

(DCE 313)

B.Tech DEGREE EXAMINATION, MAY - 2015

(Examination at the end of Third Year)

Civil Engineering

Paper - III : WATER RESOURCES ENGINEERING - I

Time : 3 Hours

Maximum Marks : 75

Answer question No.1 compulsory

(15)

Answer ONE question from each unit

(4 × 15 = 60)

- 1) a) Define hydrograph.
- b) What is run off?
- c) What is the purpose of well development?
- d) What is saturation capacity?
- e) Define Precipitation.
- f) What is the difference between canal falls and canal escape?
- g) What is meant by balancing depth?
- h) Define head regulators.
- i) Define canal regulators.
- j) Explain rotational formula with units.
- k) Define zone of saturation.
- l) Define Kor depth and Kor period.
- m) What is specific retention?
- n) Define specific yield.
- o) List out losses in canal.

UNIT – I

- 2) a) Explain various types of precipitation.
b) Describe various methods of computing average rainfall over a basin.

OR

- 3) a) Explain about different types of Aquifers.
b) Give the classification of water resources development project and mention the functional requirements of a multi purpose project.

UNIT - II

- 4) a) What are the functional requirements of multi-purpose projects?
b) Explain about benefits and ill – effects of irrigation.

OR

- 5) a) List out and explain various methods of surface irrigation.
b) A field channel has culturable commanded area of 2000 hectare. The intensity of irrigation for gram is 30% and for wheat is 50%. Gram has Kor period of 18 days and Kor depth of 12 cm, while wheat has a Kor period of 15 days and Kor depth of 15 cm. Calculate the discharge of the field channel.

UNIT - III

- 6) a) What are the causes and ill effects of water logging?
b) A channel has to be designed for the following data; discharge $Q = 30 \text{ m}^3/\text{sec}$, silt factor $f = 1.0$, side slope = $1/2 : 1$. Find also the longitudinal slope.

OR

- 7) Explain about Kennedy's theory of silt supporting capacity and its drawbacks.

UNIT - IV

- 8) a) Explain about the component parts of a diversion head work with neat sketch.
b) Write about the causes of failures of weirs and their remedies.

OR

- 9) a) Differentiate between non-modular and semi-modular outlets. Give examples.
b) Discuss about the necessity and location of falls.

