

Total No. of Questions : 8]

SEAT No. :

P-7504

[Total No. of Pages : 2

[6180]-11

T.E. (Civil)

**HYDROLOGY AND WATER RESOURCES
ENGINEERING**

(2019 Pattern) (Semester - I) (301001)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *Q.No 1 or Q. No 2, Q.No 3 or Q.No 4, Q.No 5 or Q.No 6, Q.No 7 or Q. No 8.*
- 2) *Neat diagrams must be drawn whenever necessary.*
- 3) *Figures to the right indicate full marks.*
- 4) *Assume suitable data, if necessary.*

Q1) a) Explain Q-GIS and its application in hydrology. **[10]**

b) Explain Rational formula and its importance. **[8]**

OR

Q2) a) Explain watershed delineation procedure using a topo sheet with neat sketches. **[10]**

b) Explain flood routing in detail. **[8]**

Q3) a) Explain how will you fix the capacity of reservoir using annual inflow and outflow? **[10]**

b) What are reservoir losses and suggest method to control leakages from reservoir? **[7]**

OR

Q4) a) What are various investigations required for reservoir planning? **[10]**

b) State measures to control reservoir sedimentation. **[7]**

Q5) a) Derive the formula to calculate discharge of a well in a confined aquifer and unconfined aquifer. **[10]**

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- b) What is water logging? Explain tile drain method and also state formula for spacing of tile drains. [8]

OR

Q6) a) Explain reclamation of saline lands. [10]

- b) State various types of tube wells and explain construction of slotted type tube well. [8]

Q7) a) Explain Piped Distribution Network (PDN) and state its advantages. [10]

- b) Explain Hortons curve with neat sketch. [7]

OR

Q8) a) State principle Indian crops and explain their planning and agricultural practices. [2+4+4]

- b) Differentiate between surface irrigation and subsurface irrigation and explain drip irrigation in detail. [7]

