[6262]-1

T.E.(Civil Engineering)
HYDROLOGY AND WATER RESOURCES ENGINEERING
(2019 Pattern) (Semester -I) (301001)

Time : 2½ Hours]   *[Max. Marks :70*

Instructions to the candidates:

1) *Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.*
2) *Neat diagrams must be drawn wherever 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 detial.   **[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]**

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

OR

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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) What is evaporation, state Meyer's formula and Rowher's formula and explain every term in formula. **[10]**

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

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