UNIVERSITY OF KABIANGA

UNIVERSITY EXAMINATIONS

2017/2018 ACADEMIC YEAR

THIRD YEAR *FIRST SEMESTER* EXAMINATIONS

FOR THE DEGREE OF BACHELOR OF SCIENCE

IN

AGRICULTURE AND BACHELOR OF SCIENCE IN HORTICULTURE

CRS 332: WEED SCIENCE AND MANAGEMENT TIME: 3 HOURS

INSTRUCTIONS TO CANDIDATES: ATTEMPT ALL QUSETIONS IN SECTION A AND ANY OTHER THREE QUESTIONS IN SECTION B

SECTION A

Q1. a). Explain the importance of weed inventory in weed management (2 Marks)

b). Describe six characteristics of weeds that make them successful in an ecosystem (6 Marks)

c). Weeds are a serious problem in conventionally tilled lands. Explain (4 Marks)

d). Explain the factors that determine the critical period of weed competition (6 Marks)

e). Explain the importance of understanding favourable and unfavorable biotic and abiotic factors influencing a given phase in weed biology (2 Marks)

f). Describe any two conventional breeding techniques to develop herbicide tolerant crops (2 Marks)

g). Explain any four herbicide mode of action (8 Marks)

h). Describe five preventive practices of weed infestation into crop field (5 Marks)

i). Biological weed control is not popular. Explain. (2 Marks)

j). Describe three categories of weeds based on life cycle (3 Marks)

SECTION B

Q2. a) . Describe any two water management approaches used in weed control in rice fields.

(4 Marks)

b). Explain the advantages of systems of rice intensification with respect to weed management **(6 Marks)**

c). An experiment was conducted at Bunyala irrigation scheme and the results were tabulated below.

Effect of rice establishment and weed control methods on rice panicle number

Rice establishment	Weed control				Mean
	WC_0	WC_1	WC_2	WC_3	
TPR	110.2	120.0	124.9	114.6	117.4
WSR	58.8	118.5	109.1	109.8	99.0
DSR	47.4	109.1	118.0	102.2	94.1
ZTR	49.1	131.7	128.2	123.1	108.0
Mean	66.4	119.8	120.1	112.4	

[a]S.E.D. for comparing main effects of establishment = 6.10, weed control = 7.18, and establishment × weed control = 13.86.

WC_0-weedy check; WC_1-herbicide + 1 hand weedings 30 DAS; WC_2-herbicide + 2 hand weedings at 30 and 60 DAS; WC_3-2 hand weedings at 30 and 60 DAS; TPR-transplanted after pudding; WSR-direct seeding after pudding; DSR-dry seed drilling after conventional tillage; ZTR-dry drill after zero tillage.

i. Explain the most sustainable rice establishment and weed control methods recommended for the area **(4 Marks)**

ii. Explain the possible reasons for high panicle number in TPR relative to other rice establishment

(6 Marks)

Q3. a). Explain herbicide resistance as used in weed science (2 Marks)

b).Describe three mechanisms for development of herbicide resistance in plants (6 Marks)

c). Discuss any six factors that contribute to development of herbicide resistance in plants (12 Marks)

Q4. i). Explain the role of biotechnology in weed management (2 Marks)

ii). List any two transgenic commercial herbicide resistant crops (2 Marks)

iii). Discuss the merits and demerits of transgenic herbicide resistant crops (16 Marks)

Q5. i). Explain the features that make a weed to be described as invasive (2 Marks)

ii). Describe the possible routes of invasive weeds into a country (6 Marks)

iii). Explain the factors that make control of water hyacinth, *Eichhornia crassipes* in Lake Victoria difficult (12 Marks)