EASTERN UNIVERSITY, SRI LANKA
FINAL YEAR, FIRST SEMESTER EXAMINATION IN AGRICULTURE – 2009/2010
SOIL FERTILITY MANAGEMENT (ACH – 4111)

Answer all questions
Time: One Hour

1. a. Briefly explain the challenges in sustaining soil fertility.

   c. A student wants to do a targeted yield fertilizer recommendation for paddy in his area. He got some data's from his field trial. The average values obtained from several replicates is given below.

	Average yield (qha^{-1})	Average Plant uptake ($kgha^{-1}$)			Average Soil nutrient ($kgha^{-1}$)		
		N	P	K	N	P	K
Control	19.28	30.11	5.0	13.25	175	7.0	132
Treated	38.60	71.36	16.71	99.75	265	16.4	195

If 50 kg ha^{-1} nitrogen, 30 kg ha^{-1} phosphorus and 60 kg ha^{-1} potassium was added, calculate the followings.

i. Nutrient requirement for nitrogen
ii. Nitrogen contribution from soil
iii. Nitrogen contribution from fertilizer
iv. Nitrogen fertilizer efficiency

2. a. Explain the methods can be used to assess the decline in soil fertility.

   b. Write an account on integrated use of organic manures and chemical fertilizers and its impact on environment and fertilizer use efficiency.

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