

**THE KAVERY ENGINEERING COLLEGE***(An Autonomous Institution)***B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, NOV/DEC 2025***Fourth Semester**Agricultural Engineering***AI3402 - Soil and Water Conservation Engineering***Regulations - 2021**Duration : 3 Hrs**Maximum : 100 Marks****PART - A (ANSWER ALL QUESTIONS) (Marks 10\*2=20)***

| <i>Q.No</i> | <i>Questions</i>                                                           | <i>BLT</i> | <i>CO</i> | <i>Marks</i> |
|-------------|----------------------------------------------------------------------------|------------|-----------|--------------|
| 1.          | Differentiate between rill erosion and gully erosion.                      | L2         | 1         | 2            |
| 2.          | What causes accelerated soil erosion all over the world?                   | L2         | 1         | 2            |
| 3.          | Define antecedent moisture condition.                                      | L1         | 2         | 2            |
| 4.          | List the factors influencing land capability classification.               | L1         | 2         | 2            |
| 5.          | How do conservation tillage practices lead to agricultural sustainability? | L2         | 3         | 2            |
| 6.          | State the term contour.                                                    | L1         | 3         | 2            |
| 7.          | Differentiate dam and retaining wall.                                      | L2         | 4         | 2            |
| 8.          | Write the formula for Catchment and cultivable area ratio.                 | L1         | 4         | 2            |
| 9.          | Illustrate the Hjulstrom curve.                                            | L1         | 5         | 2            |
| 10.         | Give any five factors that are influencing sedimentation.                  | L1         | 5         | 2            |

***PART - B (ANSWER ALL QUESTIONS) (Marks 5\*16 = 80)***

| <i>Q.No</i> | <i>Questions</i>                                                                                                                                                                             | <i>BLT</i> | <i>CO</i> | <i>Marks</i> |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------|--------------|
| 11.         | a Explain in detail about vegetative measures of gully control.                                                                                                                              | L2         | 1         | 16           |
|             | Or                                                                                                                                                                                           |            |           |              |
|             | b Explain the modified universal soil loss equation (MUSLE) and explain each parameter in detail.                                                                                            | L2         | 1         | 16           |
| 12.         | a Describe land use capability classification based on different criteria with a special reference to slope.                                                                                 | L2         | 2         | 16           |
|             | Or                                                                                                                                                                                           |            |           |              |
|             | b Enlist different methods of estimation of peak rate of runoff and explain rational method.                                                                                                 | L2         | 2         | 16           |
| 13.         | a Summarize the classification and design specification of bench terrace.                                                                                                                    | L3         | 3         | 16           |
|             | Or                                                                                                                                                                                           |            |           |              |
|             | b Describe various shapes of grassed water ways. Why parabolic shapes are considered most suitable section of grassed water ways and explain factors affecting shapes of grassed water ways? | L3         | 3         | 16           |

|     |   |                                                                            |    |   |    |
|-----|---|----------------------------------------------------------------------------|----|---|----|
| 14. | a | Write optimization procedure for different farm pond dimensions in detail. | L2 | 4 | 16 |
|     |   | Or                                                                         |    |   |    |
|     | b | Brief about the check dam and its classification with durability check.    | L2 | 4 | 16 |
| 15. | a | Elaborate sediment graph and its importance with a neat sketch.            | L2 | 5 | 16 |
|     |   | Or                                                                         |    |   |    |
|     | b | Describe the losses due to sedimentation in water resources.               | L2 | 5 | 16 |