PAPER ID-310463

Subject Code: NCE035

Roll No: | | | | | | | | | | | | | |

B.TECH
(SEM VII) THEORY EXAMINATION 2020-21
ENGINEERING HYDROLOGY

Time: 3 Hours ***Total Marks: 100***

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. 2 x 10 = 20

a.	What do you understand by precipitation?
b.	What is the purpose of Water Budget Equation in Hydrology?
c.	Describe the Infiltration process.
d.	What do you understand by precipitation?
e.	What is run-off.
f.	Explain factor affecting runoff hydrograph.
g.	What do you understand by Flood?
h.	How can we conduct flood frequencies studies?
i.	Explain specific capacity in tube well.
j.	Describe well losses.

SECTION B

2. Attempt any *three* of the following: 10x3=30

a.	State the Hydrological budget equation for a catchment area with equation.
b.	Distinguish between: (i) Aquifer and aquitard. (ii) Specific capacity of a well and specific yield of an aquifer. (iii) Aquiclude and aquifuge. (iv) Unconfined aquifer and leaky aquifer.
c.	Explain theory of unit hydrograph with limitation in detail.
d.	Explain flood forecasting & its control in detail.
e.	State and explain aquifers and its types in detail. Also describe its properties.

SECTION C

3. Attempt any *one* part of the following: 10x1=10

a.	What do you understand by Probable Maximum Precipitation (PMP) over a basin? Also explain how PMP is estimated?
b.	What is meant by hydrological cycle? How can the parameters of the cycle be written in an equation form? Draw a neat diagram to illustrate your answer.

4. Attempt any *one* part of the following: 10x1=10

a.	What is meant by Evapotranspiration? Also explain measurement of evapotranspiration.
b.	Describe Infiltration capacity curve and Horton equation.

5. Attempt any *one* part of the following: 10x1=10

a.	What is S-curve Hydrograph and Synthetic Unit Hydrograph?
b.	What is run-off? What are the factors that affect the run-off from a catchment area Describe the methods of computing run-off from a catchment area.

6. Attempt any *one* part of the following: 10x1=10

a.	What do you mean by design flood? What are the factors affecting the flood hydrograph? Explain the procedure of using a unit hydrograph to develop the flood hydrograph due to a storm in a catchment**.**
b.	Explain the terms risk, reliability and safety factor.

7. Attempt any *one* part of the following: 10x1=10

a.	Develop an equation relating the steady state discharge from a well in an unconfined aquifer and depths of water table at two known positions from the well. State clearly all the assumption involved in your derivation**.**
b.	The discharge from a fully penetrating well operating under steady state in a confined aquifer of 35 m thickness is 3000 lpm. Values of drawdown at two observation wells I 2 and 120 m away from the well are 3.0 and 0.30 m respectively. Determine the permeabilib4 of the aquifer.