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Total number of printed pages – 2

B. Tech  
PCCI 4305

Sixth Semester (Special/Back) Examination – 2013

IRRIGATION ENGINEERING

BRANCH : CIVIL

QUESTION CODE : E 310

Full Marks – 70

Time : 3 Hours

Answer Question No. 1 which is compulsory and any **five** from the rest.  
The figures in the right-hand margin indicate marks.

1. Answer the following questions :

2 × 10

- State the various techniques of water distribution in the farms commonly adopted in our country.
- What do you mean by crop period ?
- Explain briefly the importance of duty.
- How can you define a hydraulically and economically efficient channel ?
- State various types of lining commonly adopted.
- What is meant by a regime channel ?
- Distinguish between a weir and a barrage.
- What do you mean by a gravity dam ?
- State various types of spillways.
- State the components of a diversion head work.



P.T.O.

2. (a) Define duty and delta and develop the inter relationship for a given base period. 5
- (b) Water is released at a head sluice at the rate of 6 cumecs. If the duty at the field is 80 hectares/cumec and the loss of water in transit is 25%, calculate the area of the land that can be irrigated. 5
3. Describe the important factors considered in fixing the alignment of a main canal. Explain the advantages of lining. 5 + 5
4. What do you mean by a cross drainage work ? State various types of cross drainage work. Distinguish between aqueduct and siphon aqueduct. 2 + 3 + 5
5. Explain the design of a weir using Bligh's theory. 10
6. Distinguish between Kennedy's theory and Lacey's theory with design of a stable channel. Explain the merits of each approach. 7 + 3
7. Distinguish between a head regulator and cross regulator. Draw the typical sketch of canal head regulator. 5 + 5
8. Write short notes on (any **two**) : 5×2
  - (a) various systems of irrigation
  - (b) Layout of a diversion headwork
  - (c) irrigation efficiency.

