



Requirements for this paper:

Multiple-choice cards:

Non-programmable calculator:

Grid paper:

Laptop:

Open book examination:

EXAMINATION:	FINAL EXAM 1	PROGRAMME:	Dip
MODULE CODE:	NATIS51210	DURATION:	3 HOURS
MODULE DESCRIPTION:	AGRICULTURAL TECHNOLOGY & INNOVATION	MARKS:	100
EXAMINER(S):	MAXWELL CHIMBUNDE	DATE:	
MODERATOR(S):	PROF AHMED MOHAMED	TIME:	

INSTRUCTIONS:

- Answer ALL questions.

QUESTION 1

(i) DEFINE AGRICULTURAL TECHNOLOGY AND LIST ITS KEY COMPONENTS

8 MARKS

(ii) EXPLAIN THE CONCEPT OF AGRICULTURAL INNOVATION AND ITS ROLE IN AGRICULTURAL DEVELOPMENT.

8 MARKS

(iii) WHAT ARE THE ADVANTAGES OF USING GENETICALLY MODIFIED CROPS IN AGRICULTURE?

4 MARKS

(20 MARKS)

QUESTION 2

(i) WHAT IS INTEGRATED PEST MANAGEMENT (IPM) AND WHY IS IT IMPORTANT IN MODERN AGRICULTURE?

6 MARKS

(ii) WHAT IS THE POTENTIAL RISK ASSOCIATED WITH THE OVERUSE OF CHEMICAL IN CROP PRODUCTION

4 MARKS

(iii) EXPLAIN THE CONCEPT OF CONSERVATION TILLAGE AND DESCRIBE ITS BENEFITS IN AGRICULTURE?

6 MARKS

(iv) WHAT ARE THE POTENTIAL DISADVANTAGES OF CONVENTIONAL TILLAGE?

4 MARKS

(20 MARKS)

QUESTION 3

(i) WHAT IS PRECISION LIVESTOCK FARMING AND HOW DOES IT ENHANCE LIVESTOCK PRODUCTION?

6 MARKS

(ii) DESCRIBE THE ROLE OF AUTOMATED MILKING SYSTEM (AMS) IN DAIRY FARMING AND GIVE TWO ADVANTAGES.

4 MARKS

(iii) HOW IS BLOCKCHAIN TECHNOLOGY BEING USED IN LIVESTOCK SUPPLY CHAINS, AND WHAT BENEFITS DOES IT OFFER?

6 MARKS

(iv) WHAT ARE THE POTENTIAL APPLICATIONS OF DRONES IN LIVESTOCK MANAGEMENT?

4 MARKS

(20 MARKS)

QUESTION 4

(i) EXPLAIN HOW THE FOURTH INDUSTRIAL REVOLUTION (4IR) RELATES TO AGRICULTURE.

10 MARKS

(ii) DESCRIBE THE POTENTIAL CHALLENGES OF IMPLEMENTING 4IR IN AGRICULTURE.

5 MARKS

(iii) DESCRIBE WHAT IS HAPPENING IN THE PICTURE BELOW. WHAT ARE THE ADVANTAGES AND DISADVANTAGES



**5 MARKS
(20 MARKS)**

QUESTION 5



(i) DESCRIBE THE SMART TECHNOLOGIES THAT YOU SEE IN THE PICTURE. WHAT ARE THE ADVANTAGES OF THESE TECHNOLOGIES?

12 MARKS

(ii) WHAT ROLE DOES RENEWABLE ENERGY PLAY IN PROMOTING SUSTAINABLE FARMING AND HOW CAN IT BE ADOPTED?

8 MARKS

(20 MARKS)
