

Code No: RT32351

**R13****SET - 1****III B. Tech II Semester Regular/Supplementary Examinations, April - 2018**  
**IRRIGATION AND DRAINAGE ENGINEERING**

(Agricultural Engineering)

Time: 3 hours

Max. Marks: 70

- Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)  
2. Answering the question in **Part-A** is compulsory  
3. Answer any **THREE** Questions from **Part-B**

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**PART -A**

- 1 a) Enlist different methods of measurement of soil moisture? [2M]  
b) How do you determine infiltration depth in furrows by which method? [4M]  
c) Briefly explain the tracer method for measuring discharges in canals? [4M]  
d) Differentiate tile drains and mole drains? [4M]  
e) Differentiate herring bone and gridiron system of drainage? [3M]  
f) Enlist different drainage structures? What is Bio-drainage and vertical drainage? [5M]

**PART -B**

- 2 a) Explain different soil moisture constants? [8M]  
b) Derive Israelson's equation for border irrigation? [4M]  
c) How do you determine the infiltration depth in furrow irrigation? [4M]
- 3 a) How do you measure irrigation water with the help of Parshall flume? [8M]  
Differentiate between submerged orifice and free flow orifice with neat diagram  
b) Basic difference between Triangular notch and Trapezoidal notch. [4M]  
c) Explain critical flows in flumes. [4M]
- 4 a) How do you measure irrigation water with the help of Parshall flume? [8M]  
Differentiate between submerged orifice and free flow orifice with neat diagram  
b) What are different methods of measurement of irrigation water? [8M]
- 5 a) How do you explain the design of open drainage channels using Manning's equation? [8M]  
b) Differentiate between gridiron and interceptor drains? [5M]  
c) What are the envelope materials generally used for sub-surface drains. [3M]
- 6 a) Define salt balance? Classification and reclamation of saline and alkaline soils - explain? [12M]  
b) Differentiate between Leaching Requirement and Leaching Ratio? [4M]
- 7 a) Differentiate between NIR and GIR? [6M]  
b) Differentiate between Irrigation Frequency and Irrigation Period? [4M]  
c) Advantages and disadvantages of check basin irrigation? [6M]

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