QP Code: RD18001041 Reg. No | | | | | | | | | | | AR 18

GIET MAIN CAMPUS AUTONOMOUS GUNUPUR – 765022
B. Tech Degree Examinations, December – 2020
(Fifth Semester)
BCEPC 5030 – IRRIGATION ENGINEERING
(Civil Engineering)

Time: 2 hrs Maximum: 50 Marks

The figures in the right hand margin indicate marks.

PART – A: (Multiple Choice Questions) (1 x 10 = 10 Marks)

a. The irrigation capacity of one unit of water is called
   a. Duty b. Delta
   c. Kor watering d. Kor depth

b. The ratio of the quantity of water stored into the root zone of the crops to the quantity of water delivered to the irrigation field is known as
   a. Water storage efficiency b. Water use efficiency
   c. Water distribution efficiency d. None of the above

c. The time period elapsed between the instant of its sowing and the instant of its harvesting is called
   a. Base period b. Kor period
   c. Crop period d. delta

d. The canals do not have any kind of weir at their head to regulate the flow of water from the river and they are taken out from the river is known as
   a. Perennial canal b. Inundation canal
   c. Super passage d. None of the above

e. Co efficient of Rugosity (n) of earth is
   a. 0.0225 b. 0.0315
   c. 0.0025 d. 0.0115

f. The openings provided in the weir wall, located on the same side of the off taking canal is known as
   a. Diversion canal b. Under sluices
   c. Under piping d. Cross drainage works

g. The hydraulic structure in which the drainage is passing over the irrigation canal is known as
   a. Canal syphon b. Siphon Aqueduct
   c. Aqueduct d. Super passage

h. The process of reclaimation of saline soil is known as
   a. Salinization b. Neutralization
   c. Leaching d. Water logging

i. When the surface of the spillway is made to coincide with the shape of the lower nappe of free falling water jet, then it is known as
   a. Ogee spillway b. Drop spillway
   c. Trough spillway d. Shaft spillway

j. The elementary profile of a gravity dam is right angled triangle with base width

a. h/ρ b. $H/\sqrt{\rho}$

c. H/ρ d. $\sqrt{H/\rho}$

PART – B (Short answer Question)

Q2. Answer all questions **(2 x 5 = 10 marks)**

a. What are the major crop seasons in india

b. Find the delta of cotton, when duty is 2560 hectares / cumec on the field. Assume the base period of the crop as 50 days

c. Define perennial canals

d. State the effects of water logging

e. Distinguish between guide bank and marginal bank

PART – C (Long answer Question) **(6 x 5 = 30 Marks)**

Answer **ANY FIVE** questions Marks

3. A stream of water of 125 lit/sec was diverted from a canal and 100 lit/sec were delivered to the field. Areas of 1.6 hectares were irrigated in 8 hours. The effective depth of root zone was 1.7 m. the runoff loss in the field was 420 m^3. The depth of water penetration varied linearly from 1.7 m at the head end of the field to 1.1 m at the tail end. Available moisture holding capacity of the soil is 20 cm / per meter depth of soil. Determine the various irrigation efficiencies. (6)
4. How do you estimate consumptive use of water in the field (6)
5. Explain the Kennedy's and Lacey's theories of canal design (6)
6. Explain the various types of canal lining (6)
7. Briefly discuss about the various types of cross drainage works with neat sketch (6)
8. Define diversion head works and explain their components with neat sketch (6)
9. Name the forces acting on a gravity dam. Enumerate with sketch wherever necessary (6)
10. Explain the various steps that can be taken in the design and in the construction of an earth dam to reduce seepage from it . (6)

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