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Eighth Semester B.E. Degree Examination, Feb./Mar. 2022 Hydraulic Structures

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Explain with neat sketch water pressure and uplift pressure of the gravity dam. (08 Marks)
b. Explain various types of stresses on horizontal plane and vertical plane. (08 Marks)

OR

- 2 a. Distinguish between elementary profile and practical profile of gravity dam. (06 Marks)
b. Write a note on : i) Foundation gallery ii) Inspection gallery. (10 Marks)

Module-2

- 3 a. With a typical cross section of an earthen dam. Explain the components. (08 Marks)
b. Explain advantages and disadvantages of earthen dam. (08 Marks)

OR

- 4 a. Explain types of earthen dam. (08 Marks)
b. List out design criteria of earthen dam. (08 Marks)

Module-3

- 5 a. Describe briefly on ogee spillway. (08 Marks)
b. Define energy dissipaters. What are the needs to provide it? (08 Marks)

OR

- 6 a. Explain Khosla's theory. (08 Marks)
b. Write a typical layout of a canal head work and explain its components. (08 Marks)

Module-4

- 7 a. Explain the necessity of cross drainage work. (08 Marks)
b. Explain various types of cross drainage work. (08 Marks)

OR

- 8 a. List out design consideration cross drainage work. (08 Marks)
b. Design a suitable cross drainage work using following data (design only drainage water way and canal way)

Canal	Drainage
FSD = 32 cumes	HFD = 300 cumes
FSL = RL 213.5m	HFL = 210.0m
Canal bed level = RL 212.0m	High flood depth = 2.5m
Canal width = 20m	Ground level = 212.5m
Canal water depth = 1.5m	
Slop : 1 H : 1V	

(08 Marks)

Module-5

- 9 a. Explain the main function of head and cross regulators. (08 Marks)
b. What is the necessity of canal falls? Explain any two types of canal falls with sketches. (08 Marks)

OR

- 10 a. Explain any two types of outlets with figure. (08 Marks)
b. List out requirements for a good canal module/outlets. (08 Marks)
