

**GWANDA STATE UNIVERSITY**



**FACULTY OF LIFE SCIENCES**

**DEPARTMENT OF CROP SCIENCES**

**BACHELOR OF SCIENCE HONOURS DEGREE IN CROP SCIENCE**

**Principles of Crop Protection**

**Module Code LCS 2107**

**First Semester Examination**

**June 2020**

This examination paper consists of 3 pages

**Time Allowed: 3 hours**

**Total Marks: 100**

**Special Requirements: None**

**Examiner's Name: H. TIBUGARI**

**INSTRUCTIONS**

1. Answer **all** questions in Section A
2. Answer **two** questions in Section B

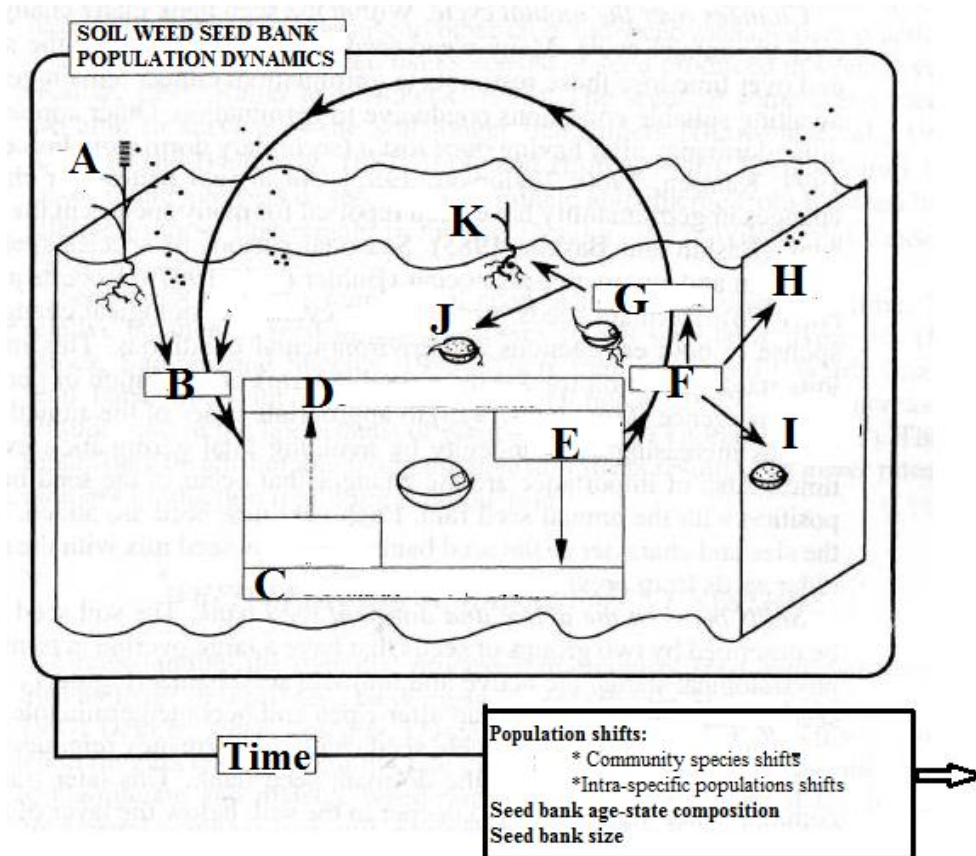
**MARK ALLOCATION**

<b>QUESTION</b>	<b>MARKS</b>
<b>SECTION A</b>	<b>60</b>
<b>SECTION B</b>	<b>40</b>
<b>TOTAL ATTAINABLE MARKS</b>	<b>100</b>

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**SECTION A: Answer ALL questions in this section**

1. a. Explain the importance of the following practices in sustainable crop production:
- i. Scouting [2]
  - ii. Taking action against pests and diseases based on economic threshold levels [2]
  - iii. Integrated crop protection [2]
- b. Explain typical symptoms associated with the following plant diseases:
- i. Blights, [2]
  - ii. Cankers, [2]
  - iii. Mildews [2]
  - iv. leaf spots [2]
- c. Explain how the following technologies reduce grain storage pests:
- i. Hermetic bags [2]
  - ii. Metal silos [2]
  - iii. Improved brick granaries [2]
- c. Using examples, explore the applications of nuclear science in pest control. [12]
- d. Explain the different processes labelled 'A' to 'K' that are occurring to the soil seedbank. [22]



- e. Explain how farmers can minimise the *seed rain* and promote *losses* from the soil seed bank. [6]

**SECTION B: Answer only TWO questions in this section**

2. a. Identify (by common and scientific names) any two important weeds that belong to the following families:
- i. Euphorbiaceae [2]
  - ii. Brassicaceae [2]
  - iii. Poacea [2]
  - iv. Solanaceae [2]
- b. Explain why there have been only a few new herbicide modes of action in the last 30 years. [12]
3. a. Examine possible reasons for slow adoption of modern crop protection methods by smallholder farmers of Zimbabwe [20].
4. Explain how climate change will affect weeds, insects and diseases of crops. [20]
5. a. Examine the six steps that must be followed when calibrating a knapsack sprayer, including how pesticide dose and volume of spray mixture applied per unit area is determined and fixed during calibration. [12]
- b. Explain any four possible causes of pesticide failure, indicating how they can be rectified. [8]

**END OF EXAMINATION**

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