

M.Tech. Civil Sem-IV Self Study P-II

ZAIRE - IV : WINTER - 2016 (2011 Course CBCS)
SUBJECT : SELF STUDY PAPER - II - PIPING DESIGN

Day : Thursday
Date : 01-12-2016

Time : 11.00 A.M. TO 2.00 P.M.
Max. Marks : 60

N. B. :

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Both the sections should be written in **SEPARATE** answer books.
- 4) Draw neat and labeled diagram **WHEREVER** necessary.
- 5) Assume suitable data, if necessary.

SECTION - I

Q. 1 Explain the phenomenon of piping in earthen dams. (10)

OR

Q. 1 What are different factors of resistance of embankment to piping? (10)

Q. 2 What are different methods of increase in flow path? (10)

OR

Q. 2 Give different criteria for filter design. (10)

Q. 3 Show by means of a sketch the how net of seepage, stream lines and equipotential lines. (10)

OR

Q. 3 Why seepage through earthen dams needs to be controlled and indicate the starting location of piping phenomenon? (10)

SECTION - II

Q. 4 Which are the three causes of failure of earth dams? (10)

OR

Q. 4 State seven criteria for safe designs of earth dam. (10)

Q. 5 Draw sketch of seepage line for homogeneous earth dam with rock toe. (10)

OR

Q. 5 Draw sketch of seepage line for zoned earth dam with a central core (composite c/s). (10)

Q. 6 Write short note on the three functions of berm. (10)

OR

Q. 6 State seven criteria for design of filters. (10)

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