

SUBJECT: BASIC AGRICULTURE (BAAG)**CLASS XI
SEMESTER I****THEORY****FULL MARKS:20****[MCQ Type (1 Mark) Question]**

UNIT	Topic	No of periods assigned	Marks
1	Introduction	4	2
2	Weather and Crop Production	6	2
3	Soil and Nutrient Management	8	4
4	Weed- Insect- Disease Management	10	5
5	Irrigation and Drainage	6	2
6	Farm Implements and Machinery	5	2
7	Seed Production and Certification	6	3
	Total	45	20

DETAIL SYLLABUS

UNIT	Topic / Sub Topic	No of periods assigned
1	Introduction: History of agricultural development; Importance, scope and branches of Agriculture and Horticulture; Relation of Science with Agriculture and Horticulture.	4
2	Weather and Crop Production: Definition of weather and climate; Types of weather parameters (<i>viz.</i> temperature, rainfall, humidity, day length, etc.); Role of monsoon in agriculture; Agro-climatic zones of West Bengal: classification, characteristics and crops sequence; Crop seasons: characteristics and major crops; Concept of weather forecasting and agro-meteorological advisory services; Climate change in relation to crop production.	6
3	Soil and Nutrient Management: Definition of soil and its primary characteristics; Concept of soil profile, texture and structure, Classification of soil; Characteristics of different soil zones in West Bengal and scope for crop production; Essential plant nutrients, their functions and deficiency symptoms; Differences between manures and fertilizers; Classification and nutrient content of different manures and commercial fertilizers; Types and use of bio-fertilizers; Soil testing and soil health card for recommendations.	8
4	Weed- Insect- Disease Management: Definition and classification of weeds; Methods of weed control (cultural, mechanical, chemical, biological and integrated weed management); Major weeds and their control; Types of insects, mites and nematodes, their infestation and control; Types of diseases (fungal, bacterial and viral), infestation and control measures; Integrated pest management.	10
5	Irrigation and Drainage: Role of irrigation and drainage in crop production; Sources of irrigation (rain, canal, tank, river, well, tubewell, etc.); Methods of irrigation; Water requirement of major agricultural and horticultural crops, and scheduling of irrigation based on critical growth stages; Watershed management.	6
6	Farm Implements and Machinery: Types and uses of implements for tillage and intercultural operations; Uses and general maintenance of farm machinery like power tiller, tractor, seed drill, paddy transplanter, weeder, sprayer, combine harvester, paddy and wheat thresher, rice milling, pulse milling and oil extraction equipments, etc.	5

7	Seed Production and Certification: Definition and characteristics of seed; Types of seed: nucleus, breeder, foundation, certified and truthfully labeled; Basic principles of seed production (isolation distance, rouging, seed lot, etc.); Seed certification; Seed testing (purity, germination and vigour).	6
	Total	45

**CLASS XI
SEMESTER II**

THEORY

FULL MARKS: 30

[SAQ (2 Marks) and LAQ Type (4 Marks) Question]

UNIT	Topic	No of periods assigned	Marks
1	Cultivation of Agricultural Crops	30	16
2	Cultivation of Horticultural Crops and Post-harvest Processing	24	10
3	Marketing, Crop insurance, Co-operative and Extension services	9	4
	Total	63	30

DETAIL SYLLABUS

UNIT	Topic / Sub Topic	No of periods assigned
1	Cultivation of Agricultural Crops: Classification of agricultural crops; Area, production and yield of major crops in India with special reference to West Bengal; Basic principles of crop production like season, tillage, sowing/transplanting, intercultural operations, nutrient, weed and water management, insect-disease control, harvesting, threshing, yield, storage, post-harvest operations, etc. with special reference to some important crops like cereals (rice, wheat and maize), oil seeds (rapeseed-mustard, sesamum and groundnut), pulses (chickpea and lentil), fibre crops (jute, cotton), tuber crops (potato), sugar crops (sugarcane) etc.; Cropping system; Sustainable crop production; Organic farming.	30
2	Cultivation of Horticultural Crops and Post-harvest Processing: Importance of fruits and vegetables in human diet; Classification of horticultural crops: vegetables, fruits, flowers and spices; Basic principles of production like season, tillage, sowing/planting, intercultural operations, nutrient, weed and water management, insect-disease control, harvesting, threshing, yield and storage with special reference to fruit crops (mango, banana, guava, litchi, orange, etc.), vegetables (brinjal, tomato, onion, chilli, cauliflower, cabbage, radish, carrot, leafy vegetables, etc.), flowers (marigold, tuberose, chrysanthemum, gladiolus, roses, orchids, etc.), plantation crops (tea, etc.); Different methods of propagation (cutting, grafting, budding, layering, tissue culture, etc.); Principles and methods of fruits and vegetables preservation; Preparation of jam, jelly, squash, sauce, etc.	24
3	Marketing, Crop Insurance, Co-operative and Extension Services: Definition and concept of agricultural marketing; Panchayati Raj System: Foundations and Organizational set up; Functions of Regulated market and Food Corporation of India (FCI); Concept of Minimum Support Price (MSP), AGMARK, agricultural subsidy, etc.; Lead bank schemes; Crop insurance: advantages, limitations, estimation of crop losses and status in West Bengal; Co-operative system: functions, credit, structure and successful examples; Agricultural development programmes: RastriyaKishiVikasYojona (RKVY), Agricultural and Training Management Agency (ATMA), etc.	9
	Total	63

PRACTICAL
CLASS XI

FULL MARKS: 50

NO. OF PERIODS ASSIGNED: 144

DETAIL SYLLABUS

Sl. No.	Topic	No. of periods
SEMESTER I		
1	Preparation of district-wise map of West Bengal for major agricultural and horticultural crops; and Preparation of state-wise map of India for major agricultural crops	2
2	Preparation of map indicating Agro-climatic Zones of West Bengal	2
3	Soil sample collection, preparation and analysis; Understanding soil health card	2
4	Preparation of compost and vermi-compost	4
5	Identification of fertilizers along with nutrient content	2
6	Calculation of fertilizers (straight and compound) for major crops	4
7	Study on tillage operations and land preparation	4
8	Identification of weeds in fields and wetlands and preparation of weed album	4
9	Identification of insects in fields and storage	4
10	Identification of diseases in agricultural and horticultural crops	4
11	Demonstration of different sources and methods of irrigation	4
12	Identification and use of different farm implements and machinery	4
13	General maintenance of farm machinery	4
14	Identification of seeds of different agricultural crops	2
15	Seed testing: purity, viability, moisture content, germination, etc.	2
16	Demonstration of seed bags/ packets, certification label, etc.	2
17	Seed storage: structure and methods	2
18	Visit to Seed Production Farm and Seed Processing Unit within the district	8
Total		60
SEMESTER II		
19	Seed treatment (dry and wet) of important field crops	2
20	Sowing of some crops like wheat, rapeseed-mustard, chickpea, jute, etc.	4
21	Transplanting of rice seedlings in main field	2
22	Planting of potato, sugarcane, etc.	4
23	Intercultural operations of different crops	4
24	Weed control practices: hand weeding, mechanical and application of herbicides	4
25	Calculation and spraying of insecticide, fungicide, herbicide, etc.	4
26	Calculation and dusting of insecticides, etc.	2
27	Harvesting and threshing of rice, rapeseed-mustard, lentil, etc.	4
28	Visit to a 'Model Agriculture Farm' including 'Automatic Weather Station' within the district / region	8
29	Visit to a Rice Mill/ Cold Storage within the district	8
30	Lay out and cultivation of vegetables in kitchen garden	6
31	Nursery bed preparation and management for vegetables and flowers	4
32	Demonstration of propagation methods (cutting, grafting, budding, layering, etc.)	4
33	Preparation of jam, jelly, squash and sauce	6
34	Visit to a 'Model Orchard' within the district	8
35	Preparation of flow charts for production-based marketing of commercial crops	2

36	Visit to Regulated Market, Farmers' Co-operatives and PanchayatSamitis within the area / district	8
	Total	84
	Class XI Total	144

Reference Books:

1. UcchamadyamikKrishiVigyan (in Bengali) by Prabash Chandra Das and RatikantaGhosh, Oriental Book Company Private Limited, Kolkata.
2. SahajKathayBigyanbithwikChaasbas (in Bengali) by GosthoNayban, Ananda Agency, Kolkata.
3. AdhunikKrishi Katha (in Bengali) by HarasitMazumdar, MehanatiPrakashani, Hooghly.
4. PaschimbangeDhanChaas: Boichitra, Bibartan o Adhunikata (in Bengali) by MrityunjayGhosh, MehanatiPrakashani, Hooghly.
5. Paschimbange Pat Chaas: AtitthekeBartaman (in Bengali) by MrityunjayGhosh, Mehanati Prakashani, Hooghly.
6. Dalshasya o Tailabeez Chaser Handbook (in Bengali) by GosthoNayban, MehanatiPrakashani, Hooghly.
7. AdhunikKrishi o UdyanBigyanebongKrishiJantropati (in Bengali) by Bijoy Krishna Ghosh and SamiranBandopadhyay, Sridhar Prakashani, Kolkata.
8. KrishiJantropatirByabahar o Raksanabyakhon (in Bengali) by SubrataKarmakar, Mehanati Prakashani, Kolkata.
9. Handbook of Agricultural Sciences (in English) by S.S. Singh, Kalyani Publishers, New Delhi.
10. Handbook of Agriculture (in English), Indian Council of Agricultural Research, New Delhi.
11. Fundamentals of Agriculture, Vol. I and Vol. II (in English) by ArunKatyan, Kushal Publications and Distributors, Varanasi.