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RETEST EXAMINATION (OLD)

November/December-2025

Semester : 3rd

Subject Code : CV-301(OLD)

WATER RESOURCES ENGINEERING

Full Marks – 70

Time – Three hours

The figures in the margin indicate full marks
for the questions.

Instruction :

- Question Nos.1, 2 and 3 are compulsory. Answer any *five* from the rest.

1. Fill in the blanks : 1×5=5

(a) Straight furrows are used where the land slope is _____.

(b) _____ may be defined as the process of artificially supplying water to soil for raising crops.

(c) _____ is the time, in days, that a crop takes from the instant of its sowing to that of its harvest.

[Turn over

- (d) 1 cumec day is equal to ____ hectare-metres.
(e) ____ is defined as the duty at the outlet.

2. Write True or False :

1×5=5

- (a) Isohyets are lines of equal precipitation.
(b) The phenomenon of evaporation from water surfaces, from the soil and from plants is known as boiling.
(c) The flow in open channel is called steady if the velocity of fluid remains constant with respect to time.
(d) The form of precipitation which size of water droplets is above 6.25 mm, it is known as Drizzle.
(e) A dam is a hydraulic structure constructed across a river to store water on its downstream side.

3. Choose the correct answers :

1×5=5

(a) Select the correct one :

- (i) $\Delta = 8.64 \times \text{Base period/Duty}$
(ii) $\Delta + 8.64 \times \text{Base period/Duty}$
(iii) $\Delta \times 8.64 = \text{Base period/Duty}$
(iv) $\Delta + 8.64 = \text{Base period/Duty}$

- (b) Lining of irrigation canal is necessary
- (i) to maximise the seepage
 - (ii) to minimise the seepage
- (c) The hydraulic failures of earth dams are
- (i) 30% (ii) 40%
 - (iii) 33% (iv) 45%
- (d) A Canal is said to be permanent when it is fed by a
- (i) Permanent source of supply
 - (ii) Non-permanent source of supply
 - (iii) None of the above
- (e) Spillway crest gates are of
- (i) Three types (ii) Four types
 - (iii) Two types (iv) None of these.
4. (a) What is runoff? What are the factors affecting runoff? 2+5=7
- (b) How can duty be improved? 4
5. (a) Explain with diagram the hydrologic cycle. 4
- (b) Explain briefly the different types of rain gauge with the help of neat sketch. 7

6. (a) Enumerate the various forces acting on a gravity dam with the help of figure. 6
- (b) List the various causes of failure of earth dam. Discuss briefly. 5
7. (a) What is Cross-drainage work ? 2
- (b) Write down the various types of cross-drainage work. 4
- (c) Describe any two types of Cross-drainage work with sketch. 5
8. (a) Explain with the help of a diagram, the various component parts, along with the functions of a diversion headwork. 7
- (b) Describe the differences between weirs and barrages. 4
9. (a) What is water logging ? 2
- (b) Describe the ill effects of water logging. 5
- (c) What are the advantages of canal lining ? 4
10. (a) Differentiate between Afforestation and Deforestation. 2
- (b) Describe the objectives of Watershed management. 4
- (c) What do you mean by soil erosion ? How it can be minimized ? 2+3=5