

2022

B.Sc. (Honours) in AGRICULTURE

2nd Semester Examination

PAPER—AGS-203

(Practical)

**SOIL AND WATER CONSERVATION
ENGINEERING**

Full Marks : 20

Time : 1 Hour

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

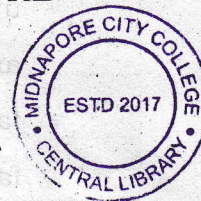
*Candidates are required to give their answers in their
own words as far as practicable.*

1. Answer any one question : 1×5

- (a) Estimate soil loss from fields with 4 percent slope and 30.5 m length of slope. Which was clearly filled and followed. The R factor for the region is 150 and soil erodibility factor is 0.33.

5

(Turn Over)





- (b) Estimate soil loss from fields with 6 percent slope and 45.75 m length of slope. Which was under conservation tillage with anjana grass and contour cultivation was followed. The R factor of the region is 160 and soil erodibility factor is 0.36. 5
- (c) On a 3 percent slope calculate the horizontal spacing of bunds in medium rainfall zone and length of bunds per hectare. 5

2. Answer any one question : 1x10

- (a) Discuss about estimation of soil loss in India.
- (b) Write the calculation procedure and determine the EI (Erosion Index) by EI_{30} method from the following rainfall data table. 8+2



Chart reading			Storm increments			Kinetic energy (E)	
Time (h)	Depth (mm)	Duration (min)	Depth (mm)	Intensity (mmh ⁻¹)	Per unit rainfall (MJ ha ⁻¹ mm ⁻¹)	For storm increment (MJ ha ⁻¹)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	
4:00	0						
4:20	1	20	1	3	0.161	0.16	
4:27	3	7	2	17	0.226	0.45	
4:36	9	9	6	40	0.259	1.55	
4:50	27	14	18	77	0.283	5.09	
5:05	32	8	2	15	0.222	0.44	
5:15	32	10	0	0	0	0	
5:30	33	15	1	4	0.219	0.22	
Total		90	33			8.64*	

* Total kinetic energy of a rain storm.

3. Laboratory Note Book. 2

4. Viva-Voce. 3

