

PAPUA NEW GUINEA UNIVERSITY OF TECHNOLOGY

DEPARTMENT OF AGRICULTURE

SECOND SEMESTER FINAL EXAMINATION 2020

AG 225: WEED SCIENCE

DATE OF EXAMINATION: 29th OCTOBER 2020

TIME: 8:20 AM

TIME ALLOWED: 3 HOURS

TOTAL MARKS: 50

INFORMATION FOR CANDIDATES

1. Sanitize your hands before entering the room and wear face masks during the examination.
2. You have 10 minutes to read the paper. You must not begin writing during this time.
3. Write your name and student number clearly on the front page of your answer booklet.
4. Answer all the questions only in the answer booklet provided. No other papers will be accepted.
5. This is a closed book examination. Notes and textbooks are not allowed during the examination.
6. The marks for each question are given within parentheses at the end of each question.
7. All mobile phones must be switched **OFF**.

QUESTION ONE (3+3+4 = 10 marks)

- i. Discuss 3 agricultural impacts of weeds.
- ii. Write 3 characteristics that make plant a 'weed'.
- iii. Classify the following weeds according to their habitat, growth form and growth season.

Species	Habitat	Growth form	Growth season
<i>Sida rhombifolia</i>	Terrestrial	a.	b.
<i>Salvinia molesta</i>	c.	Dicotyledon	d.
<i>Imperata cylindrica</i>	e.	f.	Perennial
<i>Ageratum conyzoides</i>	g.	h.	Annual

QUESTION TWO (4+2+4 = 10 marks)

- i. Differentiate between ‘weed competition’ and ‘weed allelopathy’.
- ii. Discuss the association of ‘weed allelopathy’ to seed dormancy and germination.
- iii. Show how weed allelopathy can be assessed for weed control.

QUESTION THREE (1+3+3+3 = 10 marks)

- i. Define weed scouting.
- ii. Outline 3 techniques used in scouting.
- iii. Explain 2 preventive methods of weed infestation.
- iv. Differentiate between ‘strip weeding’ and ‘ring weeding’.

QUESTION FOUR (5+6+3 = 11 marks)

- i. Compare and contrast between ‘shade trees’ in cocoa or coffee and ‘cover crop’ in oil palm.
- ii. Discuss 2 strategies for the biological control of weeds.
- iii. Write the 3 criteria used to assess a ‘good’ biological control agent.

QUESTION FIVE (1+2+6 = 9 marks)

- i. Explain foliar and residual herbicides.
- ii. Briefly explain what RNAi is and its use in suppressing weed infestation.
- iii. Write the missing information given in the table below.

Herbicide	Active ingredient	Group	Chemical family	Mechanism of action
Roundup [®]	a.	b.	c. Organophosphate /Glycine	d.
Diurex [®]	e.	f.	g.	h.
Gramoxone [®]	i.	j.	k.	l.