Printed Pages : 2

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 180708

Roll No. | | | | | | | | | |

B. Tech.

(SEM. VII) (ODD SEM.) THEORY EXAMINATION, 2014-15

SOIL AND WATER CONSERVATION STRUCTURES

Time : **3** Hours]   [Total Marks : **100**

Note: The question paper is divided into three sections. Attempt each section.

SECTION - A

1   Attempt the following short answer type   10×2=20
     questions :

(a)   Name any four structures and its basic applications.

(b)   What is a steady state flow?

(c)   Define runoff and one runoff control structure.

(d)   For what height a drop spillway is used and why?

(e)   Define seepage. Under what conditions they occurs.'?

(f)   Classify ridge type terraces on the basis of base width?

(g)   Name two uses of check dam.

(h)   Where does the middle third rule is applied?

(i)   Why a Parshall flume is called a self cleaning devices?

(j)   What should be the minimum grade of sod spillway?

SECTION - B

2   Attempt any three parts of the following :   10×3=30
   (a)   For what purposes a Farm pond is constructed? Draw a typical farm layout.
   (b)   Explain the design criteria of a SAF stilling basin.
   (c)   What are the common modes of failure of permanent structure?
   (d)   Describe the procedure for the design of outlets of box inlet spillway?
   (e)   Explain the general description of Drop inlet Spillway.

SECTION - C

3   Attempt any five questions :   10×5=50
   (a)   What are the functional requirements of soil erosion control structures?
   (b)   What are the factors for designing an open channel? A earthen channel on a grade of 0.10%, depth of water 1.2 m, bottom width 60 cm and side slope 1:1. Calculate the velocity of flow and carrying capacity of the channel.?
   (c)   Explain the energy momentum principles for the flow of water.
   (d)   Explain the equivalent fluid pressure of triangular load diagram for various flow conditions.
   (e)   Describe the variables affecting the equivalent fluid pressure.
   (f)   Define Hydraulic Jump and explain its type, applications and energy dissipation due to jump.
   (g)   Write short notes on :
      (i)   Cost estimation of a structure of your choice.
      (ii)   Safety against sliding.

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