



## GIET UNIVERSITY, GUNUPUR – 765022

B. Sc. (AG) (Second Semester) Examinations, October – 2021  
**SWE (Ag.) 121 - Soil and Water Conservation Engineering**

Time: 2 hrs

Maximum : 50 Marks

**The figures in the right hand margin indicate marks.**

### PART – A

**Q.1. Fill in the blanks with suitable word / figure.**

(0.5 x 10 = 5 Marks)

- a. The soil erosion processes are ..... transportation and .....
- b. The erosion is widely classified into two classes; they are ..... and ..... Erosion.
- c. The forms of water erosion are the ....., ....., rill erosion and gully erosion.
- d. The sheet erosion takes place after ..... erosion but before .....
- e. Based on the shape, the gullies are classified as..... and .....
- f. The numerical value of K varies from ..... to .....
- g. The size of micro runoff plot varies from ..... to ..... m<sup>2</sup>
- h. The contour cropping is done along ..... Of the area, and ..... The slope.
- i. Graded bunds are suited to an area with annual rainfall ..... mm.
- j. Table top terraces are also known as .....

**Q.2. Define (or) Explain the following in one or two sentences.**

(1 x 5 = 5 Marks)

- a. Erosion
- b. Erosivity
- c. Erodibility
- d. Contour Bund
- e. Threshold Velocity

**Q3. Match COLUMN-A with COLUMN-B**

(0.5 x 10 = 5 Marks)

Column – A		Column – B	
(a)	Agricultural practices	(i)	Strip Cropping
(b)	Contour bunding	(ii)	Saltation
(c)	Engineering soil conservation measures	(iii)	Stream Erosion
(d)	Terracing	(iv)	Slope less than 2%
(e)	Graded bund	(v)	Slope 2 to 6%
(f)	Grassed waterway	(vi)	Slope greater than 2%
(g)	Medium Gully	(vii)	Slope 10 to 30%
(h)	Water Erosion	(viii)	Rainfall more than 600 mm/year
(i)	Wind Erosion	(ix)	Use for safe disposal of drainage water
(j)	Water Erosion Control	(x)	Depth 3 to 9 m and Width less than 18 m

**Q4. Write True or False against each statement**

**(0.5 x 10 = 5 Marks)**

- a. The rate of soil loss is greater in geologic erosion than accelerated erosion
- b. The gully erosion is a type of accelerated erosion.
- c. Sandy soil involves greater detachment of soil particles than the clay or loam soil
- d. The rain drop erosion is first stage of water erosion.
- e. Runoff causes gully and stream bank erosion.
- f. Runoff plots are used for soil loss studies.
- g. Rill erosion is the initial phase of gully erosion.
- h. Inter Rill erosion is also known as sheet erosion.
- i. The gully formation take place after rill erosion.
- j. The USLE is a conceptual model.

**PART – B**

**Attempt ANY FIVE questions. All questions carry equal marks.**

**(5 x 6 = 30 Marks)**

5. Define soil erosion and describe the factors affecting soil erosion
6. Explain Mechanics of gully formation. Explain stages of gully development.
7. Explain types of strip cropping. Enlist different mulching materials.
8. Determine the earthwork required for the construction of contour bund on a land surface with 5% slope. The horizontal spacing between two bunds is 25 metres. The base width of the bund is 1.25 m, height 1.0 m, and top width 0.5 m.
9. Enlist different types of Water harvesting techniques. Explain any one with diagram.
10. Explain Mechanics of Wind Erosion. Enlist different Wind Erosion Control measures. Explain any one.

--- End of Paper ---