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END SEMESTER EXAMINATION (NEP)
NOVEMBER/DECEMBER – 2025

Semester : 3rd (NEP)

Branch : Civil Engineering

Course Code : CEPC-306

**Course Name : WATER RESOURCES
ENGINEERING**

Full Marks – 60

Pass Marks – 24

Time – Three hours

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

Instructions :

- (i) Question Nos. 1, 2, and 3 are compulsory.
- (ii) Answer any *five* questions from the rest.

1. Fill in the blanks :

$1 \times 5 = 5$

- (a) The unit of Delta is _____.
- (b) _____ is the time, in days, that a crop takes from the instant of its sowing to that of its harvest.
- (c) A _____ is a hydraulic structure constructed across a river to store water on its up-stream side.

[Turn over

(d) In India, crop grown in summer is known as _____ crop.

(e) _____ of irrigation channels decreases water logging.

2 Write True or False : $1 \times 5 = 5$

(a) Hydrograph are lines of equal precipitation.

(b) A Isohyets is a plot of stream flow against time.

(c) A gravity dam requires the least maintenance.

(d) The form of precipitation which size of water droplets is above 0.5mm it is known as Drizzle.

(e) A dam is a building structure constructed across a river to store water on its up-stream side.

3. Choose the correct answers : $1 \times 5 = 5$

(a) Gross command area (GCA) and Culturable command area (CCA) is related as

(i) $GCA = CCA$

(ii) $GCA = CCA + Unculturable\ area$

(iii) $CCA = GCA + Unculturable\ area$

(iv) $CCA = GCA \times Unculturable\ area$

4. (a) What are the factors affecting runoff ? 4

(b) Describe in brief the different methods of calculating average rainfall over a basin ? 5

5. (a) Explain with neat diagram the hydrologic cycle. 4

(b) Explain the different types of automatic rain gauge with the help of neat sketch. 5

6. (a) What is bandhara irrigation ? 2

(b) What is drip irrigation ? 2

(c) Explain with the help of a diagram, the various component parts, along with the functions of a diversion headwork. 5

7. (a) Write down the various types of dams. 2

(b) List the various causes of failure of earth dam. Discuss briefly. 3

(c) Enumerate the various forces acting on a gravity dam with the help of figure. 4

8. (a) What is cross-drainage work ? 1

(b) What are the advantages of canal lining ? 3

(c) Describe any two types of cross-drainage work with sketch. 5

9. (a) Differentiate between weir and barrages. 4

(b) Describe briefly the different components of weirs. 5

10. (a) Write the functions of marginal embankment. 3

(b) Describe the ill effects of water logging. 3

(c) Why river bank protection is necessary ? 3

COURSE OUTCOME (CO)

Questions no.	COs
Question 1	
1a	2
1b	2
1c	4
1d	2
1e	3
Question no.2	
2a	1
2b	1
2c	5
2d	1
2e	5
Question no.3	
3a	2
3b	1
3c	5
3d	4
3e	4
4a	1
4b	1
5a	1
5b	1

6a	2
6b	2
6c	3
7a	4
7b	4
7c	4
8a	3
8b	2
8c	4
9a	4
9b	4
10a	5
10b	4
10c	5