

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-IV (NEW) EXAMINATION – SUMMER 2022

Subject Code:3144005**Date:29-06-2022****Subject Name:Water Resource Engineering & Hydrology****Time:10:30 AM TO 01:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

	MARKS
Q.1 (a) Explain Ogee spillway in detail.	03
(b) How is maintenance of open drains carried out?	04
(c) Explain Water pressure force & Uplift pressure force acting on gravity dam.	07
Q.2 (a) Explain causes of reservoir sedimentation.	03
(b) Explain Duty, Delta, and Base period in context of crop water requirement.	04
(c) Explain various types & forms of precipitation.	07
OR	
(c) Enlist different methods for estimation of average rainfall. Explain isohyetal method.	07
Q.3 (a) Define: 1) Buffer storage 2) Live storage 3) Dead storage	03
(b) Explain base flow separation in detail.	04
(c) Design an irrigation channel for following data using Lacey's theory. $Q = 50$ cumecs & Silt factor = 1.0	07
OR	
Q.3 (a) Give factors affecting site selection for reservoir planning.	03
(b) Explain components of single peaked hydrograph.	04
(c) Design an irrigation channel to carry a discharge of 40 cumecs by Kennedy theory. Take B/D ratio as 6.5, $N=0.025$ & $m=1$	07
Q.4 (a) Explain Muskingum method for storage of reservoir.	03
(b) What is field capacity? Write factors influencing field capacity.	04
(c) Explain Level crossing & Super passage.	07
OR	
Q.4 (a) Explain safe yield of reservoir.	03
(b) Explain frequency of irrigation. Write factors affecting frequency of irrigation.	04
(c) Explain Lacey's theory for design of unlined channel & give its drawbacks.	07
Q.5 (a) Explain Salinity. Give its causes & Effects.	03
(b) Give factors affecting site selection for constructing dam.	04
(c) Explain procedure for calculating reservoir life.	07
OR	
Q.5 (a) Explain: Why spillway is required?	03
(b) Explain different types of water logging.	04
(c) Discuss: Sediment Management in detail.	07
