

[Total No. of Questions - 9] [Total No. of Printed Pages - 2]

May-26-0388

CE-703 (Irrigation and Design of Hydraulic Structures)

B.Tech. 7th (CBCS)

Time : 3 Hours

Max. Marks : 60

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : This paper contains a total of 9 questions, attempt five questions in all, and select one question each from section A, B, C and D. Section E is compulsory.

SECTION - A

1. Explain briefly the advantages, disadvantages, and various sources of Irrigation in India for the development of the country. (3+3+4=10)
2. Enumerate the various methods of surface and sub-surface Irrigation. Under what circumstances these are used for irrigation? (10)

SECTION - B

3. What is consumptive use? Discuss the types, and factors affecting consumptive use. (3+3+4=10)
4. Define the following terms:
 - (i) Saturation capacity and Field capacity.
 - (ii) Optimum moisture and readily available moisture.
 - (iii) Kor watering and Paleo irrigation. (3+4+3=10)

SECTION - C

5. Explain in detail the different forces acting on the upstream side of the dam and outside of these. Which force is neglected while going to design the arch dam? (10)

2

CE-703

6. Explain the different types of Arch dams with a neat sketch of each. Write down the basic differences between central angle and constant angle arch dam. (5+5=10)

SECTION - D

7. Explain the procedure for the design of Sarda Falls. (10)
8. What is the difference between a weir and a barrage? Discuss briefly the components, alignment, and design procedure of the canal head regulator. (2+8=10)

SECTION - E (Compulsory)

9. (i) Write a short note on the development of the irrigation system in India.
 - (ii) Write short notes on crop season and crop rotation.
 - (iii) Define the intensity of irrigation, consumptive use, Kor depth, and cash crops.
 - (iv) What do you understand by border flooding?
 - (v) How can we control the excessive seepage in Irrigation?
 - (vi) Write one major difference between constant radius and constant angle arch dam.
 - (vii) Write the role of a fish ladder in diversion head work.
 - (viii) Write short notes on various types of Dams.
 - (ix) Describe the outlet factor of the water requirement of the crop.
 - (x) Distinguish between vertical and Sarda fall. (10×2=20)