## SYLLABUS FOR ENTRANCE TEST
### B. Sc. (Hons.) Ag. 4-Year Programme

### PHYSICS

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19- The Molecules of Life
20- Atomic Structure and Chemical Bonding
21- The Solid State
22- Solutions
23- Chemical Thermodynamics
24- Electro-Chemistry
25- Chemical Kinetics
26- Organic Chemistry based on Functional Groups I
27- Organic Chemistry based on Functional Groups II
28- Organic Chemistry based on Functional Groups III
29- Chemistry of Representative elements
30- Transition Metals Including Lanthanides
31- Coordination Chemistry and Organo Metallics
32- Nuclear Chemistry
33- Synthetic and Natural polymers
34- Surface Chemistry
35- Bio Molecules
36- Chemistry of Biological Process
37- Chemistry in Action

**BIOLOGY**

Unit
1. The Living World
2. Unity of Life
3. Diversity of Life
4. Organism and Environment
5. Multicellularity : Structure and Function – Plant life
7. Continuity of Life
8. Origin and Evaluation of Life
9. Application of Biology

**MATHEMATICS**

1. Sets and Binary operation
2- Complex numbers
3- Quadratic equations
4- Sequences and series
5- Statistics
6- Permutations and combinations
7- Mathematical Induction and binomial theorem
8- Linear programming
9- Exponential and logarithmic series
10- Trigonometry
11- Circles
12- Conic section
13- Matrices & Determinants
14- Vectors and three dimensional geometry
15- Differential Calculus
16- Integral Calculus
17- Definite Integral
18- Differential equations
AGRICULTURE

Unit 1
Introductory Basic Sciences

1. **Elements of Genetics and Plant Breeding.**
   (b) Linkage and crossing over. Sex-linked inheritance.
   (c) DNA discovery, model, structure and replication. Organisation of the genetic material in chromosomes, DNA & RNA.
   (d) Elaboration of Mendel's laws of inheritance. Reasons for the success of Mendel in his experiments. Absence of linkage in Mendel's experiments.

2. **Elementary Biochemistry:**
   pH, Carbohydrate, protein and vitamins.

3. **Introductory Microbiology:**
   Microbial Cell structure, Micro-organism-Algae Bacteria Fungi, Actinomycetes and viruses; Fermentation, organic, matter decompositions.

Unit 2
Livestock Production

1. **Introduction**
   (a) Importance of Livestock
   (b) Important breeds and distribution of cows, buffaloes and poultry.

2. **Care and Management:**
   (a) Cattle housing.
   (b) Management of calves, bullocks, pregnant and milch animals and poultry.

3. **Feeds and Feeding Practices**
   (a) Balanced ration.

4. **Common Diseases:**
   (a) Signs of sick animal
   (b) Symptoms of common diseases e.g. Rinderpest, Block Quarter, Foot and mouth and Haemorrhagic Septicanemia. New castle disease of poultry, their prevention and control.

5. **Artificial Insemination** (a) Importance (b) Techniques

Unit 3
Crop Production

1. **Introduction**
   (a) Agriculture and its importance in national economy.
   (b) Different branches of agriculture and crop production.

2. **Soil and Soil Fertility:**
   (a) Importance of Soil and Soil types.
   (b) Soil pH, soil structure, soil organisms.
   (c) Elements necessary for plant growth.

3. **Tillage and Farm Equipments:**
   (a) Objectives, tillth, minimum tillage.
4. **Farm Management:**
   (a) Object
   (b) Types of farming (co-operative farming, joint farming, intensive farming, Extensive farming, mixed farming and Dry farming etc.).

5. **Manures and Fertilizers:**
   (a) Classification (organic and inorganic).
   (b) Characteristics, uses and application of different nitrogenous, Phosphatic and potassic fertilizers.

6. **Irrigation and Drainage**
   (a) Importance of Irrigation and Drainage.
   (b) Sources of Irrigation water (rain, canal, tanks, rivers, wells, tube wells, etc.).
   (c) Common water lifts.
   (d) Methods of irrigation and drainage.

7. **Weed control**
   (a) Principles of weed control.
   (b) Methods of weed control (Mechanical, Chemical and Biological).

8. **Crops**:
   (a) Economic classification (Cereals, pulses, oil-seeds, fodder, fibre crops, commercial crops).
   (b) Quality of good seed, technique of quality seed production in general.
   (c) Seed bed preparation, improved varieties, method of sowing, seed-rate, method and time of fertilizer application irrigation, interculture and weed control, common pest and diseases and their control, harvesting threshing and storage of paddy, wheat, maize, sorghum, pearl millet, gram, barseem, mustard, cotton, sugarcane, Jute, potato and tobacco.

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**Unit 4**

**Horticulture**

1. **Introduction**:
   (a) Importance
   (b) Planting-systems, training, pruning intercropping, wind-break, protection from frost sunburn.
   (c) Propagation-seed cutting, budding layering gootee, grafting.
   (d) Cultivation-Mango-Papaya, Banana Guava and Citrus.

2. **Vegetable Gardenings**
   (a) Kitchen gardening.
   (b) Cultivation of Radish, Carrot, Cauliflower, Onion, Brinjal, Tomato and potato.
   (c) Curcurbits and leafy Vegetables.

3. **Ornamental Gardening**:
   (a) Common Ornamental and Flowering Plants.

4. **Fruit and Vegetable Preservation**:
   (a) Preservation of fruits and vegetables
   (i) General principals and methods of fruits and vegetables preservation-processing by heat, preservation by antiseptic, drying, preservation by fermentation and exclusion of air, dehydration and packing.
   (ii) Preparation of jellies, jams and tomato ketchup.

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**Unit 5**

**Agriculture Business, Planning and Management**

(i) Inventory of farms resources.
(ii) Identifying farms family assets and liabilities.
(iii) Maintenance of farm-record and accounts.
Syllabus for Community Science Aptitude Test

B.Sc. (Hons.) Community Science 4-Year Programme

Part I: General Aptitude in Community Science:
Classification and functions of foods; Nutrients and their sources; Balanced diet; Methods of cooking; Meal planning; Food preservation; Principles of human growth and development; Physical, motor and social development from birth to adolescence; Types and importance of family; Classification of fibres; Methods of fabric manufacturing; Factors affecting selection of clothes; Cleansing and finishing agents for care of clothes; Housing and household Equipments; Family Finance and Consumer Education; Work Simplification: time and energy management; General awareness of Government schemes.
It will be of 40 marks.

Part II: General Science:
The syllabus will be as per Board of School Education Haryana, Bhiwani of 10th standard. Chemical reactions and equations; Acids, bases and salts; Metals and non-metals; Carbon and its compounds; Periodic classification of elements; Life processes, control and coordination; How do organisms reproduce; Heredity and evolution; Light- Reflection and refraction: Human eye and colourful world; Electricity, magnetic effects of electric current; Source of energy; our environment, management of natural resources.
It will be of 60 marks.
Syllabus for Agriculture Aptitude Test
B.Sc. (Hons.) Agri. 6-Year (2+4) Programme

Part I: General Aptitude in Agriculture:
Knowledge of candidates in vernacular language about the land measurements, cultivation of various rabi and kharif field crops, fruits and vegetables crops, Classifications of crops, manures and fertilizers, farm hand tools, implements and farm machinery, weeds, irrigation, seeds, rural institutes and programmes, Livestock Production and Management, general agriculture and allied activities. It will be of 60 marks.

Part II: General Science:
The syllabus will be as per Board of School Education Haryana, Bhiwani of 10th standard. Chemical Reactions and Equations, Acids, Bases and salts, Metals and non-Metals, Carbon and its Compounds, Periodic Classification of elements, Life Processes, Control and Coordination, How do Organisms Reproduce, Heredity and Evolution, Light – Reflection and Refraction, Human Eye and Colourful World, Electricity, Magnetic Effects of Electric Current, Source of Energy, Our Environment, Management of Natural Resources. It will be of 40 marks.