

MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END THEORY EXAMINATION

B.Sc.(Hons.) Agriculture

Semester	: II (New)	Term	: Second	Academic Year	: 2023-24
Course No.	: ENGG 121	Title	: Soil and Water Conservation Engineering		
Credits	: 2 (1+1)				
Day & Date	: Saturday, 18.05.2024	Time	: 10:00 to 12:00 hrs.	Total Marks	: 40

- Note :
1. Solve ANY EIGHT questions from SECTION 'A'.
 2. All questions from SECTION 'B' are compulsory.
 3. All questions carry equal marks.
 4. Draw neat diagram wherever necessary.

SECTION 'A'

- Q.1 a) State the principles of surveying. Write classification of surveys.
b) Write the characteristics of contour lines.
- Q.2 a) What are the types of soil erosion?
b) Write in brief about stages in gully development.
- Q.3 What are the types of water erosion? Write in brief about each type.
- Q.4 What is Wind erosion? Explain in brief about types of soil particle movements in wind erosion.
- Q.5 Explain the Land Use Capability Classification.
- Q.6 a) Enlist agronomical measures of soil erosion control and explain in brief about contour farming.
b) Enlist temporary and permanent gully erosion control measures.
- Q.7 a) Write the classification of gullies.
b) Explain Universal Soil Loss Equation with its factors.
- Q.8 a) What are the types of runoff? State different factors affecting runoff.
b) Compute the peak discharge rate of watershed using a rational method, if requisite details are; weighted runoff coefficient of watershed is 0.39, rainfall intensity for duration equal to time of concentration is 12.10 cm/h and the area of watershed is 45 hectares.
- Q.9 Calculate volume of excavation required to construct a dugout farm pond, if;
a) Average depth of pond = 4 m b) Bottom width of pond = 10 m
c) Side slope to be used = 2 : 1 d) Bottom length = 20 m
- Q.10 a) What is Watershed management? Write the objectives of watershed management.
b) Enlist the steps in watershed management. Explain in brief about evaluation of watershed management.

(P.T.O.)

SECTION 'B'

Q.11 Define the following terms:

- 1) Watershed
- 2) Contour bund
- 3) Water harvesting
- 4) Surveying

Q.12 Fill in the blanks:

- 1) _____, condensation, _____ and runoff are four main stages in hydrologic cycle.
- 2) The time required by the runoff water to flow from the most remote point of the area to the outlet, is called as _____.
- 3) _____ is a practice of growing alternate strips of close-growing and intertilled crops in the same field.
- 4) Metric chains are usually made in lengths of _____ meter and _____ meter.

