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FACULTY OF ENGINEERING &TECHNOLOGY

T.E.(Civil) Year Examination-June-2015

Water Resource Engineering-1

(Revised)

Time: Three Hours **Maximum Marks: 80**

"Please check whether you have got the right question paper."

i) Q. No. 1 and Q. No. 6 are compulsory.

ii) Attempt any three questions from each section.

iii) Figure to right indicates full marks.

iv) Assume suitable data if necessary.

SECTION-A

Q.1 Answer the following (any five) 10

1) List out various practical applications of hydrology.
2) Draw neat sketch of hydrological cycle.
3) Enlist various form of precipitation.
4) Define air mass and air front.
5) Differentiate between direct runoff and base flow.
6) What are the uses of unit hydrograph?
7) What are the assumption underlying the unit hydrograph theory?
8) Give three empirical formula that are commonly used to estimate the design flood.

Q.2 a) Explain the factors affecting the evapotranspiration process. 04

b) Discuss the factors affecting flood hydrograph. 06

Q.3 A catchment area has seven rain gauge stations. In a year the annual rainfall recorded by the gauge are: 10

Station	Rainfall(cm)
A	90.0
B	98.5
C	93.3
D	72.4
E	75.7
F	89.0
G	91.7

For a 5% error in the estimation of the mean rainfall, calculate minimum number of additional station required in the catchment.

Q.4 Describe the principle of working of a weighing bucket type recording rain gauge with a neat sketch. 10

Q.5 Write short notes on : (any two) 10

1) Gumbels distribution
2) Log Pearson type3 distribution
3) Infiltrometer
3) Therese polygon method
4) S-curve method.

SECTION-B

Q.6 Answer the following (any five) 10

1) Explain the terms ‘duty’ and delta’.
2) What is the difference between gross command area and culturable command area?
3) Give the relation between duty and delta.
4) Define Aquifer and aquiclude.
5) Enlist different types of irrigation.
6) Explain the term ‘storage coefficient’ and ‘coefficient of transmissibility’
7) Distinguish between gravitational water and capillary water.
8) Define ‘permanent wilting point’.

Q.7 Explain with neat sketch different water shed structure in drainage line treatment. 10

Q.8 Derive the equation for steady flow in a well in a confined aquifer. 10

Q.9 Discuss remedial measures of water logging. 10

Q.10 Write short notes on (any two) 10

1) Recharge of ground water
2) Crop rotation
3) Methods of improving duty.
4) Consumptive use of water.
5) Methods of applying water to crops.