

MAY 2017
(REVISED COURSE)
(3 Hours)

QP Code : 13407
[Total Marks : 80]

- N.B.: (1) Question no.1 is compulsory
(2) Solve any 3 questions out of remaining
(3) Assume data wherever necessary and clearly mention the assumptions made.
(4) Draw neat figures as required.

1. Answer any four out of the following 20
- Write a short note on Techniques of water distribution to the farm
 - What are the factors affecting duty? How can duty be improved.
 - What do you understand by precipitation? Explain various types of precipitation.
 - Define the terms Aquifer, Aquiclude, Aquifuge, Aquitard and Perched aquifer
 - What are the factors on which the selection of site of reservoir depends?
 - Discuss the various forces acting on gravity dam.
2. (a) Explain the different types of Irrigation efficiencies in detail 6
- (b) A water course has CCA of 1200 ha. The intensity of irrigation for crop A is 40% and for crop B is 35 %, both the crops being Rabbi crops. Crop A has kor period of 20 days and crop B has kor period of 15 days. Calculate the discharge of water course if the kor depth for Crop A is 10 cm and for crop B is 16 cm 7
- (c) What is Hydrograph and Unit Hydrograph? Draw a single peaked hydrograph and explain n its components 7
3. (a) What is Runoff? What are the factors affecting runoff and methods of calculation of runoff 10
- (b) The ordinates of a 3 hr unit hydrograph are given below : 10
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|-------------------------------|---|----|----|----|----|----|----|----|----|----|----|
| Time (hr) | 0 | 3 | 6 | 9 | 12 | 15 | 18 | 21 | 24 | 27 | 30 |
| Ordinates (m ³ /s) | 0 | 10 | 25 | 20 | 16 | 12 | 9 | 7 | 5 | 3 | 0 |
- Find the ordinates of 6 hr unit hydrograph for the same basin, analytically. Also sketch this unit hydrograph. What is the peak value of discharge in this unit hydrograph.
4. (a) Explain the Recuperation test in detail with neat sketch. 10
- (b) Derive an expression for discharge from a well fully penetrating an confined aquifer. 10
5. (a) Explain the various types of reservoirs. What do you understand by multipurpose reservoir. 8
- (b) Write a note on stability requirement of gravity dam 8
- (c) Discuss advantages and disadvantages of buttress dam 4
6. (a) What are the causes of failure of earthen dam 10
- (b) Write a short note on following : 10
- Cross Drainage Works.
 - Canal lining