

SYLLABUS FOR ENTRANCE TEST

B. Sc. (Hons.) Ag. 4-Year Programme/ B.Sc. Agri. Business Management/B.Tech. Biotechnology/ Bachelor of Fisheries Science/B.Sc. (Hons.) Physical Sciences/ B.Sc (Hons.) Life Sciences.

(The subject combination for the Entrance Test will be as per Prospectus)

Physics

1. Introduction and Measurement
2. Description of Motion in one Dimension
3. Description of Motion in Two Dimensions
4. Laws of Motion
5. Work Energy and Power
6. Rotational Motion
7. Gravitation
8. Properties of Matter
9. Heat and Thermodynamics
10. Oscillations
11. Waves
12. Electrostatics
13. Current Electricity
14. Magnetic Effect of Currents
15. Magnetism
16. Electromagnetic Induction and Alternating Currents
17. Electromagnetic Waves (Quantitative Treatment)
18. Wave Optics
19. Ray Optics and Optical Instruments
20. Electrons and Photons
21. Atoms and Nuclei
22. Solids and Semiconductor Devices

Chemistry

1. Structure of Atom, Classification of Elements and Periodicity in Properties
2. Some Basic Concepts of Chemistry
3. Electrochemistry
4. Chemical Kinetics
5. Chemical Bonding and Molecular Structure
6. d -and f -Block Elements
7. Coordination Compounds
8. Haloalkanes and Haloarenes
9. Redox Reactions
10. Alcohols, Phenols and Ethers

11. Carbonyl compounds and its derivatives
12. Amines
13. Hydrocarbons
14. Solutions
15. Chemical Thermodynamics and Chemical equilibrium
16. Organic Chemistry: Some basic Principles and Techniques
17. Biomolecules

Biology

1. The Living World
2. Biological Classification
3. Plant Kingdom
4. Animal Kingdom
5. Morphology of Flowering Plants
6. Anatomy of Flowering Plants
7. Structural Organisation in Animals
8. Cell-The Unit of Life
9. Biomolecules
10. Cell Cycle and Cell Division
11. Photosynthesis in Higher Plants
12. Respiration in Plants
13. Plant - Growth and Development
14. Breathing and Exchange of Gases
15. Body Fluids and Circulation
16. Excretory Products and their Elimination
17. Locomotion and Movement
18. Neural Control and Coordination
19. Chemical Coordination and Integration
20. Sexual Reproduction in Flowering Plants
21. Human Reproduction
22. Reproductive Health
23. Principles of Inheritance and Variation
24. Molecular Basis of Inheritance
25. Evolution
26. Human Health and Diseases
27. Microbes in Human Welfare
28. Biotechnology - Principles and Processes
29. Biotechnology and its Applications
30. Organisms and Populations
31. Ecosystem
32. Biodiversity and its Conservation

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. Applications of derivatives
10. Trigonometric functions and inverse
11. Conic section
12. Matrices & Determinants
13. Vectors and three dimensional geometry
14. Integral Calculus and Applications
15. Limit, Continuity and Differentiability
16. Differential equations
17. Probability
18. Relation and Functions
19. Mathematics reasoning
20. Linear inequalities
21. Straight lines

AGRICULTURE

Unit 1 Introductory Basic Sciences

1. Elements of Genetics and Plant Breeding.

(a) Definitions of Genetics and Plant Breeding. Objectives and Importance of Plant Breeding and Genetics. Cell and its structure. Cell division and meiosis and their significance.

Mode of pollination and flower structure.

(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, Protozoa, Industrial Production (Fermentation), Bacteria, Fungi, Microbes in Human welfare, Organic matter decompositions, Viruses, Lichens, Sewage Treatment, Energy Generation, Bio-control Agent, Biofertilizer, Single Cell protein, Nutrient Cycling, Food Processing

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 Septicemia. Newcastle disease of poultry, their prevention and control.

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

1. Introduction

Unit 3 Crop Production

(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, tilth, minimum tillage.

(b) Kinds of tillage; preparatory, Interculture, weeding, harrowing and earthing.

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.

Unit 4 Horticulture

1. Introduction: (a) Importance

(a) Planting-systems, training, pruning intercropping, wind-break, protection from frost sunburn.

(b) Propagation-seed cutting, budding layering gootee, grafting.

(c) Cultivation-Mango-Papaya, Banana Guava and Citrus.

2. Vegetable Gardenings (a) Kitchen gardening.

(b) Cultivation of Radish, Carrot, Cauli-Flower, 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 ke

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 of Entrance Test for B.Sc. (Hons.) Community Science Programme

Part I: General Aptitude in Community Science: Classification and functions of foods; Nutrients and their sources; Balanced diet; Meal planning; Principles and factors affecting meal planning for individual and special needs; Food preservation: Reasons for food spoilage, advantages and methods of food preservation; Principles of human growth and development; Immunization and its chart for protection from preventable diseases; Physical, social and emotional development during adolescence; Types and importance of family; Factors affecting selection of clothes; Principles and precautions for stain removal and washing of clothes; Cleansing agents for care of clothes; Storage and care of clothes; Housing and household equipments; Work Simplification: time and energy management. Family finance and consumer education; Rights and responsibilities of consumers; Family resources: types and meaning, steps in management and decision making.

It will be of 40 marks.

Part II: General Science: The syllabus will be as per Haryana Board of School Education, Bhiwani of 10th standard. Chemical reactions and equations; Acids, bases and salts; Metals and non-metals; Carbon and its compounds; Life processes, control and coordination; How do organisms reproduce; Heredity; Light- Reflection and refraction; Human eye and colourful world; Electricity; Magnetic effects of electric current; Our environment.

It will be of 60 marks.

Syllabus for Agriculture Aptitude Test B.Sc. (Hons.) Agri. 2+4 Year Programme

Syllabus of Agriculture Aptitude Test for B.Sc.(Hons.) Agri. 2+4 year programme is the NCERT/SCERT syllabus of matriculation of the subjects Hindi, English, Mathematics, Science and Social Science + Agriculture.