No. of Printed Pages : 3

ET-537(A)

B.Tech. Civil (Water Resources Engineering)

Term-End Examination

June, 2018

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ET-537(A) : SOIL CONSERVATION AND AGRONOMY

Time : 3 hours *Maximum Marks : 70*

Note : *Answer any* ***seven*** *questions. Use of scientific calculators is allowed. Give labelled diagram whenever necessary.*

1. (a) Differentiate between soil erosion by water and wind. Compare their effects. 5

(b) How do different topographical factors affect soil erosion by water ? Explain with the help of universal soil loss equation. 5

2. (a) Write the formula for calculation of soil loss due to wind. Explain the physical significance of each term. 5

(b) Explain one important and often used measure of controlling wind erosion. 5

3. (a) Write the design steps for a bench terrace. 5

(b) How does a bench terrace help in controlling soil erosion ? What are the other advantages of bench terraces ? 5

4. (a) Write the different stages of gully erosion and explain their characteristics. 5

(b) What are the different temporary erosion control structures ? Explain one such important structure. 5

5. (a) What are the different surface drainage methods ? Explain briefly. 5

(b) How is mole drainage useful ? Explain the method to form mole drainage system. Where do we prefer this ? 5

6. (a) Explain the criteria to classify problem soils based on chemical characteristics. 5

(b) Explain one important method to correct soil salinity. What are the limitations of this method ? 5

7. (a) The slogan of "per drop more crop" can be achieved by which method of irrigation ? Explain water management in rice-wheat cropping system. 5

(b) Explain pest management in any perennial crop. 5

8. (a) Explain any biological method of insect management/control. 5

(b) What is an ultra low volume sprayer ? What is its importance ? 5

9. (a) What is the importance of rain water harvesting ? Explain the characteristics of rain water harvesting structures. 5

(b) How much area is under rainfed agriculture in India ? What are the steps to improve productivity in rainfed areas ? 5

10. Write short notes on any ***four*** of the following : $4 \times 2\frac{1}{2} = 10$

(a) Soil erosion management through improved tillage

(b) Improving soil health through green manuring

(c) Improving crop productivity through INM

(d) Water management through improved agronomic practices

(e) Role of biopesticides

(f) Role of community efforts in watershed management