



FACULTY: ENGINEERING
DEPARTMENT: CIVIL ENGINEERING
SECOND SEMESTER EXAMINATION (JULY 2017)
2016/2017 ACADEMIC SESSION

Course Title: HYDROLOGY

Course Code: CVE 304

Instructions:

- 1) Answer questions 1 and any other three (Use necessary equations and expressions)
- 2) Time Allowed: 2 hours
- 3) SEVERE PENALTIES APPLY FOR MISCONDUCT, CHEATING, POSSESSION OF UNAUTHORIZED MATERIALS DURING EXAM

Instruction: Answer questions 1 and any other three (Use necessary equations and expressions)

QUESTION 1 (30 Marks)

- a) Write a detailed note on hydrology (the note must include definition, history of hydrology, precipitation etc.). (5 marks)
- b) Figure Q1 shows a brief summary of the hydrological cycle. Label the diagram (i to x) appropriately as required. (5 marks)
- c) What is an hydrograph? (5 marks)
- d) Table Q1 presents rainfall in a selected location using different rain gauges. Using the table, answer the following:
- Determine arithmetic mean of the rainfall.(5 marks)
 - Mean rainfall using Thesis Method. (5 marks)
- e) Fill in the following spaces with appropriate word. Runoff is that part of precipitation which appears as streamflow. There are three types of runoff (-----, ----- and -----). In most streams,----- comes largely from groundwater. Water that reaches the stream by traveling over the soil surface is referred to as----- . Water that moves through upper soil layers and returns to the surface or appears in streams promptly, but does not enter the water table is----- or ----- (5 marks)

Table Q1: Rainfall data from selected rain gauges

Rain gauge	A	B	C	D	E	F
Depth of Water (mm)	8.81	12.15	15.26	1.18	5.62	9.80
Catchment Area (m ²)	65.00	150.60	269.78	216.98	56.99	136.67