

III B.Tech II Semester Supplementary Examinations, April/May 2006
IRRIGATION ENGINEERING-I
(Civil Engineering)

Time: 3 hours**Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Explain the advantages and ill effects of irrigation? [8]
(b) Explain the methods of improving soil fertility. [8]
2. (a) Derive a relation between duty, delta and Base period. [8]
(b) Explain the factors affecting the Duty of water. [8]
3. (a) Explain
 i. Temporary & Permanent wilting points
 ii. Field capacity [8]
(b) What are the advantages of crop rotation. [8]
4. (a) What do you mean by precipitation? Explain various types of precipitation? [8]
(b) Explain the methods of determining the flood discharge. [8]
5. (a) What is a unit-hydrograph? How is it derived? [8]
(b) What do you understand by infiltration index? How do you determine it? [8]
6. (a) Derive an expression for discharge from a well in unconfined aquifer. The well fully penetrates it. [8]
(b) Define
 i. Storage coefficient
 ii. Coefficient of permeability [8]
7. (a) Explain Lacey's silt theory. [8]
(b) Using Lacey's theory, design an irrigation channel for the following data:
 discharge $Q = 50 \text{ cumecs}$
 silt factor $f = 1.0$
 side slope = 1/2:1 [8]
8. (a) With the help of neat diagram, explain the component parts of a diversion head work? [8]
(b) Explain the Bligh's theory for design of impervious floor. [8]
