Roll No…….. **Total No. of Printed Pages: [01]**
Total No. of Questions: [09]

B. Sc. Agriculture (Semester – 3rd)
FUNDAMENTAL OF SOIL AND WATER CONSERVATION ENGINEERING
Subject Code: BAGE1-326
Paper ID: [130126]

Time: 03 Hours **Maximum Marks: 60**

Instruction for candidates:

1. Section A is compulsory. It consists of 10 parts of two marks each.
2. Section B consist of 5 questions of 5 marks each. The student has to attempt any 4 questions out of it.
3. Section C consist of 3 questions of 10 marks each. The student has to attempt any 2 questions.

Section – A **(2 marks each)**

Q1. Attempt the following:
   a. Forms of water erosion.
   b. Differentiate between direct ranging and indirect ranging
   c. Sheet erosion.
   d. Differentiate between centrifugal pump and submersible pumps
   e. Survey stations.
   f. Mechanics of wind erosion.
   g. Leveling.
   h. Advantages of Drip irrigation.
   i. Contouring.
   j. Differentiate between Engineer's chain and Gunter's chain.

Section – B **(5 marks each)**

Q2. What is soil erosion? Explain its causes and agents of soil erosion?
Q3. Discuss about gully classification and its permanent and temporary control measures?
Q4. Discuss the classification of irrigation projects? Differentiate between flow irrigation and lift irrigation?
Q5. What are the precautions to be taken while installing wire for measurement of irrigation water?
Q6. Define the followings: Back sight, Intermediate sight, Foresight, Change point, Height of Instrument.

Section – C **(10 marks each)**

Q7. What are the different agronomic and engineering soil and water conservation measures? Discuss various agronomic and engineering measures in detail?
Q8. What is drip irrigation system? What are the main components of drip irrigation system? Write its advantages and disadvantages. Draw a labeled layout diagram of drip irrigation system?
Q9. The following consecutive readings were taken with a level and 4.0m Staff on a continuously sloping ground at a common interval of 30 m –0.780, 1.535, 1.955, 2.430, 2.985,3.380, 1.250, 1.860, 2.365, 3.540, 0.935, 1.145, 1.630 and 2.645. The RL of first point A was 100.80 - m. Rule out a page of level book & enter above readings. Calculate the RL of all the points by Rise & Fall Method. Also calculate the gradient of the line joining the first & last point.