Total page: 01

PG (CBCS)
M.SC. Semester- IV Examination, 2023
ZOOLOGY
PAPER: ZOO 495B
(ECOLOGY PRACTICAL –II)

Full Marks: 50 **Time: 6 Hours**

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. A. Describe the principle and estimate the water holding capacity of the soil sample provided. 2+3

   B. In two adjacent protected areas namely Masai-Mara and Serengeti National Park there are six different species of animals with overlapping habitat range. From the given data calculate the faunal similarity using appropriate index. 5

Area	Wolf	Giraffe	African Lion	Hyena	Leopard	Baboon
Masai-Mara National Park	0	0	20	30	50	40
Serengeti National Park	20	30	60	0	40	40

2. The number of individuals of five species of earthworm populations was studied in ten sample plots of forest ecosystem. Calculate from the given data- the density, diversity, frequency and abundance of the tree community. 10+5

Sl. No.	Name of species	Number of individuals sighted in area									
		A	B	C	D	E	F	G	H	I	J
1	*Perionyx excavatus*	3	9	0	7	0	0	4	12	2	0
2	*Lumbricus terrestris*	4	1	2	0	0	0	1	5	0	6
3	*Apporectodea turgida*	11	5	0	0	2	4	0	2	0	0
4	*Dendrobaena octaedra*	0	2	14	0	6	1	3	0	0	8
5	*Pheretima posthuma*	0	0	0	9	2	8	0	0	0	3

3. In a soil ecosystem there are 5 species of collembola and 6 species of soil mites residing in the same area competing for food. The numbers of collembola and soil mites are 60, 56, 52, 49, 44, and 41, 38, 45, 47, 29, 38 respectively. Calculate the species richness and distribution pattern of the animals using appropriate biodiversity index. 10
4. Draw and describe the structure of a High-Volume Sampler. 5
5. Laboratory note-book. 5
6. Viva voce. 5

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