Seat No: _____ **Enrollment No: _____**

PARUL UNIVERSITY

FACULTY OF ENGINEERING & TECHNOLOGY

B.Tech. Summer 2018 – 19 Examination

Semester: 5 **Date: 20/05/2019**

Subject Code: 03110305 **Time: 10:30am To 01:00pm**

Subject Name: Soil and Water Conservation Engineering **Total Marks: 60**

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 Objective Type Questions - (All are compulsory) (Each of one mark) **(15)**

1.The factors affecting soil erosion

a) climatic factor, b) temperature, c) topographical factor, d)all of the above

2. Splash erosion is also known as

a) Light erosion, b) Raindrop erosion, c) Impact erosion, d) Runoff erosion

3. The particles detachment is more in

a) Sandy Soils, b) clay soil, c) Forest lands, d) Hill face

4. The highly wind erosion affected state is

a) Madhya Pradesh , b) Andhra Pradesh , c) Gujarat, d) Rajasthan

5. In India, the total number of soil conservation regions is

a) 7 , b) 5, c) 10, d) 3

6. Terraces are constructed at the land slope_____.

7. The rill erosion is known as _____ channel erosion.

8. Contour bunding is done to check _____ erosion.

9. The side bunds can be provided at _____ of the contour bunds.

10. In one year two or more crops cultivation is known as _____ cropping pattern.

11. Define runoff.

12. Define irrigation.

13. Define Erosion.

14. Define Grassed Waterway.

15. Explain the term Terracing.

Q.2 Answer the following questions. (Attempt any three) **(15)**

A) Explain Bunds and its various types

B) Classify the Gullies as per Land Capability.

C) Explain Universal Soil Loss Equation.

D) Explain the remedial measures of soil erosion.

Q.3 A) What do you mean Water Erosion? Classify the different types of water erosion. **(07)**

B) Design a grassed waterway with trapezoidal cross-section. The data given are: peak Runoff rate (Q)= 4.0m3/s, Grade to be used(S)= 0.3%, Manning's Roughness Co-efficient (n)= 0.04, Side Slope = 2:1(H:V) **(08)**

OR

B) Calculate the following: (i) Height of the bund (ii) Cross-Sectional Area, (iii) Length of the contour bund (iv) Earthwork per ha. **(08)**

The other details are (i) Rainfall Excess= 80cm, (ii) Horizontal Interval = 15m,(iii) Land Slope S = 5% (iv) Top and Bottom width of bund = 50 cm and 125cm.

Q.4 A) Explain the following: (i.) Contour Cropping, (ii) Strip Cropping, (iii.) Mulching **(07)**

OR

A) Define Bench Terracing .Discuss the objectives and limitations of Bench Terracing. **(07)**

B) Discuss the causes and effects of the wind erosion. **(08)**