation in Surveying?

(b) State and explain briefly the factors to be considered prior to any sounding operation.

(c) State and explain briefly the basic requirements of a sounding vessel.

(d) In order to ensure a good coverage of sea bed with sounding data, what are the things to be plan?

Q.2 (a) Describe a method of finding approximately the considered in your sounding discharge of a river, stating the requirements of a site for the relevant measurements.

(b) Calculate the discharge of a river, given the following measurements made with a flow meter:

Distance across River from one bank (m)	0	10	20	30	40	50	60	70
Depth of bed (m)	0	0.7	1.2	1.5	1.8	1.5	0.9	0
Rate of flow at 0.6 depth (m/s)	0	0.15	0.24	0.30	0.36	0.33	0.24	0

Q.3(a) During a hydrographic Survey three shore stations A, B and C were established such that AB = 792m and BC = 870m, the three stations lying in a straight line. Angles APB and BPC were measured simultaneously by sextant as 48° 36' and 46° 24', respectively, from a float P which was then due east of B. Determine the reduced bearing of ABC, give that A lies southwards of B.

(b) State the difference between a hydrographic chart used for sea navigation and a bathymetric Map.

Q.4 (a) Describe with diagram(s) sweeping in hydrographic surveying.

(b) What is a SONAR equipment and state their kinds and uses?

(c)What are the characteristics of Echo Sounder as a SONAR equipment?

(d) With diagrams show examples and describe briefly Echo Sounder Transducer configurations for Economic wide line spacing.

(e) What are the factors upon which lateral coverage depend?

Q.5 (a) Explain briefly the basic components of Echo Sounder.

(b) Explain with diagram(s) the Bar-check method of calibration of Echo Sounder.

(c) With diagrams explain the basic concepts of Tide-generating forces.