

Roll No.

Total No. of Pages : 02

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B.Tech.(CE) (Sem.-4)
IRRIGATION ENGINEERING-I

Subject Code : BTCE-405

M.Code : 56087

Date of Examination : 12-07-22

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1) Answer briefly :

- a. List the various disadvantages of irrigation.
- b. Write a short note on conjunctive use of surface and ground water.
- c. Differentiate between the natural subsurface irrigation and the artificial sub surface irrigation.
- d. What do you understand by safe yield of a Tubewell?
- e. What do you understand by balancing depth and what is its significance?
- f. Briefly describe border strip method of irrigation.
- g. What is the importance of drainage in irrigated lands?
- h. Draw the cross-section of a canal partly in cutting and partly in filling.
- i. Define confined aquifer and unconfined aquifer.
- j. Why soil is rendered unproductive and infertile?

SECTION-B

- 2) What are the defects in Kennedy's and Lacey's theories?

- 3) a. Why is Irrigation necessary? Discuss the impact of irrigation on human environment
b. Explain the concept of Ideal cropping pattern particularly *w.r.t* North India.
- 4) How will you determine the depth and frequency of irrigation on the basis of soil-moisture regime concept?
- 5) Determine the size at the outlet of a 6 hectare drainage system, if the drainage coefficient is 1 cm and the tile grade is 0.5%. Assume the rugosity coefficient for tile material as 0.011.
- 6) Enumerate the different methods which are used for controlling and training rivers and describe anyone of these methods in details.

SECTION-C

7. Describe in detail about the sprinkler irrigation method and enumerate its advantages and disadvantages.
8. a. Design a tube well for the following data:
Yield required =0.05 cumec
Thickness of confined aquifer = 25 m
Coefficient of permeability =50 m/day
Draw down =4m
Radius of influence =300 m.
b. What is a guide bank? Draw a good sketch of a guide bank and explain its different parts.
9. What do you mean by ‘cut off’? How are they used as a method of river training? Draw a neat plan and section of a Bell’s bund and give salient steps of its design procedure.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.