**AGRICULTURAL SCIENCE JSS 3**

**FIRST TERM**

## SCHEME OF WORK

**WEEK TOPIC**

1. REVISION OF JSS 2 WORK
2. PACKAGING IN AGRICULTURE
3. BRANDING: DEFINITION, ADVANTAGES AND DISADVANTAGES
4. PRICING OF AGRICULTURAL PRODUCE
5. ADVERTISING IN AGRICULTURE
6. MARKETING IN AGRICULTURE
7. FARM RECORDING
8. BOOK KEEPING
9. FARM ACCOUNT I
10. FARM ACCOUNT II
11. REVISION

**REFERENCE BOOKS**

1. Junior Secondary Agricultural for Nigeria School Book 3. By Anthony etal.
2. Prescribed Agricultural Science for Junior School by: S.A. Omoruyi etal.

**WEEK TWO**

**TOPIC: PACKAGING IN AGRICULTURAL**

**CONTENT**

* Meaning of Packaging
* Purpose of Packaging
* Criteria for selecting packaging materials
* Types of packaging materials

**MEANING OF PACKAGING**

Packaging is the act of wrapping or enclosing agricultural products in a suitable material that will protect them when they are being transported from farms to markets and displayed in shops for people to buy.

**PURPOSE OF PACKAGING**

1. To protect the product from being damaged when they are transported from the farm to the stores and markets.
2. To protect farm products from damage as a result of bad weather, heat and rain.
3. To protect farm products from contamination and damage by pests and disease organisms.
4. Packaging makes agricultural products easier to handle, store and more attractive in shops.
5. To prevent products from losing their value.

**EVALUATION**

1. What is packaging?
2. List five purposes of packaging.

**CRITERIA FOR SELECTING PACKAGING MATERIALS**

1. The packaging material must be suitable for the type of agricultural products.
2. Packaging material for animal products should be different from materials used for packaging plants.
3. It must be capable of preventing farm products from breakage, leakage and damage to the farm.
4. The packaging container must enclose the product in a convenient unit for handling and distributing.
5. It must be strong enough to protect the agricultural products from hazards during transportation.
6. It must be easily available and cheap.
7. It must make it easy to carry the Agricultural products in terms of weight and form.
8. It should be easy to dispose off after use.

**TYPES OF PACKAGING MATERIAL FOR AGRICULTURAL PRODUCTS**

1. Jute or Calico Sacks: For packaging dried Agricultural products such as maize, rice, cowpea, millet, sorghum, dried cocoa, beans e.t.c.
2. Plastic or Polythene bags: Used for packaging flour products such as: maize flour, cassava flour e.t.c
3. BownKrafts: Used for packaging small quantity of dried grains e.g rice, beans, maize e.t.c. displayed for sale on shop shelves
4. Cardboard Boxes and Trays: For packaging products such as eggs, pineapples, mangoes and bananas.
5. Hard Plastic Containers: They are manufactured specially for carrying vegetables.
6. Plastic Wrappers: Used for wrapping breed, for dressed chicken for sale in shops and markets.
7. Wooden Crates: For packaging fresh fruits such as tomatoes, mangoes, avocado pear e.t.c
8. Plastic Bottles: For packaging liquid such as vegetable oil, milk e.t.c.
9. Glass Bottles and Jars: For packaging liquid such as honey, palm wine, Coconut Oil, Palm Oil e.t.c.
10. Metal Drums and Cans: Metal drums are used to package large quantities of liquids vegetable Oil eg Palm Oil, Corn Oil. Metal Cans are used for packaging fish such as Sardines and Mackerels.
11. Baskets: They are made locally fromraphia, palm frond e.t.c. They are very useful in packaging fruits and vegetables.

**GENERAL EVALUATION**

1. What is Packaging?
2. List three purpose of packaging.
3. List three criteria for selecting packaging materials.
4. List five packaging materials.
5. List five items that a basket can be used to package.

**WEEKEND ASSIGNMENT**

**SECTION A**

1. Fish products are packaged with the aid of \_\_\_ (a) Basket (b) Can (c) Bottle (d) Drum
2. Which of these is not a packaging material (a) Tray (b) Jute Sack (c) Polythene

(d) Sieve

1. \_\_\_is used to store large quantity of vegetable oil for export (a) Cans (b) Plastic Bottles (c) Metal drums (d) Baskets
2. Cocoa beans is best packed in the \_\_\_ (a) Polythene bag (b) Jute bag (c) Baskets

(d) Cans

1. The best packaging material for bread is \_\_\_\_ (a) Wooden Crates (b) Plastic wrappers (c) Crates (d) Jute bag

**THEORY**

1. What is packaging?
2. (a) List five packaging materials.

(b) List five reasons for packaging.

**WEEK THREE**

**TOPIC: BRANDING**

**CONTENT**

* Definition of Branding
* Advantages of Branding
* Disadvantages of Branding

**DEFINITION OF BRANDING**

This is the activity of giving a particular name and lineage to goods and services, so that people will be attracted to them and want to buy them.

**ADVANTAGES OF BRANDING**

1. It helps in easy identification of agricultural product.
2. It helps the buyer to easily remember what they want to buy.
3. It adds a measure of prestige to the product.
4. It helps in maintenance of quality.
5. The producer may enjoy some forms of monopoly when goods are branded.
6. It prevents product adulteration.
7. It helps to increase sales (turn over) of farm produce.

**DISADVANTAGES OF BRANDING**

1. It increases the cost of production.
2. Some products are difficult to brand e.g vegetables and fruits.
3. It causes confusion among the consumers.
4. Producers do find it difficult to maintain consistent quality.

**GENERAL EVALUATION**

1. What is branding?
2. List three advantages of branding.
3. List three disadvantages of branding.
4. List five materials used in packaging.
5. List two purposes of advertisement.

**WEEKEND ASSIGNMENT**

1. The following are disadvantages of branding except(a) It increases the cost of production (b) Some products are difficult to brand e.g vegetables and fruits (c) It causes confusion among the consumers (d) it increases sales
2. Preserved fishes are best kept in \_\_\_\_\_\_. (a) metal drums (b) baskets (c) cans

(d) bottles

1. There is only one seller in \_\_\_\_\_\_. (a) monopoly (b) duopoly (c) oligopoly

(d) monopsony

1. Addition of substandard constituent to an agricultural productis called \_\_\_\_\_\_.

(a) robbery (b) theft(c) adulteration(d) pollution

1. \_\_\_\_\_\_ helps in the easy identification of farm produce. (a) branding (b) marketing

(c) sales (d) input

**THEORY**

1. What is branding?
2. (a) List three advantage of branding

(b) List two disadvantage of branding

**WEEK FOUR**

**TOPIC: PRICING OF AGRICULTURAL PRODUCTS**

**CONTENT**

* Meaning of price
* Meaning of Market
* The concept of demand and supply
* Factors that determine Pricing of Agricultural Produce.

**MEANING OF PRICE**

The price of an agricultural product is the amount of money which a product is to be paid by people who desire to buy the products.

**MEANING OF MARKET**

A market is described as the specific place where producers and buyers meet for exchange of materials. The price of any agricultural product depends on the environment which is called.

**EVALUATION**

1. What is Price?
2. What is a Market?

**THE CONCEPT OF SUPPLY AND DEMAND**

Supply: The supply of a product is the total quantity of the product that producers offer for sale in the market.

Demand: The demand of a product is the total quantity of the product desired by all traders and customers for the product.

**DETERMINATION OF PRICE BY SUPPLY AND DEMAND**

If the supply of an agricultural product is low, which means there is a shortage of the product in the market, many people will want the product and some traders and customers will be prepared to pay extra money to buy the product. In this situation, the price of the product will be high.

When the supply of an agricultural product is high, it means there is a large quantity of the product in the market; some producers will be willing to sell for a low price, to attract buyers. The price of the product will therefore be low.

**EVALUATION**

1. Define demand and supply.
2. Explain how demand and supply affects prices.

**FACTORS THAT DETERMINE PRICING OF AGRICULTURAL PRODUCE**

1. Cost of production: the production costs are put into consideration to fix the selling price of any agricultural produce.
2. Quantity of Produce: if the farmer produces a large quantity of produce to make the market saturated the selling price will fall, vice versa.
3. Quality of produce: the demand for high quality produce is high, therefore the selling price of such produce is also high.
4. Demand and supply.
5. Market Places: the farther the distance to the site of production, the higher the selling price. Also farm produce sells more in cities than villages where the demand is low.
6. Seasons: The prices of crops are low at their seasons of production and high when their season is gone.

**GENERAL EVALUATION**

1. What is demand?
2. What is supply?
3. What is a market?
4. Explain how demand affects pricing.
5. List 5 factors that determine Pricing.

**WEEKEND ASSIGNMENT**

1. The amount of money which producer asked to be paid for his product is \_\_\_

(a) cast (b) value (c) Price (d) money

1. A place where exchange of good and services for money takes place is called \_\_\_
2. Restaurant (b) school (c) public toilet (d) market
3. The quantity of goods which the producer offer for sale in the market is the \_\_\_
4. Supply (b) demand (c) invoice (d) sales
5. When the supply is high, the selling price \_\_\_.

(a) falls(b) increases (c) is constant(d) appreciates

1. When the demand is more than what is supplied, the price \_\_\_.

(a) falls (b) increases (c) is constant(d) depreciated

**THEORY**

1. (a) What is a market?
2. Define demand and supply.
3. Explain how the demand and supply affects prices.

**WEEK FIVE**

**TOPIC: ADVERTISING AGRICULTURAL PRODUCE**

**CONTENT**

* Meaning of Advertisement
* Purpose of Advertisement
* Method of Advertisement

**THE MEANING OF ADVERTISEMENT**

This is the act of making people to know about agricultural products that are being produced and marketed by individuals and organisations.

**PURPOSE OF ADVERTISING AGRICULTURAL PRODUCTS**

1. To attract people to buy the product.
2. To create awareness about the farm produce available.
3. To make customers develop interest in the farm produce.
4. To increase the income of the agricultural product.

**METHODS OF ADVERTISING AGRICULTURAL PRODUCTS**

Agricultural products are advertised through the following means:

1. Local newspaper.
2. Mass media such as radio and Television.
3. The bill boards.
4. Use of handbill, pamphlets and bulletins.
5. Through the social media such as Facebook, instagram etc.
6. Through mobile phones.

**Information provided to advertise agricultural products are:**

1. The common trade name of the product.
2. The high qualities of the product.
3. Where the product can easily be obtained.

**GENERAL EVALUATION**

1. What is a market?
2. List two examples of local markets in Lagos.
3. Define Advertisement.
4. List three purposes of advertisement.
5. List four means of advertising agricultural products to the consumers.

**WEEKEND ASSIGNMENT**

1. Text messages can be used to advertise on \_\_\_. (a) radio (b) television (c) mobile phones(d) bill boards
2. Facebook is a/an \_\_\_. (a) handset (b) newspaper (c) handbill (d) social media
3. Advertisement is done to create \_\_\_ about a new Agricultural produce.

(a) income(b) awareness (c) service (d) education

1. Plastic bottles are used in storing \_\_\_.

(a) oil (b) groundnut (c) millet (d) cocoa beans

1. Liquids of large quantities are packaged using \_\_\_.

(a) cans(b) bottles (c) sacks (d) metal drums

**THEORY**

1. What is advertisement?
2. (a) List three purposes of advertisement

(b) List three means of advertisement

**WEEK SIX**

**TOPIC: MARKETING IN AGRICULTURE**

**CONTENT**

* Meaning of market and marketing
* Agricultural marketing activities
* Types of marketing for Agricultural Produce

**MEANING OF MARKET AND MARKETING**

A market is a place where farmers exchange agricultural produce such as yams for money.

Agricultural marketing involves all activities from gathering of agricultural produce from farms to getting them to the customers.

**AGRICULTURAL MARKETING ACTIVITIES**

This involves the activities such as assembling, grading, processing, packaging, storage, transportation and distribution.

1. Assembling: this involves collection of products from various locations in order to make them available in large quantity for the buyers.
2. Grading: Products are sort into grads depending on their shape, size, quality, purity, flavor etc. this is done to ensure high standards of agricultural products.
3. Processing: Processing is the conversion of farm product into a better form to increase the utility and value. E.g orange can be processed to orange juice.
4. Packaging: This involves the placing of farm products in crates, boxes or egg containers. This makes transportation easy to carry out.
5. Storage: Farm produce are preserved and kept to make it available to consumers most of the time.
6. Transportation: It is necessary to move agricultural produce from the farm to the market so that the customers can find them to buy.
7. Distribution: Traders, wholesalers and retailers are involved in the distribution of farm produce to their customers.

**EVALUATION**

1. What is marketing?
2. List and explain five marketing activities.

**TYPES OF MARKETS FOR AGRICULTURAL PRODUCE**

1. Perfect competition market: In this type of market, there are many buyers and sellers.
2. Imperfect competition: The decision of one or more sellers or buyers affects the price of the commodity. The forms of imperfect market are:
3. Monopoly: When there is one seller and more buyers.
4. Duopoly: When there are two sellers.
5. Oligopoly: Where there is a small numbers of sellers.
6. Monopsony: When there is only one buyer.
7. Duopsony: When there are two buyers.
8. Oligopsony: When thereare small number of buyer.

**GENERAL EVALUATION**

1. What is a market?
2. What is marketing?
3. List five Agricultural marketing activities
4. List two types of market
5. Explain, grading, processing, packaging and storage.

**WEEKEND ASSIGNMENT**

1. A place where buyers and sellers meet for exchange of goods is called \_\_\_\_\_.

(a) field (b) shops (c) market (d) hospital

1. The act of placing farm products in crates is called \_\_\_\_\_. (a) packaging (b) storage

(c) parking (d) distribution

1. A situation where there is only one buyer is called \_\_\_\_\_. (a) duopoly (b) monopoly

(c) oligopoly (d) joint

1. The quantity of goods which the producers offer for sale in the market is \_\_\_\_\_

(a) supply (b) demand (c) scale (d) Invoice

1. Duopoly involves \_\_\_\_\_\_\_ sellers (a) one (b) three (c) four (d) two

**THEORY**

1. List and explain two marketing activities.
2. Define the following: (a) Monopoly (b) Duopoly (c) Oligopoly (d) Monopsony

**WEEK SEVEN**

**TOPIC: FARM RECORDS**

**CONTENT**

* Meaning of Farm Records
* Purpose of Keeping Farm Records
* Types of Farm Records

**MEANING OF FARM RECORD**

Farm record is the documentation of various events which happens on a farm.

Purpose of Keeping Record

1. It is useful for future planning
2. It can be used as part of collateral for loan
3. It helps the farmer to know whether he is making a profit or loss
4. It helps the farmer to know the state of things on the farm
5. It helps to detect fraudulent acts
6. It help in farm management decision taking.

**EVALUATION**

1. What is farm record?
2. List two purpose of keeping farm records

**TYPES OF FARM RECORDS**

The types of farm records include; farm dairy, farm inventory, input records, production records, sales record, and consumption records e.t.c.

1. **The Farm Diary**

This contains the record of day-to-day events on the farm. This includes the dates of planting, germination, flowering, the amount of farm input such as pesticides, fertilizer and so on, the date of birth of the younganimals etc.

1. **The Farm Inventory**

This is the record of all the property and resources in the farm which are owned by the farmer, these includes the building, livestock, machines, equipment and so on.

1. **Input Records**

This is the record of all inputs used for production in the farm during the year; these includes the cost of seeds, cost of feeds, cost of drugs, cost of tools, cost of equipment e.t.c.

1. **Production Records**

This is the record of all items produced on the farm. Such items include the crops and livestock.

1. **Consumption Records**

This is the record of all farm products consumed by the owner of the farm.

1. **Sales Records**

This is the record of the sales on the farm; it enables the farmer to know whether he is making profit or loss.

**GENERAL EVALUATION**

1. What is advertisement?
2. List three purpose of advertisement
3. List three purpose of keeping farm records
4. List five types of farm records
5. State the uses of the following farm records:
6. Inventory (ii) Farm diary (iii) Input (iv) Production record (v) Sales record

**WEEKEND ASSIGNMENT**

1. The record of all assets of the farm are kept in \_\_\_\_\_(a) Register (b) Diary (c) Note (d) Inventory
2. Food Items used by the farm owners are recorded in \_\_\_ record (a) Sales (b) Consumption (c) Inventory (d) Cash
3. The documentation of farm events is called \_\_\_ (a) Revenue (b) diaries (c) Inventory (d) farm record
4. Day to day events on a farm are written in \_\_\_ (a) Sales record (b) Farm dairy (c) Production record (d) Input record
5. Materials used on the farm are recorded in the \_\_\_ (a) Output record (b) Input record (c) Sale record (d) Production

**THEORY**

1. What is inventory record?
2. List five advantages of keeping farm records.

**WEEK EIGHT**

**TOPIC: BOOK KEEPING**

**CONTENT**

* Meaning of Book Keeping
* Source Document
* Journals

**BOOK KEEPING**

This is the act of recording business transaction in a systematic manner so that the books will show at any time the exact state of their owners affairs.

**SOURCE DOCUMENT**

They are those documents that form the source of book keeping records. They are documents of initial transactions from which book keeping records are made or kept.

**EVALUATION**

1. What is Book Keeping?
2. What are source document?

**TYPES OF SOURCE DOCUMENTS**

1. Sales Invoice: These are out going invoice.
2. Purchase Invoice: These are incoming invoice issued by the creditors or suppliers.
3. Receipt: This is evidence of cash payment.
4. Voucher: This is the evidence of payment or receipt with a brief detail in respect of the transaction.
5. Credit note: This is sent to inform the receiver that this account is credited as a result of an overcharge.
6. Debit note: It shows that the receiver’s account is debited as a result of undercharge e.t.c.

**JOURNALS**

These are the books of original entry, that is, where transactionare first recorded before they are transferred to the ledger. They are also called the subsidiary books or books of prime entry. They can be listed as follows,

1. Cash book/Cash account
2. Sales book / Sales day book/Sales Journal
3. Purchases book/purchases day book/Purchase journal
4. Return inward book / Sales return book / Sales return journal
5. Purchases returns book/return outward book/Return outward journal
6. General journal /Principal journal / Journal proper

**GENERAL EVALUATION**

1. What is Book Keeping?
2. What are source documents?
3. List five examples of source document.
4. What is advertisement?
5. What is packaging and list any two examples?

**WEEKEND ASIGNMENT**

1. Text messages can be used to advertise on \_\_\_\_. (a) radio (b) television (c) mobile phones (d) bill boards
2. Facebook is a/an \_\_\_\_ (a) handset (b) newspaper (c) handbill (d) social media
3. Advertisement is done to create \_\_\_\_\_ about a new Agricultural produce. (a) income (b) awareness (c) service (d) education
4. Day to day events on a farm are written in \_\_\_\_ (a) Sales record (b) Farm dairy (c) Production record (d) Input record
5. Materials used on the farm are recorded in the \_\_\_\_ (a) Output record (b) Input record (c) Sale record (d) Production

**THEORY**

1. What is book keeping?
2. List five source documents and state their uses.

**WEEK NINE**

**TOPIC: FARM ACCOUNT**

**CONTENT**

* Meaning of Farm Accounts
* Importance of Farm Account
* Types of Farm Accounts

**MEANING OF FARM ACCOUNTS**

Farm Accounts are statement of money paid out or received for goods and services in a farming business.

**IMPORTANCE OF FARM ACCOUNTS**

1. It helps to monitor the changes in prices of items bought or sold on the farm.
2. It shows the financial position of the farm.
3. It shows whether profit or loss is made.
4. It is useful in taking management decision.
5. It is useful in procurement of loans.
6. It helps to determine animal tax.

**EVALUATION**

1. What is Farm Account?
2. List five importance of Farm Account.

**TYPES OF FARM ACCOUNTS**

1. Sales Account: It shows the details of farm products sold, this includes; the types of product sold; the quantity, date sold, to whom and at what price.
2. Purchase Account: It shows the details of items purchased for use on the farm. This includes the name of input, date purchased, number of input, quantity and the cost.
3. Farm Valuation: It contains information that helps to determine the value of the farm.
4. Balance Sheet: It shows the capital or financial position of the farm at the end of the accounting period, usually a year. It is also called the Net worth.
5. Farm Income statement: It comprises all the farm receipts (sales) and expenses earned on the farm over a specific period of time.
6. Cash Analysis Account: It shows the details of income and expenditure of a farm over a period of time.
7. Profit and Loss Account: It shall be discussed next week.

**GENERAL EVALUATION**

1. What is farm account?
2. List four importance of Farm Account.
3. List five types of Farm Account.
4. State the uses of farm income statement.
5. State the uses of cash analysis account.

**WEEKEND ASSIGNMENT**

1. Farm accounts helps to monitor changes in \_\_\_

(a) activities (b) prices (c) work (d) weather

1. Farm account shows the financial \_\_\_\_\_ of a farm (a) rest (b) work (c) angle (d) position
2. Items purchased on the farm are recorded in \_\_\_ account (a) sale (b) purchase (c) income (d) expenditure
3. Day to day events on a farm are written in farm \_\_\_\_\_ (a) register (b) dairy (c) account (d) inventory
4. Farm Inventory are used for taking record of \_\_\_\_\_\_ (a) assets (b) liabilities (c) income (d) expenditure

**THEORY**

1. What is farm account?
2. State the use of the following:
3. Cash analysis account.
4. Farm income statement.

**WEEK TEN**

**TOPIC: PROFIT AND LOSS ACCOUNT**

**CONTENT**

* Meaning of profit and loss account
* Importance of profit and lost account
* Principles of profit and loss account
* Calculations on profit and loss account

**MEANING OF PROFIT AND LOSS ACCOUNT**

This is the type of account prepared at the end of a business period, usually a year, by the farmer with the purpose of knowing whether the business is making a profit or loss.

**IMPORTANCE OF PROFIT AND LOSS ACCOUNT**

1. It helps to know whether the farm is making a profit or loss
2. It helps to determine the overall performance of the farm at the end of the accounting period.
3. It aids the future planning of the farm for better results.

**EVALUATION**

1. What is profit and loss account?
2. List three importance of profit and loss account.

**PRINCIPLES OF PROFIT AND LOSS ACCOUNT**

1. Expenses and purchases are recorded on the left hand side (debits side) and all receipts and sales are recorded on the right hand side.
2. Closing valuation is put on the right side while the opening valuation is put on the left.
3. Item consumed are recorded on the credit side.

Calculations on profit and loss account Example:

Prepare a profit loss account for Segun farms for the year ended 31/12/94

1. Cost of feed = 500
2. Cost of drugs = 200
3. Sales of eggs = 2000
4. Eggs for domestic = 200
5. Loss due to mortality = 300
6. Value of stock left = 600
7. Farm wages = 400
8. Sales of spent layers = 1000
9. Transportation cost = 300
10. Depreciation = 200
11. Net profit = 1600

**Solution**

**Debit Credit**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **S/N** | **PARTICULARS** | **N** |  | **S/N** | **PARTICULARS** | **N** |
| 1. | Cost of feed | 500 | 3. | Sales of eggs | 2000 |
| 2. | Cost of drugs | 200 | 4. | Eggs for domestic | 200 |
| 5. | Loss due to mortality | 300 | 6. | Value of stock left | 600 |
| 7. | Farm wages | 400 | 8. | Sales of spent layers | 1000 |
| 9. | Transportation cost | 300 |  | **Total** | **3,800** |
| 10. | Depreciation | 200 |  |  |  |
| 11. | Electricity bill | 300 |  |  |  |
|  | **Total** | **2200** |  |  |  |
| 12. | Net profit | 1,600 |  |  |  |
|  | **Grand Total** | **3,800** |  |  |  |

**GENERAL EVALUATION**

1. What is farm account?
2. State the use of cash analysis account.
3. State the use of farm income statement.
4. What is profit and loss account?
5. State the principle of profit and loss account.

**WEEKEND ASSIGNMENT**

1. Closing valuation is written on the \_\_\_ hand side (a) right (b) left (c) centre (d) middle
2. Items consumed are recorded on the \_\_\_ hand side

(a) credit (b) debit (c) upper (d) lower

1. Opening valuation is written on the \_\_\_ (a) debit (b) credit (c) centre (d) down
2. The place where buyers and sellers meet for the exchange of goods is \_\_\_ (a) field (b) shop (c) hospital (d) market
3. Duopoly involves \_\_\_ sellers (a) one (b) two (c) three (d) four

**THEORY**

1. What is profit and loss account?
2. List three principles of keeping profit and loss account.