Total No. of Printed Pages:03

SUBJECT CODE NO: E-238
FACULTY OF ENGINEERING AND TECHNOLOGY
B.E.(CIVIL) Examination Nov/Dec 2017
Water Resources Engineering-II
(REVISED)

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B
1) Question No. 1 and 6 are compulsory.
2) Solve any two questions from the remaining questions from each section.
3) Figures to the right indicate full marks.
4) Assume suitable data if necessary.

Section A

Q.1 Solve any five. 10

i) Enlist site selection criteria for Reservoir.

ii) What do you meant by phreatic line?

iii) Differentiate low & high gravity dam.

iv) Define uplift pressure and silt pressure.

v) What is buttress dam. Enlist their types.

vi) List out modes of failures of gravity dam.

vii) Give the classification of Reservoir.

viii) Draw the diagram of zoned type of earth dam.

Q.2 a) What do you understand by mass inflow curve and how it is prepared? 08

b) Explain various types of reservoirs. What do you understand by multipurpose reservoir. 07

Q.3 a) Explain the step by step method of designing a high gravity dam. 08

b) Explain with the help of diagrams various joints and water seals provided in gravity dams. 07

Q.4 a) Derive Laplace equation for seepage through the homogeneous mass of an earth dam. 08

b) Explain the method of stability analysis of U/S slope during sudden drawdown. 07

Q.5 Write short notes:- 15

i) Flat slab buttress dam

ii) Elastic theory

iii) Fitter criteria for earth dam.

Section B

Q.6 Solve any five. 10

i) Define weir & barrage.

ii) What is the necessity of canal falls?

iii) Give the classification of canals.

iv) What do you meant by energy dissipation?

v) Enlist types of spillway gates.

vi) List out purpose of CD works.

vii) What are the functions of Modules?

viii) List out points of failure of weirs.

Q.7 a) Using Lacey's theory, design an irrigation channel for the following data: 08
Discharge Q=50 cumecs, silt factor f=1. Side slopes= ½ : 1.

b) Discuss various methods used for energy dissipation below spillways. 07

Q.8 a) What are the different types of cross drainage works that are necessary on a canal alignment? State briefly the conditions under which each one is used. 08

b) Give neat sketch of suitable designs of aqueducts for each of the following crossings: 07
a) A major canal over a small drainage
b) A canal carrying low discharge over a large drainage.

Q.9 a) Describe, in brief, various types of weirs. Distinguish clearly between a weir and a barrage. 08

b) What are the methods of controlling entry of silt at the headwork of a canal? 07

Q.10 Write a short notes on 15

i) Sarda type fall
ii) Super passage
iii) Straight drop spillway.