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Question Paper Code: 54A04

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2019

Fourth Semester

Agriculture Engineering

15UAG404- SOIL AND WATER CONSERVATION ENGINEERING

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. The V-shaped gullies are very common in CO1- R
(a) Hilly areas (b) Desert region (c) Level lands (d) Humid tropics
2. The particles detachment is more in CO1- R
(a) Sandy soil (b) Forest lands (c) Clay soil (d) Hill face
3. Runoff mainly causes CO2- R
(a) Gully erosion (b) Rill erosion (c) Stream bank erosion (d) Both (a) and (b)
4. A runoff plots consist of CO2- R
(a) Multi slot divisor (b) Sediment sampler (c) Measuring cylinder (d) All above
5. The use of graded bund is recommended for the areas receiving the CO3- R
annual rainfall
(a) More than 700mm (b) 250 mm (c) 350-500 mm (d) 1500 mm
6. The H.D(horizontal distance) of bund depends on CO3- R
(a) VI of bund (b) Soil type (c) Land slope (d) Both (a) and (c)
7. In earthen dam the function of core wall is to CO4- R
(a) Sand, gravels etc (b) Impervious materials
(c) Pervious materials (d) Plastic layers

8. In cantilever type retaining wall the key can be fixed CO4- R
- (a) Near the toe (b) Middle of base (c) Near the heel (d) All above
9. Which of the following is the source of sediment yield from a watershed? CO5- R
- (a) Soil erosion from forests (b) Occurrence of flood
(c) Mining excavation (d) All above
10. The number of sediment samples to be taken from a stream flow width of 30 m, should be at least CO5- R
- (a) 3 (b) 5 (c) 6 (d) 7

PART – B (5 x 2= 10 Marks)

11. Explain the mechanism of rill erosion CO1- R
12. Describe the crop management practices factor CO2- R
13. Define grassed waterways CO3- R
14. Define farm pond and write its importance CO4- R
15. Write down various sources of sediments CO5- R

PART – C (5 x 16= 80 Marks)

16. (a) Explain splash erosion and describe the characteristics of raindrop affecting splash erosion. CO1- U (16)
- Or
- (b) Classify the erosion and describe the water erosion. CO1- U (16)
17. (a) Describe land use capability classification. Also explain each and every classes with their specific features CO2-U (16)
- Or
- (b) Explain the universal soil loss equation for predicting soil loss CO2-U (16)
18. (a) Explain design of contour bunds under the following aspects: CO3-U (16)
- (i) Horizontal and vertical intervals
(ii) Bund dimension
(iii) Area lost in bund construction
- Or
- (b) Explain the design criteria of bund construction CO3-U (16)

19. (a) Write the design steps of cantilever type retaining wall CO4- U (16)
- Or
- (b) Describe the design details for pond construction CO4- U (16)
20. (a) Describe the selection criteria of sampling points in the vertical section of stream flow. CO5- U (16)
- Or
- (b) Define sediment load and explain the mechanics of sediment transport. CO5- U (16)

