BE - Civil - Sem VII - CBSGS

65

IE

04/12/15

QP Code : 5930

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

N.B (1) Question 1 is compulsory
(2) Solve any three questions out of remaining five questions
(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) Define irrigation and irrigation engineering and explain the necessity of irrigation in India
(b) Define hydrology and explain with neat sketch hydrological cycle.
(c) Explain the terms : aquifer, aquiclude and aquifuge
(d) What are the various forces that acts on gravity dam, explain each of them.
(e) What do you understand by canal lining, state its advantages.

Qu. 2

(a) Derive relation between 'duty 'and 'delta'. (5)
(b) An irrigation canal has gross command area of 80,000 hectares out of which 85% is culturable command area. The intensity of irrigation for Kharif crop is 30% and for Rabi crop is 60%. Find the discharge required at the head of the canal if the duty at its head is 800 hectares/cumec for Kharif and for Rabi is 1700 hectares/cumec. (8)
(c) Describe drip irrigation also state what are the favorable conditions to use drip irrigation and sprinkler irrigation. (7)

Qu 3.

(a) State methods of computing average rainfall over the basin and explain any one of them. (5)
(b) What is unit hydrograph and S hydrograph. State significance of each one (6)
(c) The ordinates of a 4hr unit hydrograph are given below. Determine the ordinates of 12 hr unit hydrograph. (9)

Time (hour)	0	4	8	12	16	20	24	28	32	36	40	44
Ordinate in m3/sec	0	24	84	159	184	151	103	64	36	17	6	0

Qu.4..

(a) Derive an equation for discharge from a well in an unconfined aquifer (6)
(b) A 40 cm diameter well fully penetrates an unconfined aquifer whose bottom is 75 m below the undisturbed ground water table. When pumped at a steady rate of 1.40 m^3/min. The drawdowns observed in observation wells at radial distances of 4 m and 14 m are 4m and 2m respectively. Determine the drawdown in the well. (9)
(c) Explain recuperation test. (5)

Qu. 5

(a) What do you mean by reservoir sedimentation. State methods to control sedimentation. (5)
(b) Distinguish with neat sketches between (5)
  (i) Low gravity dams and high gravity dams
  (ii) Theoretical and practical profile of gravity dam
(c) Explain causes of failure of earth dam. (6)
(d) Describes usefulness of arch dam and buttress dam (4)

Qu. 6
(a) Design an irrigation channel to carry a discharge of 40 cumec. Take N=0.0225 and critical velocity ratio as 1. The channel bed slope is 0.20 meters per kilometers. (8)
(b) Write short note on diversion head works with sketch. (6)

Course: B.E. (Sem VII) (REV. -2012) (CBSGS) (Civil Engg.) (Prog-T2627)

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Correction:

Pl refer QP CODE 5930 .. BE Civil SEM-VII

CBGS. Irrigation Engineering on 4th Dec 2015

Marks distribution for Qu 6

(a) 11

(b) 09

Query Update time: 04/12/2015 11:50 AM Block. 12, 15, 14, 18, 19

Block 12

1) Priyanka 39271484 Priyanka..

2) Khan Faisal 39271490 K. faisal

Supervisor

Javed kazi

Block 18

1) 39271529

2) 39271527

Supervisor.

Block. 14

1) 39271517 Dudulu

2) 39271518 Sonal

Supervisor

Block 19

1) 39271540

2) 39271539

Supervisor.

Block 15

1) 39271500

2) 39271505

supervisor. Apeksha

Apeksha M Khopade 4/12/15

(P. P. Gawade)

S. S.