

13. AGRICULTURE (CODE NO. 068)

CLASS XI (THEORY) (2013-14)

One Theory Paper

70 Marks

Unit wise Weightage

Time: 3 Hours

SECTION	UNITS	NO. OF PERIODS	MARKS
I Part A	Agriculture and Crop Production		
	<ul style="list-style-type: none"> ● Unit: I Scope and Importance ● Unit: II Physical Environment ● Unit: III Agriculture Economics 	5 40 40	30
Part B	Genetics, Plant Breeding and Microbiology Unit: IV Genetics, Plant Breeding and Microbiology	30	15
II	Livestock Production		
	<ul style="list-style-type: none"> ● Unit V: Scope and Importance ● Unit VI; Care and Management ● Unit VII - Bio-waste Management and Government Schemes 	10 35 10	25
III	Practical	50	30
	TOTAL	220	100

SECTION - I

PART A - AGRICULTURE AND CROP PRODUCTION: Total Periods -85

Unit I: Scope and Importance: 05 Periods

Definition of agriculture, its branches and scope in the national economy and employment

Unit II: Physical Environment: 40 Periods

1. Climate and Weather, elements of Weather: Rainfall, Temperature, Humidity, Wind, Sunshine, Climate Change and Global warming,
2. Soil, Soil texture and structure and its types, distribution and area.
3. Soil erosion and Soil conservation. Reclamation of problematic soils acidic and alkali.
4. Tillage definition and types. Concept of conservation and tillage.

Unit III: Agriculture Economics and Crop Production 40 Periods

1. Agricultural economics, Cooperative system in Agriculture, Crop Insurance. Kissan Credit Cards. Marketing of Agricultural Products (supply chain, retailing, wholesale), haats.
2. Package of practices like important varieties, seed rate, sowing time, inter-cultural operations, yield and marketing and Rice, Wheat, Maize, Mustard, Sunflower, Soybean, Groundnut, Black gram, Red gram, Pea, Jute, Sugarcane, Sorghum, Pearl millet and Finger millet.

3. Introduction, distribution and economic importance of fruit: Mango, Banana, Guava, Lime, Grape, Apple, Pomegranate. Vegetables: Potato, Tomato, Cauliflower, Cabbage, Spinach, Brinjal, Bottle gourd, Pumpkin, Cucumber. Flower- rose, Gladiolus marigold.
4. Types of seed-foundation and certified and methods of plant propagation layering and cutting, and Tissue culture.
5. Important farm implements and their maintenance

PART B - GENETICS, PLANT BREEDING AND MICROBIOLOGY 30 Periods

Unit IV: Genetics, Plant Breeding and Microbiology

1. Cell and its structure, cell division-Mitosis and Meiosis and their significance in plant growth and development,
2. Introduction to -DNA, RNA, and their differences.
3. Role of Genetics in Plant breeding, self and cross-pollinated crops, methods of breeding in field crops-introduction, selection, Hybridization, Mutation.
4. Mendel's laws of Inheritance. Illustrative depiction of the experiments, their importance in plant breeding.
5. Introduction to Algae, Fungi, Bacteria. Decomposition and Fermentation.

Section - II: Livestock Production:

Total Periods: 55

Unit V: Scope and Importance

10 Periods

- (a) Importance of livestock in Agriculture , National Economy and Nutritional security
- (b) Important animal based food products and their role in our diet.
- (c) Important animal breeds of our country (cow and buffalo). Exotic breeds of cows and their milk production and quality.

Unit VI: Care and Management

35 Periods

- (a) Principles of feeding, feeding practices; Important fodder crops; Silage and Hay preparation; Balanced ratio-definition and ingredients.
- (b) Concept of grazing and stall feeding including poultry feeding.
- (c) Systems of milking by hand and by machine. Important considerations in both these methods.
- (d) Concept of clean milk production, processing, value added products from milk, milk pasteurization, packaging and milk marketing in India. Concept of AMUL cooperative system of milk procurement and marketing.
- (e) Production of Meat, Egg , Wool/Fur.
- (f) Management of calves, bullocks, pregnant and milch animals as well as chicks and layers.
- (g) Animal body structure and functions.
- (h) System of animal health and hospital management in India.
- (i) Signs of sick animals, symptoms of common diseases in cattle and poultry, Rinderpest,

Black quarter, Foot and Mouth, Mestitusand Haemorrhagic Septicaemia, Fowl Pox and Ranikhet disease, their prevention and control.

Unit VII: Bio-Waste Management and Government Schemes

10 Periods

- (a) Utilization of animals in Bio-wastes and Biogas plant
- (b) Important government schemes for livestock production in India. Their important features and eligibility criteria.

**AGRICULTURE (CODE NO. 068)
CLASS XI (PRACTICAL) 2013-14**

One Paper

30 marks

Unit wise weightage

Time: 3 hours

SECTION		Marks	Periods
I	Part A-Agriculture and Crop Production	12	30
	Part B- Genetics, Plant Breeding and Microbiology	-	-
II	Livestock practical	08	20
	Reports of the visit	05	
	Viva voce	05	-
	Total	30	50

SECTION -I

Part A - Agriculture and Crop Production

1. Agriculture and Crop Production - Practical

- (a) Visit to a crop field. Identify different crops growing in the field and make a report.
- (b) Visit to an agro-meteorological laboratory and identify, draw and talk different equipment.
- (c) Identification of seeds of different crops.
- (d) Seed germination test.(two cereals , two pulses, two vegetables, two flowers)
- (e) Identification of different plant parts.
- (f) Identification of different farm implements used for different operations, draw and make a report.
- (g) Calculation of cost of production of wheat crop in one hectare of land area, prepare a report.
- (h) Visit to an orchard and identify different fruits and make a report.
- (i) Identification of important vegetable crops, prepare a report.
- (j) Identification of Bacteria, Fungi, and Algae, prepare a report.
- (k) Identification of important insects of different crops grown in various seasons.
- (l) Orchard layout, digging of pits and planting of sapling of any one fruit crop.
- (m) Land preparation and sowing of wheat crop seed in the bed.
- (n) Identification of important flower crops.

SECTION -II

2. Livestock - Practical

- (a) Identification of common breeds of cows, buffaloes and poultry birds.
- (b) Visit to a local dairy and poultry farms. Observe different activities.
- (c) Testing of milk fat and gravity.
- (d) Visit to a local veterinary hospital and observe the condition of a sick animal and prepare a report.
- (e) Compute ration for an animal and poultry and prepare a report.
- (f) Visit to an outlet of milk and milk production centre. Record the variety in milk based products.
- (g) Identification of different fodder crops and grasses.

3. Report on the Visits

1. The student have to prepare a report of their visit to different organizations and submit to the class teacher for the evaluation. The report must contain the student's original work and observations.
2. Prepare Herbarium of different crops and weed species. The leaves of the crops and weeds are pressed dried and mounted on the Herbarium sheet.

4. Viva Voce

Students can be asked questions based on:

- (i) Identification of objects
- (ii) Visit Report analysis.
- (iii) Experiences in their filed visits, etc.

A range of 5 to 10 questions can be asked depending on the response of the student. Evaluation $5 \times 1 = 5$ Or should be based on number of questions answered. Evaluator should stick to the time and $\frac{1}{2} \times 10 = 5$ number of questions.