(7) BE-sem-VII- CBGS-Civil- IE

02
25/5/16

QP Code : 31322

(CBGS)

(3 Hours) **Total Marks: 80**

N.B. : (1) Question 1 is compulsory
(2) Attempt any three questions out of remaining.
(3) Draw neat sketches wherever necessary
(4) Assume suitable data if necessary and state it clearly.

Qu.1. Solve any four from following (20)

(a) Explain the importance of irrigation in India. How irrigation helps in growing the economy.
(b) Explain with neat sketch hydrology cycle and its importance in Indian context.
(c) Differentiate between confined and unconfined aquifer
(d) Explain various causes of failure of earthen dams
(e) Write note on Ogee spillway

Qu. 2

(a) Find the delta for sugarcane when its duty is 730 hectares/cumec on the field and the base period of crop being 110 days (6)
(b) Explain relation between duty, delta and base period (6)
(c) What are the various methods of application of water to field. Discuss method of application you will adopt for sloping land. (8)

Qu 3.

(a) What so you understand by unit hydrograph. (6)
(b) Explain specific yield and specific retention. (4)
(c) Given below are the ordinates of a 6hr unit hydrograph for a catchment. Calculate the ordinates of the direct runoff hydrograph due to rainfall excess of 3.5 cm occurring in 6hr. (10)

Time (hour)	0	3	6	9	12	15	18	24	30	36	42	48	54	60	69
Unit hydrograph ordinate in m3/sec	0	25	50	90	130	160	190	160	105	65	40	25	18	10	0

Qu.4.

(a) Discuss briefly as how the water is stored into the ground water reservoir. Briefly mention the various zones and importance of the 'zone of saturation' in this connection. (10)
(b) A 30 cm diameter well penetrates 20 m below the static water table. After 24 hours of pumping at 5000 liters per minute, the water level in a test well at 100 m away is lowered by 0.5 m and in a way at 30 m away, the drawdown is 1m. What is the transmissibility of the aquifer. (10)

Qu. 5

(a) Explain various forces that acts on the gravity dam. (6)
(b) What do you mean by multipurpose reservoir. (4)
(c) Find the seepage per meter length through the body of the dam, coefficient of permeability of the dam material may be 5×10^{-3} cm/sec. The details of the earthen dams are given below. Top width of the dam= 6m; upstream side slop 4:1 and downstream side slope 3:1; height of the dam =20m. Length of the horizontal filter 30 m. Draw a top flow line (Pheratic line) (10)

Qu. 6

(a) Describe causes and effects of water logging. (4)
(b) Write short note on Bandhara irrigation. (4)
(c) Write in brief about canal outlets and its significance . (6)
(d) Distinguish between siphon aqueduct and canal siphon with neat sketch. (6)

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