



## Irrigation Water Distribution Systems (1040)

**P. Pages : 2**

**Time : Three Hours**

**Max. Marks : 100**

Instructions to Candidates :

1. Do not write anything on question paper except Seat No.
2. Answer sheet should be written with blue ink only. Graph or diagram should be drawn with the same pen being used for writing paper or black HB pencil.
3. Students should note, no supplement will be provided.
4. Solve **any five** questions.

1. a) Differentiate between contour border and contour check methods of irrigation ? Give their design criteria. 10  
b) Differentiate between furrow and alternate furrow methods of irrigation. Under what conditions is the alternate furrow method adopted with advantages. 10
2. a) Discuss the various types of canals, according to various classification systems. Also discuss the various considerations for alignment of a canal. 15  
b) Describe the Bandhara Irrigation system. 5
3. a) Explain step by step the method of designing an irrigation channel if culturable commanded area and the details of the crops along the canal are given. 15  
b) Explain various methods of discharge measurement in a canal. 5
4. a) What is an outlet state the requirements that an outlet should fulfill. Find the relation between sensitivity and flexibility of an outlet. 10  
b) What do you understand by rigid module ? Describe the working of Gibb's module. 10

5. a) What are the functions of regulator and falls on main canal ? 10  
 Discuss how are these works made safe against failure by  
 (i) piping (ii) Bed scour.
- b) Enumerate and describe the different components of a sprinkler 10  
 system. Give a sketch layout plan of a typical sprinkler system.
6. a) What are the essential components of a drip irrigation system ? 10  
 Draw a lay out plan of the drip irrigation system.
- b) What are the limitations in the large scale adoption of 10  
 underground pipelines in on - farm irrigation management  
 systems ?
7. a) Discuss the possible courses of water losses in a canal ? Explain 15  
 in details the methods adopted for reducing such losses.
- b) State how you will fix up the following in an irrigation canal. 5  
 i) Fully supply level.  
 ii) Fully supply discharge.
8. Write short note on following **all**. 20  
 i) Standing wave flume.  
 ii) USBR type proportional division box.  
 iii) Types of weirs.  
 iv) Different types of canal drops.

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