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**Question Paper Code: 54A04**

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2018

Fourth Semester

Agriculture Engineering

15UAG404- SOIL AND WATER CONSERVATION ENGINEERING

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

PART A - (10 x 1 = 10 Marks)

1. \_\_\_\_\_ mass of soil that can be removed with a unit force and expressed as tons per Joule. (U) CO1- R  
(a) Erodibility (b) Erosivity  
(c) Erosion (d) Non-erosivity
2. In the process of reclamation of small gullies, the cross-section spaced at horizontal intervals is CO1- R  
(a) 5-15 m (b) 15-30 m (c) 30-45 m (d) 45-60 m
3. Movement of excess precipitation water over the land surface is called as \_\_\_\_\_ CO2- R  
(a) overland flow (b) run-off (c) sheet flow (d) all the above
4. A slopy land involves relatively higher run-off coefficient than \_\_\_\_\_ CO2- R  
(a) level land (b) terraced land (c) bunded land (d) all the above
5. The spacing of bund should be equal to \_\_\_\_\_ CO3- R  
(a) critical slope length of field (b) 100m or less  
(c) 75m or less (d) 150 m
6. \_\_\_\_\_ are constructed in medium high rainfall areas having an annual rainfall of 600 mm and above CO3- R  
(a) Contour Bunds (b) Side Bunds  
(c) Graded bunds (d) Supplementary bunds

7. The height of contour bund generally ranges from 0.30 to \_\_\_\_\_ CO4- R  
 (a) 0.5 m (b) 1.0 m (c) 1.5 m (d) 2.0 m
8. Land suitable for grazing livestock \_\_\_\_\_ CO4 -R  
 (a) lower land (b) runoff land  
 (c) both a & b (d) rangeland
9. Matter that has been deposited by some natural process \_\_\_\_\_ CO5- R  
 (a) Sediment (b) Silt (c) River Sand (d) Both b & c
10. A low area where the land is saturated with water is \_\_\_\_\_ CO5 -R  
 (a) irrigated land (b) semi wet land  
 (c) wet land (d) par wet land

PART – B (5 x 2= 10Marks)

11. List the factors affecting soil erosion? CO1- R
12. Write the USLE equation CO2- R
13. Enumerate the various agronomic practices for erosion control CO3 -R
14. Define embankment. What is an embankment type reservoir? CO4 -R
15. What is Sediment Delivery Ratio? CO5 -R

PART – C (5 x 16= 80Marks)

16. (a) Brief about soil erosion agents, causes and problems CO1- U (16)  
 Or  
 (b) How to classify gully erosion? How to control it? CO1 -U (16)
17. (a) Explain about the land use capability classification in detail CO2- U (16)  
 Or  
 (b) Derive the runoff computation for soil conservation using SCS:CN method CO2 -Ana (16)

18. (a) Mention about the various mechanical measures for hill slopes erosion control CO3 -Ana (16)
- Or
- (b) What are Grassed waterways, explain their purpose, construction and maintenance CO3 -Ana (16)
19. (a) Describe about the in-situ moisture conservation techniques CO4- U (16)
- Or
- (b) Explain about the short and long term techniques of water harvesting with neat sketches CO4- Ana (16)
20. (a) What are the methods of estimation of different loads from samples CO5 -U (16)
- Or
- (b) (i) Explain the analytical method of bed load estimation CO5- U (8)
- (ii) Explain the stream sampling method of bed load estimation CO5- U (8)

