

CHRISTIAN SOCIAL SERVICES COMMISSION- (CSSC)  
NORTHERN ZONE JOINT EXAMINATION SYNDICATE(NZJES)



FORM TWO PRE-NATIONAL EXAMINATION AUGUST 2024

AGRICULTURAL SCIENCE

MARKING SCHEME

**SECTION A (15 Marks)**

1. Multiple-choice (10marks)

I	ii	iii	iv	V	vi	Vii	viii	ix	x
C	A	B	D	A	D	C	D	A	B

2. Matching items (5marks)

List A	I	Ii	Iii	iv	v
List B	B	D	C	E	A

**SECTION B (70MARKS)**

3. (a) According to life span

- i. **Annual crops** are those crops which have life span not exceeding one year.  
Examples of annual crops are paddy, maize and common beans.
- ii. **Biennials crops** are those crops which have lifespan of more than one year but not exceeding two years. An example of biennial crops is a cowpea, carrot, leek, cabbage and onions.
- iii. **Perennial crops** are those crops which have life span exceeding two years.  
Examples of perennial crops are banana, coffee and tea. (@02marks=06marks)

(b) According to mode of propagation

- i. **Sexually propagated plants** are those which are developed from seeds.  
Examples of sexually propagated crop plants are palm tree, maize and pawpaw.
- ii. **Asexually propagated crop plants** are those crop plants developed using other plant parts than seeds or spores. Example of asexually propagated plants are cassava, sweet potato, banana and sugar cane. (@02 marks=04 marks)

4.
  - a) Importance of Farm mechanization
    - i. Expansion of the production area
    - ii. Transportation e.g Tractors, lorries, motor cycles
    - iii. Timeliness of farm operations
    - iv. Increase efficiency **any five points (5 marks)**
    - v. Less dependence on animal power
    - vi. Relief to the farmer.
  - b) Five factors that influence soil formation
    - i. Climate of an area
    - ii. Nature of parent materials
    - iii. Living organisms
    - iv. Topography/ Relief of an area
    - v. Time **any five points (5 marks)**
5. (i) Mulching This is the placing of organic or inorganic material on soil surface around the crop base. It is important in maintaining soil fertility by improve soil humus content on decomposition, soil water infiltration, soil structure and soil temperature
  - (ii) Crop rotation. This is growing of crops belonging to different families on the same portion of land at different time following orderly sequence. It is important in maintaining soil fertility by improving soil structure, control weeds and parasites and break cycle of certain disease and improve fertility when legume are included
  - (iii) Contour farming. This involves create a series of relative flat horizontal portion alternating with vertical portion, very similar to flight or stairs. It important in maintain soil fertility by controlling erosion and permit cropping on land that would have otherwise remain useless for cropping.
  - (iv) Cover cropping. This involve establishment of a crop that spread out over the empty spaces between rows of plant specifically to cover the soil surface of particular space. It is important to maintain soil fertility by protect the soil from evaporation and therefore improve the infiltration of water into the soil
  - (v) Green manuring. This is made by growing a crop on a piece of land and then incorporated into the soil at flowering stage while still green and tender. It maintaining soil fertility by improving soil nitrogen content because of high nitrogen content on green manure **(2 mark @ = 10 marks)**

6.(a) Seed dormancy refers to as inability of seed to grow into seedling **(2 marks)**

(b) Method of breaking seed dormancy

(i) Treatment of seed with immature embryos

(ii) Stratification

(iii) Destroying growth inhibitor

(iv) Scarification **(1 mark @ = 4 marks)**

(C) Importance of agriculture

i. Source of food

ii. Source of industrial raw materials

iii. Improve living standard of the farmers

iv. Provide employment

v. Source of income to the farmers **(Any 4 points =4marks)**

7 (a) i. Extensive or free-range livestock farming

ii. Iemi-intensive livestock farming

iii. Intensive livestock farming **1@=3 marks**

(b) factors to consider when selecting livestock farming systems( four factors)

i. Capital- if a farmer have high capital he/she use intensive system and if les capital semi intensive or extensive is used

ii. The type of livestock you want to raise example goat, poultry, cattle, etc

iii. A type of livestock breed you want to raise example local breed or exotic breed

iv. The number of livestock you have

v. The space available **1@Any 4 points= (4 marks)**

vi. Environmental factors like security and predators

(c) i. Mulching in paddy is not necessary because paddy is a hydrophyte plant which is grown in a soil with water logged

ii. Application of Nitrogenous fertilizer is not recommended in pigeon peas because:

Pigeons peas are leguminous crop which have rhizobium bacteria in roots for fixing atmospheric nitrogen

iii. Because maize have large seeds ,hence the good method for sowing it is row cropping. **(1@=3 marks )**

8. a) Survival mechanisms of weeds over crop plants.
- i. Weeds have ability to produce large quantities of seeds
  - ii. Weeds can remain in viable in the soil and water for a long time waiting for conducive environment
  - iii. Most weed seeds can be easily and successfully dispersed by water, wind and animals.
  - iv. Some weeds have ability to reproduce both sexually and asexually
  - v. Weeds have extensive root systems that facilitate effective nutrient absorption and water uptake
  - vi. Weeds have ability to survive even where there is limited nutrient supply
  - vii. Some weeds have short life cycle. **(Any five points 1mark@=5marks)**

(b) Five methods of increasing land value

- i. Application of manures or fertilizers to infertile soils
- ii. Drainage of swamps
- iii. Planting of trees in land where there are strong winds
- iv. Land reclamation
- v. Establishment of irrigation structures
- vi. Construction of terraces **(Any five points 1mark@=5marks)**

9.(a) Causes of annual depreciation

- i. Laps of time
- ii. Change in technology
- iii. Wear and tear
- iv. Use **(Any two points 1@=2marks)**

(b) Original cost of Harvester(C)=40,000,000/=

Salvage value(S)=15,000,000/=

Expected years(N)=10years

(i) Annual depreciation(A.D)=?

From the formula

$$A.D = \frac{C - S}{N}$$

$$(40,000,000 - 15,000,000) / 10 = 2,500,000 / = \text{ (5 Marks)}$$

(ii) Value of harvester at 2006

At 2006 number of years=2006-2000=6yrs

Since A.D=2,500,000/= Depreciation for 6yrs=2,500,000×6=15,000,000/=

Then, Value of harvester=Original cost -Total depreciation for 6yrs

$$40,000,000 - 15,000,000 = 25,000,000 / = \text{ (3marks)}$$

### SECTION C (15 marks)

10. Introduction (Meaning of crop pests) ..... ( 2 marks)

Main body (Cultural methods of pests control any six points) ..... (2marks@=12 marks)

- i. Use of clean planting materials
- ii. Timely planting
- iii. Trap cropping
- iv. Close season
- v. Crop rotation
- vi. Use of resistant crop varieties
- vii. Observing field hygiene
- viii. Destruction of alternative hosts
- ix. Timely harvesting
- x. Observing proper crop nutrition

Conclusion (1mark)