Printed Pages : 3

EAG-505

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

PAPER ID : **180512**

Roll No.

B. Tech.

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

IRRIGATION AND DRAINAGE ENGINEERING

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 questions : **10×2=20**

(a) Define 'delta' and 'duty' in relation to irrigation.

(b) Define 'Filter points' and 'Area of Influence.'

(c) Why soil samples are dried at 105°C in an Oven for soil moisture analysis ?

(d) What do you understand by Land grading ?

(e) Give any one difference between 'Weir" and "Orifices".

(f) What is Infiltration?

(g) Define Evapotranspiration. List any two methods to calculate.

(h) What is mulching ? Give a list of different types of mulching.

(i) What do you understand by Drainage Coefficient?

(j) For what purposes resistance blocks are used and what are their limitations ?

SECTION-B

2 Attempt any three parts of the following : **10×3=30**

(a) Discuss the steady state method for drain depth and spacing.

(b) What are the types of surface drainage and which types of soil requires drainage? Explain.

(c) Enumerate the Soil moisture constants and how they influence on the depth of irrigation?

(d) Define Irrigation and irrigation scheduling. Explain drip irrigation methodology.

(e) Discuss the Kennedy's Theory.

SECTION-C

3 Attempt any five questions : **10×5=50**

(a) Explain the soil, water plant relationship with the help of neat sketch.

(b) Discuss the levying of irrigation charges.

(c) "Crop yield is influenced by irrigation uniformity". Comment on it.

(d) A stream of 135 litres /sec was diverted from a canal and 100 litres /sec were diverted to the field. An area of 1.6 ha was irrigated in 8 hours. The effective rootzone depth was 1.8m. The runoff loss in the field was 432 cubic metre and available moisture holding capacity of the soil is 25 cm/m depth of soil. Irrigation was started at the moisture extraction level of 30% of the available moisture. Calculate: (i) Water conveyance efficiency. (ii) Water application efficiency. (iii) Water storage efficiency.

(e) What are salt affected soils? Explain the leaching requirement of sodic soil.

(f) What do you understand by canal command areas? Discuss any one development programme for canal command.

(g) Write short notes on :

(i) Acidic and saline soil.

(ii) Merits and de-merits of sprinkler irrigation.

(iii) Contour Irrigation.

(iv) Irrigation Structures.
