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Total Number of Pages : 02

B.Tech.
PECI5401

7th Semester Regular/Back Examination 2017-18

Water Resources Engineering

BRANCH : CIVIL

Time : 3 Hours

Max Marks : 70

Q.CODE : B338

Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.

Q1 Answer the following questions :

(2x10)

- What are the precautions to be taken in selecting site for the location of a rain gauge ?
- Define *probable maximum precipitation*.
- Differentiate between *perennial* and *ephemeral* stream.
- What are the limitations of unit hydrograph theory?
- What is the probability that 5 year flood will occur at least once during next 3 years?
- As the rainfall supply continues, the rate of infiltration decreases, Why?
- What is flood routing?
- What is the philosophy of most economical sections?
- What are the functions of jetties?
- What is the importance of *specific energy diagram*?

Q2 a) Explain Hydrologic Cycle with neat sketch.

(5)

- b) A 6 hr storm produced rainfall intensities of 7, 18, 25, 12, 10 and 3 mm/hr in successive one hour intervals in a basin of 800 sq.km. The resulting runoff is observed to be 2640 ha.m. Determine ϕ - index for the basin.

(5)

Q3 a) Explain briefly the dilution method of flow measurement. List the qualities of a good tracer for use in this method.

(5)

- b) How do you measure evaporation using Pan and Water Budget Equation Method?

(5)

Q4 a) In a 4 hr. storm with 50 mm of excess rainfall from a basin, the flows in the stream were as follows :

(4+4)

Time (hrs)	0	2	4	6	8	12	16	20
Flow (m ³ /s)	0	1.22	4.05	6.75	5.67	3.35	1.35	0

Determine the ordinates of unit hydrograph. Estimate the peak flow and the time of its occurrence in a flood created by a 8 hr storm, which results in 2.5 cm of effective rainfall during the first 4 hours and 3.75 cm of effective rainfall during the second 4 hours. Assume the base flow as negligible.

- b) What are the factors which affect the flood hydrograph?

(2)

Q5 a) Write a brief note on frequency factor and its estimation by Gumbel's method.

(5)

- b) Differentiate between hydraulic and hydrological method of flood routing.

(5)

