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ET-537(A)

B.Tech. Civil (Water Resources Engineering)

Term-End Examination

December, 2013

ET-537(A) : SOIL CONSERVATION AND AGRONOMY

Time : 3 hours *Maximum Marks : 70*

*Note : Attempt **any seven** questions. Use of calculator is **allowed**. The answer shall be in your **own language**.*

1. What are present threats to two most important natural resources viz. Soil and water ? Explain importance of length and slope factors as used in universal soil loss equation. If the degree of slope of an area is increased from 5 to 15%, What will be the percent increase in the soil loss keeping other factors same. **3+3+4**

2. How is soil loss due to wind erosion is estimated ? What are the corrective measures to reduce soil loss due to wind erosion ? **5+5**

3. List different factors considered for in designing a terrace ? **3+7**
   For a region having soil loss 16mg per hectare per year, calculate maximum slope length and corresponding terrace spacing designed to reduce the soil loss to terrace channel to 50 percent. Assume K=0.1 l=120m, s=8%, c=0.15 p=0.7. Make any other suitable assumption, if required.

4. Explain design procedure of a checkdam. What are important precautions to be taken while selecting the location of a checkdam ? 7+3

5. What are recent approaches of drainage ? Explain the procedure of determining capacity and grades of a tile drain. 5+5

6. Explain in brief causes of salinity and alkalenity. What are different approaches to reclaim Alkali solution ? 4+6

7. Describe wheat cultivation on the following aspects : 5x2=10
   (a) sowing conditions
   (b) High yielding vaneties
   (c) Sowing methods
   (d) disease control
   (e) irrigation and fertilizer management

8. Write short notes on **any four** of the followings : 4x2.5=10
   (a) Red rot
   (b) Fertilizer use efficiency
   (c) FYM
   (d) Integreated pest management
   (e) organic farming

9. Give the extent of rainfed farming in India. What are challenges and advances in rainfed farming ? 2+8

10. Write short notes on **any four** of the following : 4x2.5=10
   (a) Green manuring
   (b) Sprayers
   (c) Vertical drainage
   (d) Social forestry
   (e) Topographic map