

5.(अ) फसल उत्पादन एवं उद्यान शास्त्र

5. (A) CROP PRODUCTION AND HORTICULTURE (AG.-2)

1. (i) Introduction and activities of agriculture and crop production, (ii) Importance of crop production in National Economy (iii) Different Branches of Farming and their importance.
2. **Soil and Soil Fertility :** (i) Soil and its constituents (ii) Physical properties of Soil-Soil texture and Structure porespace, specific gravity, plasticity, cohesion and soil temperature (iii) Formation of soil-classification of soil in M.P. and their characteristics (iv) Soil corrosion its kind, their causes and control, measures of soil conservation (v) Soil acidity and alkalinity and their reclamation soil-pH.
3. **Tillage:** (i) Object of tillage, tillage operations, ploughing, levelling, harrowing, intercultivation (ii) Tillage implements, country plough improved ploughs, harrows and cultivators, threshers, winnowers and seed drills, tractor driven implements.
4. **Manures and Fertilizer** (i) Essential element for plant growth (ii) Description and uses of organic manures. F.Y.M. Compost green manures (iii) Different Nitrogenous, Phosphate and potash Fertilizers, properties and uses.
5. **Production of crops:** (i) Classification of crops according to seasons and economic classification (ii) Cultivation of Kharif Crops- Jowar, Maize, Groundnut, Cotton, Paddy, Soybean, Arhar, Urad, Moong (iii) Rabi crops-Wheat, Linseed, Mustard, Sugarcane, Gram, Barely under following heads 1. Preparation of land 2. sowing operation 3. Seed rate per hectare 4. Manures and fertilizer 5. irrigation 6. Interculture and weeding 7. Improved varieties 8. Yield per Hectare 9. Disease: pests and their control.
6. **Irrigation land Drainage:** (i) object of irrigation and drainage (ii) sources of irrigation and drainage (iii) Method of irrigation and drainage (iv) Water requirements of crops (v) Duty and discharge of water, (vi) Common water lifts. Diesel and electric pumps.
7. **Weed and weed control.**
8. **Cropping scheme, importance of principles if:** (i) Crop rotation (ii) Principle cropping (iii) Mixed and inter cropping (vi) Dry farming (v) Cooperative farming.
9. Elementary Surveying-Importance of Surveyng. elementary survey with the help of chains, instruments used in survey as optical square, cross staff offset rod, dumpy level, recording of field book.
10. Introduction (i) Importance and scope of Horticulture (ii) Pomology - Location and layout. (iii) Planting system - training, pruning, inter-cropping, winds breaks, protection from frost and sun burn (vi) care maintenance and rejuvenation of fruit, orchards.
11. Vegetable Gardening (i) Kitchen gardening (ii) Cultivation of Radish, Carrot, cole crops, Onion Brinjal, Chilies, Tomato potatoes.
12. Fruit cultivation (i) Vegetative propagation-Budding, inarching and Goottee cutting, Grafting and layering (ii) Cultivation of Papaya, Banana, Grapes, Mango, Guava and citrus fruits.
13. Ornamental Gardening (i) General Cultivation of Winter and summer season annuals (ii) Ornamental and flowering plants. Trees shrubs, climbers, hedges and hedges plants. (iii)

Common ornamental and flowering plants e.g. Rose, Canna and chrysanthemum (iv) Preparation and maintenance of lawns.

14. Fruit and Vegetable preservation- Canning and bottling Technique (i) Simple canning and bottling techniques use of suitable containers like aluminised plastic and paper (ii) Washing, Blanching and peeling of fruit and Vegetables, trading of fruits for canning.
15. Preservation of Fruits and Vegetables (i) General principles and methods of fruit and vegetable preservation (ii) Processing by heat, preservation by antiseptic drying, preservation by fermentation dehydration and packing (iii) Preparation of jelly, Lime squash and Tomato sauce.
16. Rural Finance (i) Cultivator's Finance needs for farmers (ii) Source of credit (iii) Organisation of Rural Cooperative credit and marketing societies.

5.(ब) पशुपालन एवं कुक्कुट पालन के तत्व

5. (B) ELEMENTS OF ANIMAL HUSBANDRY AND POULTRY FARMING (Ag.-3)

- (A).1. **Introduction :-** (i) Importance of Live stock in Indian Economy, (ii) Body parts of cow and buffalo and description of important systems, respiratory, digestive, reproductive, secretion of milk.
2. **Improved Cattle Breeds :-** (i) Cow (ii) Buffalo (iii) Goat and (iv) Sheep.
3. **Care and management of Cattle :-** (i) Animal Hygiene (ii) Cattle housing sheds for bullocks, bull, milch cattle etc. (iii) Special attention for rearing of calves, pregnant and milch cattle, working bullocks and bull.
4. **Breeding of Cattle :-** (i) Breeding Line breeding and cross breeding, Mendel's laws of breeding (ii) Artificial insemination in cattle with examples.
- (B)5. **Dairy Farming:** (i) General idea regarding dairy farming as a business in village and town conditions requirement of land, labour, capital; management techniques.
6. **Milk Production:** - (i) Different methods of milking, (ii) Principles of clean milk production, (iii) Factors affecting quality and quantity of milk.
7. **Composition of milk :** (i) Definition of milk (ii) Milk constituents (iii) Composition of Milk: Factors affecting composition of milk.
8. **Physical properties of milk :** (i) Temperature (ii) Boiling Freezing point (iii) pH (iv) Density (v) Specific gravity use of Lactometer (vi) Gerber's method for fat test.
- (C)9. **Feed and Feeding :** (i) Principles of Feeding of dairy cattle (ii) Different types of feeds and fodders and their nutritive values - Kharif and Rabi Fodders: Hay and silage crops (iii) Preservation of fodders making of silage, hay silopits hay silopits. (iv) Computation of balanced ration of cows, buffaloes, bullocks, bulls goats and sheep.
10. **Judging of Cattle :** (i) Importance of Judging, (ii) Judging method, Score card method and on the basis of body parts, (iii) Judging the age of cattle by rings on the horn and by the teeth development.
11. **Dairy appliances :** (i) Construction of appliances and their cleanliness (ii) working of cream separator and its parts. Butter churner, Butter worker.
12. **Milk Products :** (i) Preparations of cheese. Cream, Ravi, Dahi, Butter, Ghee, condensed milk. Milk powder and their composition.
13. **Common diseases of Cattle :** (i) Symptoms of sick Animals, (ii) Symptoms of different diseases. Rinderpest Foot and Mouth disease. Blackquater, Haemorrhagic Septicaemia, Anthrax and piropasmosis: (iii) their prevention and control measures.
14. **Poultry Farming :** (i) Introductory, (ii) Scope and limitation of Poultry Farming, (iii) important breeds of poultry for eggs, meat (iv) Hatching of eggs and uses of incubator.
15. **Housing and ration for poultry birds:** (i) Poultry sheds, layout model sheds (ii) Ration of poultry bird-chicken, Growers, layers and Broilers.