



The Open University of Sri Lanka
Faculty of Engineering Technology
Bachelor of Industrial Studies (Agriculture)
Final Examination- 2008/2009
AEI6235 Hydrology and water resources

Date : 18-03-2009
Time : 0930-1230 hours

SECTION 2: Answer any four (04) questions. All questions carry equal marks.

1. (a) Briefly explain the siting of a rain gauge.
(b)(i) Explain briefly how to estimate the missing precipitation data.
(ii) Precipitation station X was inoperative for part of a month during which a storm occurred. The respective storm totals at three surrounding stations A, B, and C was 110, 98 and 120mm. The normal annual precipitation amounts at stations X, A, B and C are respectively 950, 1100, 905 and 1250. Estimate the storm precipitation for station X.
2. (a) Briefly explain the types of current meters used in stream gauge measurements.
(b) Compute the discharge of the stream whose current meter measured data are given below.

Distance (m)	0	0.6	1.2	1.8	2.4	3.0	3.6	4.2	4.8	5.4	6.0	6.6
Depth(d) in m	0	0.3	1.2	2.1	2.5	2.2	1.6	1.4	1.0	0.6	0.4	0
Velocity (m/sec) at 0.2d	0	0.4	0.5	0.7	0.8	0.8	0.7	0.6	0.5	0.5	0.4	0
Velocity (m/sec) At 0.8d	0	0.2	0.3	0.5	0.6	0.3	0.5	0.4	0.3	0.3	0.3	0

3. (a) Briefly explain the types of correlation used in Hydrological studies.
(b) Following is the frequency table of the River flow. Calculate the standard deviation and coefficient of variability.

X mid point	Frequency
6.95	3
10.95	5
14.95	7
18.95	6
22.95	3
26.95	1

4. (a) Write a brief note on Aquifer Characteristics influencing yield of wells
(b) Briefly describe the pumping test procedure and its importance in groundwater management.
5. Briefly describe the design and construction of tube wells in Sri Lanka
6. Briefly describe the groundwater contamination with suitable examples from Sri Lanka.