

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (Agriculture Engg.) (Sem.-4)
SOIL AND WATER CONSERVATION

Subject Code : BTAG-404-19

M.Code : 80017

Date of Examination : 09-07-22

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. Write briefly :

- a) How the specify speed value is used in pump manufacturing?
- b) What is the main difference between terrace and bunds?
- c) List out the two types of surface storage structures with examples.
- d) What are wind breaks? Give examples.
- e) List any two benefits of tillage operations.
- f) What are the different forms of wind erosion?
- g) What are the types of sediment loads?
- h) State the principle behind water harvesting.
- i) Sketch the typical sections of a contour bund and an outward sloping bench terrace stating the differences.
- j) Differentiate between aquitard and aquifuge.

SECTION-B

2. Describe with proper illustrations the different methods for the storage of water in the soil.
3. Explain the factors affecting soil compaction.
4. Which structures are used for short term water harvesting?
5. Explain about Curve number method for estimating runoff.
6. What are the engineering problems involved in soil and water conservation?

SECTION-C

7. Explain design steps of gully control structures.
8. Classify the eroded soils based on sheet erosion and wind erosion.
9. Determine the runoff from a catchment area of 100 ha for 100 years return period during which the maximum rainfall was recorded as 10 cm in 6-hour rainfall duration. The catchment area has two parts, in which one of 25 ha is under pasture. The soil of catchment is related to hydrologic group B. The initial abstraction of catchment is related as $I_a = 0.3 S$.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.