

**B.Tech. Civil (Water Resources Engineering)**

**Term-End Examination**

00865

December, 2014

**ET-537(A) : SOIL CONSERVATION AND AGRONOMY**

*Time : 3 hours*

*Maximum Marks : 70*

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**Note :** Answer any **seven** questions. All questions carry equal marks. Use of scientific calculator is allowed.

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1. Explain the phenomenon of raindrop erosion in agricultural land. Mention various agronomical/biological measures to control water erosion from agricultural land. 4+6=10
2. Mention the advantages and limitations of chute spillway. Also draw a neat sketch of chute spillway with SAF outlet and label its components. 5+5=10
3. (a) Explain nutrient, water and weed management in wheat crop. 5  
(b) What are the major diseases in rice ? Explain the control measures of any two such diseases. 5
4. Explain various stages of gully erosion. The annual soil erosion from a land with 5% slope and 100 m slope length was found to be 15 tons/ha. What should be the slope length for reducing soil erosion to half, keeping all other factors unchanged ? 4+6=10

5. What are the advantages of vegetative waterways ? Design a parabolic shaped grassed waterway with excellent cover to drain a 100 hectare land with drainage coefficient of 4 cm. The longitudinal slope is 2% and Manning's roughness coefficient is 0.04.  $4+6=10$
6. Explain the important factors considered for designing the bedding system and parallel field drain system. Also, mention their limitations and advantages.  $5+5=10$
7. Explain various layout patterns of tile drainage system. Compute the size of 150 m long underground tile laterals placed 40 m apart at a longitudinal slope of 0.4%. The drainage coefficient of the area is 3 cm and Manning's roughness coefficient for tiles is 0.01.  $4+6=10$
8. Describe the various growth stages of cotton cultivation. Also, explain the weed management and nutrient management in cotton.  $4+3+3=10$
9. What are the contributing factors for salinity ? Explain two important methods of reclamation of saline soils.  $4+6=10$

10. Write short notes on any **four** of the following :

$$4 \times 2 \frac{1}{2} = 10$$

- (a) Classification of infectious plant diseases
  - (b) Growth stages of sugarcane cultivation
  - (c) Types of temporary gully control structures
  - (d) Objectives of watershed management
  - (e) Advantages of crop rotation
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