MAASAI MARA UNVERSITY

REGULAR UNIVERSITY EXAMINATIONS
2017/ 2018 ACADEMIC YEAR
THIRD YEAR FIRST SEMESTER

SCHOOL OF TOURISM & NATURAL RESOURCES MANAGEMENT
BACHEOR OF SCIENCE (FORESTRY)

COURSE CODE: FOR 312
COURSE TITLE: FORESTRY HYDROLOGY

DATE: 23RD APRIL 2018 **TIME:1100 – 1300HRS**

INSTRUCTIONS TO CANDIDATES

Answer **ALL** questions in Section A, and any **THREE** questions in Section B

Use illustrations where appropriate. A simple calculator required during this examination. Borrowing of any materials from other candidates is strictly not allowed.

SECTION A (COMPULSORY)

Question One

(a).What is the purpose of hydrology? **(2 marks)**

(b) Explain two differences between the local hydrological cycle of a forest region the general one usually found in hydrology literature **(4 marks)**

(d) Make a sketch of a typical total streamflow hydrograph then identify its main characteristics. **(5 marks)**

(e)Describe two hydrological characteristics of Tropical forests **(4 marks)**

(f) $Q = KA (h_1 - h_2)/L$

(i) Identify the equation above and explain each of the terms **(6 marks)**

(ii)Describe an experiment that one would do to demonstrate the validity of the relationship summarized in the equation. **(4 marks)**

[Total 25 marks]

SECTION B (ANSWER ONLY THREE QUESTIONS)

Q2

(a)With the aid of sketches describe any two stream gauging methods. **(5 marks)**

(b)Explain the hazards associated with each of the methods in (2a) that a hydrologist should be aware off while planning a stream gauging fieldwork operation. **(10 marks)**

Q3 Discuss the importance of water to human being showing clearly why we should respect our water resources. **[15 marks]**

Q4 Using illustrations, describe the advantages and disadvantages of using the arithmetic method to estimate annual aerial precipitation over a catchment. **(15 marks)**

Q5 Write short notes on any FIVE of the following;

i. Water quality **(3 marks)**
ii. Water hyacinth**(3 marks)**
iii. Duputs's formular**(3 mks)**
iv. Evaporimeters **(3 marks)**
v. Soil erosion equation**(3mks)**
vi. Piezometric surface**(3 mks)**
vii. Rating equation**(3 marks)**
viii. Fog-water harvesting**(3 mks)**

Q6 Discuss the problems in groundwater development found in rapidly developing tropical regions. (**15 marks)**

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