**A** **Reg. No. :** | | | | | | | | | | | | |

**Question Paper Code: UA301**

B.E./B.Tech. DEGREE EXAMINATION, NOV 2024

Professional Elective

Agricultural Engineering

21AGV301 WATERSHED PLANNING AND MANAGEMENT

(Regulations 2021)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. The shape of falling limb is CO1-U

   (a) Convex (b)Concave (c) Both (a) & (b) (d) None of the above

2. The number of stream segments per unit area is termed as CO1-U

   (a) Drainage density (b) stream frequency (c) Drainage pattern (d) None of the above

3. A high value of bifurcation ratio is found in the_____ CO1-U

   (a) Flat land watershed (b) Hilly watershed (c) Both (a) & (b) (d) None of the above

4. A typical_____ gives an approximate idea about some existing infrastructure of the village CO1-U

   (a) Survey (b)Watershed (c) Venn (d) Both a & b

5. Gully erosion is the advance stage of CO1-U

   (a) Splash (b) Sheet (c) Rill (d) None of the above

6. Geologic erosion is also called as CO1-U

   (a) Normal erosion (b) Natural erosion (c) Chemical erosion (d) Both (a)&(b)

7. Design of farm pond is done for the return period of CO1-U

   (a) 15 –years (b)10 –years (c)25 –years (d) 5 –years

8. The gabion is constructed by using CO1-U

   (a) Vegetative materials (b)Wire net + stones (c)Rocks (d) RCC

9. In India, total number of soil conservation regions is CO1-U

(a) 10 (b)7 (c) 5 (d) 8

10. The "DPAP" refers to CO1-U

(a) Drought Prone Area Programme (b) Flood Prone Area Programme

(c) Rural development Programme (d) None of the above

PART – B (5 x 2= 10 Marks)

11. Illustrate the watershed and its Components CO1-U

12. Explain objective and benefits of watershed planning CO1-U

13. List out the watershed management programme CO1-U

14. Design the notch dimensions of a wooden slab dam to carry a peak flow of 0·6 $m^3$/sec. The notch has rectangular opening. Width of gully channel is 2.5 m. CO2 – App

15. Write short notes on HADP CO1-U

PART – C (5 x 16= 80 Marks)

16. (a) Explain in detail about land use capability with suitable examples. CO1 – U (16)

Or

(b) Briefly explain principles and action plan for watershed management and development CO1 – U (16)

17. (a) Derive the theory of Participatory Watershed Management concept with suitable examples CO1 – U (16)

Or

(b) Briefly explain about indicators of watershed program evaluation? CO1 – U (16)

18. (a) How will you design water conservation practices in irrigated lands? Give suitable illustrations CO2 – App (16)

Or

(b) How will you design Contour & Graded bunding and terracing in hilly areas? Give suitable illustrations CO2 – App (16)

19. (a) Briefly explain about soil conservation practices? Give suitable illustrations CO1 – U (16)

Or

(b) Explain in detail about Rain water harvesting structures and illustrations CO1 – U (16)

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| 20. | (a) | Briefly explain about Govt. of India guidelines on watershed development Programme | CO1 – U | (16) |
| | | Or | | |
| | (b) | Briefly explain about Watershed modeling? Give suitable flowchart. | CO1 – U | (16) |