

SKILL FACULTY OF AGRICULTURE

B. Voc. (Agriculture) Scheme

3 Year Course

First Year Syllabus

2021-24



SHRI VISHWAKRMA SKILL UNIVERSITY

DUDHOLA, PALWAL

B. Voc. Agriculture - Semester I

Category	Subject Code	Subjects	Credits			Hours			Theory (Marks)			Practical (Marks)			Total
			Th	P	To	Th	P	To	I	E	To	I	E	To	
General Education Component	AGB-21101	Communication Skills	3	1	4	45	30	75	30	70	100	35	15	50	150
	AGB-21102	Fundamental of Computers	3	1	4	45	30	75	30	70	100	35	15	50	150
	AGB-21103	Fundamental of Rural Development	3	2	5	45	60	105	30	70	100	35	15	50	150
			9	4	13	135	120	255	90	210	300	105	45	150	450
Skill Education Component	AGB-21104	Organic Farming - 1	3	3	6	45	90	135	30	70	100	35	15	50	100
	AGB-21105	Organic Farming - 2	3	3	6	45	90	135	30	70	100	35	15	50	100
	AGB-21106	Hydroponic Techniques	4	3	7	60	90	150	30	70	100	35	15	50	100
			10	9	19	150	270	420	90	210	300	105	45	150	450
		Total	19	13	32	285	390	675	180	420	600	210	90	300	900

B. Voc. Agriculture - Semester II

Category	Subject Code	Subjects	Credits			Hours			Theory (Marks)			Practical (Marks)			Total
			Th	P	To	Th	P	To	I	E	To	I	E	To	
General Education Component	AGB-21201	MOOC/Online Contents - I	3	0	3	0	0	0	30	70	100	0	0	0	100
	AGB-21202	MOOC/Online Contents - II	2	0	2	0	0	0	30	70	100	0	0	0	100
			5	0	5	0	0	0	60	140	200	0	0	0	200
Skill Education Component	AGB-21203	<u>OJT</u> Organic Farming (120 hrs) Hydroponic Techniques (165 hrs) Agriculture Practices (405 hrs)	0	23	23	0	690	690	0	0	0	350	150	500	500
			0	23	23	0	690	690	0	0	0	350	150	500	500
		Total	5	23	28	0	690	690	60	140	200	350	150	500	700

B. Voc. Agriculture - Semester III

Category	Subject Code	Subjects	Credits			Hours			Theory (Marks)			Practical (Marks)			Total
			Th	P	To	Th	P	To	I	E	To	I	E	To	
General Education Component	AGB-21301	Fundamentals of Vegetable Growing	4	1	5	60	30	75	30	70	100	35	15	50	150
	AGB-21302	Seed, Soil and Fertilizer Management	3	1	4	45	30	75	30	70	100	35	15	50	150
	AGB-21303	Integrated Pest and Disease Management in Agriculture	2	2	4	30	60	105	30	70	100	35	15	50	150
			9	4	13	135	120	255	90	210	300	105	45	150	450
Skill Education Component	AGB-21304	Vermicompost Production - 1	3	3	6	45	90	135	30	70	100	35	15	50	100
	AGB-21305	Vermicompost Production - 2	3	3	6	45	90	135	30	70	100	35	15	50	100
	AGB-21306	Aquaculture Techniques	4	3	7	60	90	150	30	70	100	35	15	50	100
			10	9	19	150	270	420	90	210	300	105	45	150	450
		Total	19	13	32	285	390	675	180	420	600	210	90	300	900

B. Voc. Agriculture - Semester IV

Category	Subject Code	Subjects	Credits			Hours			Theory (Marks)			Practical (Marks)			Total
			Th	P	To	Th	P	To	I	E	To	I	E	To	
General Education Component	AGB-21401	MOOC/Online Contents - III	3	0	3	0	0	0	30	70	100	0	0	0	100
	AGB-21402	MOOC/Online Contents - IV	2	0	2	0	0	0	30	70	100	0	0	0	100
			5	0	5	0	0	0	60	140	200	0	0	0	200
Skill Education Component	AGB-21403	<u>OJT</u>													
		Vermicompost Production (110 hrs) Aquaculture Techniques (142 hrs) Agriculture Practices (438 hrs)	0	23	23	0	690	690	0	0	0	350	150	500	500
			0	23	23	0	690	690	0	0	0	350	150	500	500
		Total	5	23	28	0	690	690	60	140	200	350	150	500	700

B. Voc. Agriculture - Semester V

Category	Subject Code	Subjects	Credits			Hours			Theory (Marks)			Practical (Marks)			Total
			Th	P	To	Th	P	To	I	E	To	I	E	To	
General Education Component	AGB-21501	Fundamentals of Mushroom Production Technology	3	1	4	45	30	75	30	70	100	35	15	50	150
	AGB-21502	Post-Harvest Management	2	1	3	30	30	60	30	70	100	35	15	50	150
	AGB-21503	Micro Irrigation System	4	2	6	60	60	120	30	70	100	35	15	50	150
			9	4	13	135	120	255	90	210	300	105	45	150	450
Skill Education Component	AGB-21504	Dairy Farming - 1	3	3	6	45	90	135	30	70	100	35	15	50	100
	AGB-21505	Dairy Farming - 2	3	3	6	45	90	135	30	70	100	35	15	50	100
	AGB-21506	Bee Keeping	4	3	7	60	90	150	30	70	100	35	15	50	100
			10	9	19	150	270	420	90	210	300	105	45	150	450
		Total	19	13	32	285	390	675	180	420	600	210	90	300	900

B. Voc. Agriculture - Semester VI

Category	Subject Code	Subjects	Credits			Hours			Theory (Marks)			Practical (Marks)			Total
			Th	P	To	Th	P	To	I	E	To	I	E	To	
General Education Component	AGB-21601	MOOC/Online Contents - V	3	0	3	0	0	0	30	70	100	0	0	0	100
	AGB-21602	MOOC/Online Contents - VI	2	0	2	0	0	0	30	70	100	0	0	0	100
			5	0	5	0	0	0	60	140	200	0	0	0	200
Skill Education Component	AGB-21603	<u>OJT</u> Dairy Farming (120 hrs) Bee Keeping (140 hrs) Agriculture Practices (430 hrs)	0	23	23	0	690	690	0	0	0	350	150	500	500
			0	23	23	0	690	690	0	0	0	350	150	500	500
		Total	5	23	28	0	690	690	60	140	200	350	150	500	700

B. Voc. Agriculture - Semester I

Category	Subject Code	Subjects	Credits			Hours			Theory (Marks)			Practical (Marks)			Total
			Th	P	To	Th	P	To	I	E	To	I	E	To	
General Education Component	AGB-21101	Communication Skills	3	1	4	45	30	75	30	70	100	35	15	50	150
	AGB-21102	Fundamental of Computers	3	1	4	45	30	75	30	70	100	35	15	50	150
	AGB-21103	Fundamental of Rural Development	3	2	5	45	60	105	30	70	100	35	15	50	150
			9	4	13	135	120	255	90	210	300	105	45	150	450
Skill Education Component	AGB-21104	Organic Farming - 1	3	3	6	45	90	135	30	70	100	35	15	50	100
	AGB-21105	Organic Farming - 2	3	3	6	45	90	135	30	70	100	35	15	50	100
	AGB-21106	Hydroponic Techniques	4	3	7	60	90	150	30	70	100	35	15	50	100
			10	9	19	150	270	420	90	210	300	105	45	150	450
		Total	19	13	32	285	390	675	180	420	600	210	90	300	900

Complete Syllabus

SEMESTER 1

Subject: Communication Skills

Subject Code: AGB-21101

Course Credit: 04 (3-1-0)

Max. Marks: 100 (30I+70E); 50(35I+15E)

Course Objectives: To acquaint students about communication skills, vocabulary, listening skills and reading skills. Students will also learn about Information transfer and oral presentation, Reading activities, Extempore public speaking, Situational dialogues in skill lab.

Theory

UNIT 1

Communication: Meaning and importance of communication; Types; Process of communication, Communication network in an organization; Barrier to communication; Essentials of good communications; Communication techniques

UNIT II

Remedial English Grammar: Articles, agreement between verb and subject, tenses; Modal and their uses, Prepositions, active and passive voices; Understanding and applying vocabulary; One-word substitute, Synonyms, Antonyms

UNIT III

Listening skills: The process of listening; Types of listening; Benefits of effective listening; Barriers of listening

UNIT IV

Reading skills: Process and methodologies of readings, skimming and scanning; Level of reading and proof-reading summarizing; Precise writing, unseen comprehension, passage note; Taking and reviewing, conversion of given information and charts and graphs.

UNIT V

Elements of effective writing: Main forms of written communication, Notices and draft writing an Email and correspondences; Personal official and Business, Technical report writing; Preparing Agenda and minutes of meeting

Practical

Greeting and starting conversation, Information transfer and oral presentation, Reading activities, Extempore public speaking, Situational dialogues / role play, Telephonic skills, Group discussion, Intonation and common error in pronunciation, Listening and comprehension skills

Recommended Reading

1. Sethi, J & et al A Practice in English Pronunciation, Prentice Hall of India, New Delhi
2. Sen Leena. Communication skills, Prentice Hall of India, New Delhi
3. D.G. Saxena, Essential of communication skills, Kuntal Tamang.
4. D.G. Saxena, Communication skills in India, Kuntal Tamang.
5. Roach Peter, English Phonetics and Phonology
6. Mc Carthy, Michael, English Vocabulary in Use, Cambridge University Press
7. Rajinder Pal and Prem Lata, English Grammar and Composition, Sultan Chand Publication.
8. Idioms and Phrases (English-Hindi), Arihant Publication (Pvt) Ltd
9. One-word substitution, Dr Ashok Kumar Singh, Arihant Publication (Pvt) Ltd

Sample Question Paper

COURSE: B VOC AGRICULTURE (1ST SEMESTER)

Subject: Communication Skills

Total Marks :70

Subject Code: AGB-21101

Time Duration: 3hrs

General Instructions:

- There shall be two Sections A and B.
- Section (A) shall be objective type 10 questions from all units, each question carry **two marks** and all Questions are **compulsory**.
- Section (B) containing 8 long answer type Questions, one from each unit of equal marks out of which student need to do **any five of 10 Marks** each.

Section (A)- MCQs

(2x10)

Q 1. Communication is a non-stop-----

- a.) paper
- b.) process
- c.) programme
- d.) All of the above

Q 2. Communication is a part of ----- skills

- a.) Hard
- b.) Soft
- c.) Rough
- d.) Short

Q 3. The----- is the person who transmits the message

- a.) Receiver
- b.) Driver
- c.) Sender
- d.) Cleaner

Q 4. ----- is a person who notices and decodes and attaches some meaning to the message

- a.) Receiver
- b.) Driver
- c.) Sender
- d.) Cleaner

Q 5 Message is any signal that triggers the response of-----

- a.) Receiver
- b.) Driver
- c.) Sender
- d.) Cleaner

Q 6. Understanding _____ different parts of speech form the base of leaning grammar

- a.) Five
- b.) Eight
- c.) Six
- d.) Seven

Q 7. Communication strengthens _____ & _____ relationship in an organization.

- a.) employer-father
- b.) employer-employer
- c.) mother-employer
- d.) mother-child

Q 8. A _____ way be defined as the name of a person place or thing

- a.) Verb
- b.) Noun
- c.) Pronoun
- d.) Adverb

Q 9. The message may be misinterpreted because of _____

- a.) Barriers
- b.) Distortions
- c.) Distractions
- d.) Noise

Q 10. In oral presentation outside your organization you must first give the audience a _____ of your organization.

- a.) Flash back
- b.) Background
- c.) Front view
- d.) Forward view

Section (B) -Long answer type Questions (Do any 5)

(10x5)

Q 1. Define Communication. Give examples of different types of communication?

Q 2. What is effective writing? Give example of official and formal effective writing.

- Q 3. What is the use of article while writing letters? Explain with example
- Q 4. Is it important to have Listening skills? Explain in context of negotiations.
- Q 5. Enlist 5-10 things that are important for writing and oral communication?
- Q 6. Explain Communication techniques in details?
- Q 7. What is the protocol of technical report writing?
- Q 8. What is the use of article while writing letters? Explain with example

END OF PAPER

Subject: Fundamental of Computers

Subject Code: AGB-21102

Course Credit: 04 (3-1-0)

Max. Marks: 100 (30I+70E); 50(35I+15E)

Course Objectives: To acquaint students about Introduction to Computer System, number system, operating system and understanding office applications, Network Technologies, Introduction to Internet and protocol, Network connecting devices, Topologies, HTTP and HTTPS etc.

Theory

UNIT-1

Introduction to Computer System: Basic Applications of Computer; Input Output Devices, Computer Memory, Concepts of Hardware and Software, Computer Virus: Definition, Types of viruses, Characteristics of viruses, Anti-virus software,

UNIT-II

Number System: Introduction to number system, Decimal to Binary and Vice Versa, Decimal to Octal and Vice Versa, Decimal to Hexa-Decimal and Vice Versa, ASCII Codes

UNIT-III

Operating System: Overview of operating system: Definition, Functions of operating system, Need and its services, Types of operating system, Batch Processing, Multiprocessing, Multiprogramming, Time-Sharing, On-Line Processing, Real-Time Processing

UNIT-IV

Understanding Office Applications: Introduction to MS Word, Introduction to MS Excel and its applications, Introduction to MS PowerPoint, Menus, Shortcuts, Document types, Formatting documents, spread sheet and presentations, Working with Spreadsheets, Different templates, Macros, Mail merge

UNIT-V

Networking: Network Technologies, Introduction to Internet and protocol, Network connecting devices, Topologies, HTTP, HTTPS.

Practicals:

MS Word, MS Excel and calculations, MS PowerPoint, Menus, Shortcuts, Document types, Formatting documents, spread sheet and presentations, Working with Spreadsheets, Different templates, Macros, Mail merge

Networking: Network Technologies, Introduction to Internet and protocol, Network connecting devices, Topologies, HTTP, HTTPS.

Recommended reading:

1. Computer Fundamentals by Priti Sinha, Pradeep K., Sinha
2. Introduction to Computers by Peter Norton
3. Basic Computer Knowledge (Computer Basics Book 1) by John Monyjok Maluth
4. Introduction to Computing Systems: From bits and gates to C & beyond by Yale Patt, Sanjay Patel
5. Computer Systems, Digital Design, Fundamentals of Computer Architecture and Assembly Language by Elahi, Ata
6. Fundamentals of Information Technology by A. Ravichandran

Sample Question Paper

COURSE: B VOC AGRICULTURE (1ST SEMESTER)

Subject: Fundamental of Computers

Total Marks :70

Subject Code: AGB-21102

Time Duration: 3hrs

General Instructions:

- There shall be two Sections A and B.
- Section (A) shall be objective type 10 questions from all units, each question carry **two marks** and all Questions are **compulsory**.
- Section (B) containing 8 long answer type Questions, one from each unit of equal marks out of which student need to do **any five of 10 Marks** each.

Section (A)- MCQs

(2x10)

Q1. An electronic tool that allows information to be input, processed, and output:

- a.) Operating system
- b.) Motherboard
- c.) Computer
- d.) CPU

Q2. Which of the following decimal numbers is equivalent to the highest value that can be held in an 8-bit binary register using unsigned binary?

- a.) 127
- b.) 256
- c.) 65536
- d.) 255

Q3. Around carry is used to correct the result of additions in which of the following number systems?

- a.) 8 bit Signed Binary
- b.) 8 bit Ones Complement.
- c.) 8 bit Twos Complement.
- d.) Excess 3 BCD

Q4 Which of the following is not an operating system?

- a.) Windows
- b.) Linux
- c.) Oracle
- d.) DOS

Q5. What is the maximum length of the filename in DOS

- a.) 4
- b.) 5

- c.) 8
- d.) 12

Q6. In which view Headers and Footers are visible

- a.) Normal View
- b.) Page Layout View
- c.) Print Layout View
- d.) Draft View

Q7. The process of removing unwanted part of an image is called

- a.) Hiding
- b.) Bordering
- c.) Cropping
- d.) Cutting

Q8. The space left between the margin and the start of a paragraph is called

- a.) Spacing
- b.) Gutter
- c.) Indentation
- d.) Alignment

Q9. What is internet

- a.) a single network
- b.) vast collection of different networks
- c.) interconnection of local area networks
- d.) interconnection of wide area networks

Q10. ISP exchanges internet traffic between their networks by _____

- a.) internet exchange point
- b.) subscriber end point interconnection of wide area networks
- c.) isp end point
- d.) internet end point

Section (B) -Long answer type Questions (Do any 5)

(10x5)

- Q. 1 What are the Concepts of Hardware?
- Q. 2 Explain the Binary Language of Computers with examples
- Q.3 What are different types of operating system.
- Q.4 What is Batch Processing, Multiprocessing, Multiprogramming, Time-Sharing?
- Q.5 How MS Excel and its applications is important in office management.
- Q.6 What are the Concepts of Software?
- Q. 7 Explain the Binary Language of Computers with examples
- Q.8 What are different types of operating system.

END OF PAPER

SUBJECT: Fundamental of Rural Development

SUBJECT CODE: AGB-21103

Course Credit: 04 (3-2-0)

Max. Marks: 100 (30I+70E); 50(35I+15E)

Course Objectives: To acquaint students about rural ecology, socio strata and cultural pattern in India and government support system and its influence in Indian Agriculture, basic knowledge on social strata, rural women status and rural health in Agriculture Importance of agriculture extension in sustainable agriculture, cooperative and models of cooperatives, livelihood and Microfinance models and its applications.

UNIT -I

Rural Economy and Development: Basic understanding of sociology in terms of society (caste, class, creed, race, gender etc), Basic understanding of Indian villages and their pattern in terms socio, economic, political and cultural pattern, History of Rural development, History of Govt. Development Programmes, Panchayati Raj Institutions

UNIT –II

Rural Communication and extension : SMCRE model, Relation of SMRCE with diffusion, Extension methods, organizing groups, discussion, farm and home visit, leaflet, pamphlets etc., Communication Skills, Communication exercises, Effective ways of communication, SHG a tool, Evolution of SHG, SHG a tool for development, Addresses women development, Women vis-à-vis rural India (to keep records, Group meeting, models of SHGs, SHG and credit) , different way to approach the community and mobilize women; Basic of accounting : Book keeping, cash book ledger.

UNIT – III

Rural Women, Adult and Non-Formal Education- Need of education, Social Research Develop Questionnaire, Survey methods, Case study etc., Rural Health- Rural health conditions with focus on child health, Agriculture Extension- Agriculture in India, Agriculture research in India, Micro Credit

UNIT-IV

Understanding Cooperatives – History of cooperative and models of cooperatives, MACS Act. Livelihood & Livelihood models, Group recognition test, tracking of Loans, Different formats etc. Bank linkage; & Micro Finance -Models of Micro finance, Regulatory frame work, need

of financial services, MIS- Importance and Standards in MF- Calculating OTR, PAR, Rep. Rate, rating groups, Transparency- Transparency in social life, MFI, Work, etc.

Practicals:

A case study to understand the problems of Women in Rural Area. A case study to understand the working of NGO. To conduct Market research; To conduct Social Research; Case study for various agriculture extension services. Case study to understand the working of SHG. A visit to Rural Bank. An activity to develop communication skills. Micro-credit system- A visit with any NGO or Government organisation. An activity that involves basics of accounting.

Recommended Reading:

1. Rural Development: Principles, Policies, and Management by Katar Singh, Anil Shishodia.
2. Fundamentals of Extension Education and Rural Development with practical by Sagar Mondal, Om Prakash Mishra
3. Participatory Rural Appraisal by N. Narayan
4. Handbook of Rural Development by EE publication

Sample Question Paper

COURSE: B VOC AGRICULTURE (1ST SEMESTER)

Subject: Fundamental of Rural development

Total Marks :70

Subject Code: AGB-21103

Time Duration: 3hrs

General Instructions:

- There shall be two Sections A and B.
- Section (A) shall be objective type 10 questions from all units, each question carry **two marks** and all Questions are **compulsory**.
- Section (B) containing 8 long answer type Questions, one from each unit of equal marks out of which student need to do **any five of 10 Marks** each.

Section (A)- MCQs

(2x10)

Q1. Agricultural diversification means _____ of the _____ labour force in the agricultural sector needs to find alternate employment opportunities in other non-farm sectors

- a.) Minor proportion, decreasing
- b.) major proportion, decreasing
- c.) major proportion,
- d.) increasing Minor proportion, increasing

Q2. Operation flood is related to

- a.) Pulses co-operatives
- b.) None of these Cereals
- c.) co-operatives
- d.) Milk co-operatives

Q3. Micro credit programme

- a.) Credit provision made by small farmers
- b.) Credit provision made by large farmers
- c.) Credit provisions made by self-help group to its members
- d.) None

Q4. Which scheme provide adequate and timely support from the banking system to the farmers for their cultivation needs in a flexible manner

- a.) KMC
- b.) KCC
- c.) KBC

d.) KMM

Q5. Which of the following is false regarding SHG's

- a.) Introduced in 1982
- b.) Improve rural's poor access to formal credit system
- c.) Small and informal association of poor persons
- d.) Provide rural credit by mobilizing their own resources

Q6. A shift from crop farming to other areas of productive activity with a view to raising income known as

- a.) Diversification of crop production
- b.) Diversification of productive activity
- c.) Both
- d.) None

Q7. Match the following. Options are

a. Short term credit	i. For purpose of purchases of land etc.
b. Medium term credit	ii. To meet the input expenses such as seed, fertilizers etc.
c. Long term credit	iii. Required for buying cattle, for making improvements on land etc.

- a.) a(i), b(iii), c(ii)
- b.) a(ii), b(iii), c(i)
- c.) a(iii), b(ii), c(i)
- d.) a(ii), b(ii), c(iii)

Q8 Jamshedji Tata National Virtual Academy is to impart operational training to nearly ____ lac rural people to run info-kiosks

- a.) 10
- b.) 25
- c.) 15
- d.) 20

Q9 An instrument used by government to stabilise prices

- a.) SSP
- b.) SHP
- c.) Buffer stock
- d.) MSP

Q10. Full form of SHG is:

- a.) Small Holding Group
- b.) Small Household Group
- c.) Self-help group
- d.) All the above

Section (B) -Long answer type Questions (Do any 5)

(10x5)

- Q.1 What is Society? What is the status of women in rural society?
- Q. 2 How is rural communication different from urban?
- Q.3 What is Microfinance and explain the importance.
- Q.4 What is Microcredit system? How it helps in the development of villagers?
- Q.5 What is research and types of social research.
- Q.6 What do you understand by SHG? Explain.
- Q. 7 How can we create data based on health of children in rural area?
- Q. 8 Explain working of NGOs in India for rural developments?

END OF PAPER

Subject: Organic Farming - 1 (AGR/Q1201, V1.0)

Subject Code: AGB-21104

Course Credit: 06 (3-3-0)

Max. Marks: 100 (30I+70E); 50(35I+15E)

Course Objectives: To acquaint students about understand the role of organic grower, scopes and opportunities of organic farming, Crop portfolios – Multi crop, Feasible crop Prepare Yearly Plan / Crop Schedule and Soil nutrient management under Organic farming.

UNIT-I

Planning for Organic Farming (AGR/N1201)

Introduction to organic farming: concept, scope and importance and need of organic farming in India, transition to organic farming, estimation the cost, time and budget of organic farming, phased approach to be taken to transition to organic farming, prepare crop portfolios – multi crop, feasible crop prepares yearly plan / crop schedule, need of safe farming practices.

UNIT-II

Crop Selection & seed treatment under organic farming (AGR/N1202)

Crop selection: identification of main crop and companion crop, plan for intercrop, mixed crop, relay crop, trap crop etc, plan for crop rotation cycle, selection of seed variety –insect pest resistant, non-genetically modified etc,

Seed treatment: organic practices for seed treatment, inputs/material to be used for organic seed treatment, preparation of inputs for seed treatment, implementation of seed treatment.

UNIT-III

Soil nutrient management under Organic farming (AGR/N1203)

Concept of soil nutrient management under organic farming: soil activation and soil enhancement, importance of top soil in organic cultivation, various methods of activating microbial activity in top soil, prepare various organic inputs that can increase soil microbial activity, apply soil activating inputs effectively, soil testing, soil amendment, manuring, land preparation, green manure crop, farm yard manure, use of bio mass, vermicompost, vermiwash, permaculture, implementation of soil enhancement methods, protocol preparation for basal dose application & top dressing.

UNIT-IV

Weed control under Organic Farming (AGR/N1204)

Identification of weeds: identify the types of weed in the crop, weed management, undertake mechanical/manual weeding process at appropriate time to avoid crop damage, mulching sheets for cultivation, use bio-herbicides for weed control wherever feasible, mechanized weed control equipment.

Tools/Equipment Required: White Board, Marker, Laptop, projector, Record Keeping Book, receipts, voucher, Soil testing kit, plastic bags, labels, plough, seed drill, leveller, tractor, Sprayer, bio fertilizers, irrigation tools & equipment, container, Storage infrastructure -cool chamber, crate, bags, Nose masks, first aid kit

Practical

Visit of organic farms to study the various components and their utilization, Study of different organic materials and manures; Green manuring for organic farming, Preparation of enrich compost and vermicompost, Identification of different types of weeds and different weed control equipments, soil testing of farm land, soil amendment in organic farming, Estimation of the cost and time of organic farming, Preparation of crop schedule in organic farming

Recommended Reading:

1. Organic Farming: Theory and Practice by S.P. Palaniappan.
2. Organic Urban Farming, the Indian Way: Comprehensive Guide to Organic Gardening for Urban Spaces in India by Prabal Mallick.
3. Principles of Organic Farming by S R Reddy.
4. Principles of Organic Farming by P L Maliwal
5. A Hand Book of Organic Farming by Arun K Sharma
6. Principles of Organic Farming, with theory and practicals by E Somasundaram

Sample Question Paper

COURSE: B VOC AGRICULTURE (1ST SEMESTER)

Subject: **Organic Farming -1**

Total Marks: 70

Subject Code: AGB-21104

Time Duration: 3 hrs

General Instructions:

- There shall be two Sections A and B.
- Section (A) shall be objective type 10 questions from all units, each question carry **two marks** and all Questions are **compulsory**.
- Section (B) containing 8 long answer type Questions, one from each unit of equal marks out of which student need to do **any five of 10 Marks** each.

Section (A)-MCQs

(2x10)

Q.1 which of these is NOT allowed in organic farming

- A. Buffer Zones
- B. Cover Crops
- C. Sewage Sludge
- D. Crop Rotation

Q.2 which of the following is an organic farming practice that helps maintain soil health

- A. Sewage Sludge
- B. Synthetic Fertilizers
- C. Monoculture
- D. Crop Rotation

Q.3 which of the following is allowed in organic farming

- A. Synthetic Fertilizers
- B. Buffer Zones
- C. Persistent Pesticides
- D. Hormones

Q.4 Since organic farms can't use synthetic pesticides, how do they control insects

- A. Use cover crops

- B. Use crop rotation
- C. Use beneficial birds and insects to eat the insects that destroy crops and cause disease
- D. All of the above

Q.5 Green manure plants used by farmers mainly belong to the family

- A. Compositae
- B. Leguminosae
- C. Solanaceae
- D. Poaceae

Q.6 Composted manure is produced from

- A. Farmyard manure and green manure
- B. Farm refuse and household refuse
- C. Organic remains of biogas plants
- D. Rotten vegetables and animal refuse

Q.7 which is the main source of irrigation of agriculture land in India

- A. Tanks
- B. River
- C. Wells
- D. Canals

Q.8 Soil mulch is useful in

- A. Minimize evaporation losses
- B. Improving aeration
- C. Improving drainage
- D. Removing weed

Q.9 Vermicompost is biofertilizer which is rich in

- A. Phosphorus
- B. Calcium
- C. Nitrogen
- D. All of the above

Q.10 In India which of the following genera of earthworms is extensively used for vermiculture

- A. Eudrigaster
- B. Eudrilus
- C. Pontoscolex
- D. Pheretima

Section (B) -Long answer type Questions (Do any 5)

(10x5)

- Q.1 Discuss concept, scope and importance and need of organic farming in India?
- Q.2 Explain the cost, time and budget of organic farming?
- Q.3 Concept of soil nutrient management under organic farming? Discuss
- Q.4 what is main crop and how can you differentiate it from companion crop?
- Q.5 Discuss the plan for intercrop, mixed crop, relay crop, trap crop in organic farming?
- Q.6 Discuss various methods of activating microbial activity in top soil?
- Q.7 what is the importance of soil testing in organic farming? Discuss
- Q.8 Discuss about vermiwash and permaculture?

END OF PAPER

Subject: Organic Farming - 2 (AGR/Q1201, V1.0)

Subject Code: AGR-21105

Course Credit: 06 (3-3-0)

Max. Marks: 100 (30I+70E); 50(35I+15E)

Course Objectives: To acquaint students about irrigation management under organic farming, Resistant varieties, crop rotation, inter crop, border crop, trap crops, interculture operations, understand the natural enemies of pest, beneficial insects, bio-insecticides, Harvest and Post – harvest management under organic farming.

Theory

UNIT 1

Irrigation Management under Organic farming (AGR/N1205)

Characteristics of good irrigation system, the micro irrigation techniques, tools/equipment required for micro irrigation, optimum moisture level required for the farm.

UNIT 2

Integrated Pest and Disease Management under organic farming (AGR/N1206)

Crop infestation, symptoms of disease incidence in crop, stages of pest incidence, use of suitable varieties, Preventive and curative care, Resistant varieties, crop rotation, inter crop, border crop, trap crops, intercultural operations, natural enemies of pest, beneficial insects, bio-insecticides, etc.

UNIT 3

Harvest and Post – harvest management under organic farming (AGR/N1207)

Harvesting of the crop: Crop maturity, moisture content during harvesting, etc, physical admixture during harvesting, harvesting methods and handling of harvested crops, Post-harvest management practices like grading, storage, organically acceptable fumigation, cold storage, packaging and marketing

UNIT 4

Undertake Quality assurance & certification in Organic Farming (AGR/N1208) (10 hrs)

Third party certification process, Risk management in compliance of standards, Participatory

guarantee system, Documentation in third party and PGS certification, Documents needed for sale of organic produce and traceability.

UNIT 5

Undertake business of Organic farming (AGR/N1209)

Economics of organic farming, Connecting with the market and market intelligence, Direct marketing

UNIT 6

Maintain Health & Safety at the work place (AGR/N9903)

Perform General Safety Rules, Knowledge of various health hazards relevant to workplace and basic first aid training, basic safety checks and other common reported hazards before all farm operation, identify and study the use of equipment, materials safely and correctly, handle the emergency situation in workplace and during any farm operation

Tools/Equipment Required:

White Board, Marker, Laptop, projector, Record Keeping Book, receipts, voucher, Soil testing kit, plastic bags, labels, plough, seed drill, leveler, tractor, Sprayer, bio fertilizers, irrigation tools & equipment, container, Storage infrastructure -cool chamber, crate, bags, Nose masks, first aid kit.

Practicals:

Identification of the symptoms of disease incidence in crop like wheat, paddy, peas, sugarcane and some vegetables, Bio fertilizers/bio inoculants for organic farming, ITK for nutrient management, Non chemical approach for insect, pest, disease and weed management General safety measures, Post-harvest management: quality aspect, grading, packaging and handling Visit of organic farms to study the various components and their utilization

Sample Paper

COURSE: B VOC AGRICULTURE (1ST SEMESTER)

Subject: **Organic Farming - 2**

Total Marks: 70

Subject Code: AGB-21105

Time Duration: 3 hrs

General Instructions:

- There shall be two Sections A and B.
- Section (A) shall be objective type 10 questions from all units, each question carry **two marks** and all Questions are **compulsory**.
- Section (B) containing 8 long answer type Questions, one from each unit of equal marks out of which student need to do **any five of 10 Marks** each.

Section (A)-MCQs

(2x10)

Q.1 What is green manure

- a.) A manure pile covered with weeds
- b.) A crop grown to be plowed under
- c.) Manure produced by animals eating fresh grass
- d.) Fresh manure

Q.2 Bioherbicides have been recommended

- a.) To prevent ecodegradation
- b.) Because of their ready availability
- c.) Because of their cheap rates
- d.) Because of their abundance

Q.3 Biofertilizers are

- a.) Organic manures
- b.) Culture of micro-organism
- c.) Green manure
- d.) None of these

Q.4 The main source of bio fertilizers are

- a.) Cyanobacteria
- b.) Fungi
- c.) Bacteria
- d.) All these

Q.5 Which of the following is a green manure

- a.) Sebania
- b.) Maize
- c.) Rice
- d.) Sorghum

Q.6 The azolla – Anabaena symbiotic relation is utilized to increase the fertility of rice field. It increases ----- in the soil

- a.) Potassium
- b.) Phosphorous
- c.) Nitrogen
- d.) Sulphur

Q.7 Main function of biofertilizer is

- a.) To increase chemical process
- b.) To increase physiological process
- c.) To increase biological process
- d.) To increase photosynthesis process

Q.8 which one is a natural insecticide

- a.) Nicotine
- b.) Pyrethrum
- c.) Cinerin
- d.) All these

Q.9 Spraying of DDT produces pollution of

- a.) Air
- b.) Air and Water
- c.) Air and Soil
- d.) Air, Water and Soil.

Q.10 Which of the following is not one of the categories of organic certification

- a.) Crops
- b.) Wild Crops
- c.) Equipment
- d.) Handling

Section (B) -Long answer type Questions (Do any 5)

(10x5)

Q.1 Discuss Integrated Pest and Disease Management under organic farming?

Q.2 Discuss the characteristics of good irrigation system?

Q.3 What is organic certification? Discuss its importance in Organic Farming?

Q.4 Define crop infestation? Identify the symptoms of disease incidence in crops?

Q.5 what are the general safety Rules which must be followed in organic farming?

Q.6 Discuss about the economics of organic farming?

Q.7 Define harvesting? Discuss about Crop maturity, moisture content in organic farming?

Q.8 Discuss about natural enemies of pest, beneficial insects and bio-insecticides?

END OF PAPER

Subject: Hydroponics Techniques (AGR/Q0808)

Subject Code: AGB-21106

Course Credit: 07 (4-3-0)

Max. Marks: 100 (30I+70E); 50(35I+15E)

Course Objectives: To acquaint students about hydroponic system, selection of crops, light, temperature and humidity interacts with horticultural crops in the greenhouse, plant physiology and environmental management, Nutrient Film Technique, Deep Flow Technique, Ebb & Flow, Wick System, Drip method, aeroponics and Greenhouse / Polyhouse with ongoing hydroponic cultivation.

Theory

UNIT I

Introduction: scope and importance of horticulture in India, different plant components and plant food (composition), sources of plant food, importance of roots, types of hydroponics- solution culture and medium culture, crops-food and fodder that can be grown using hydroponics system

Different types of Hydroponic system: NFT – Nutrient Film Technique, DFT – Deep Flow Technique, Ebb & Flow, Wick System, Drip method, Aeroponics and their pros and cons

UNIT II

Hydroponic growth of plants and related operations (AGR/N0822)

Crops and their suitability to hydroponics system, light, temperature and humidity, EC and pH interacts with horticultural crops in the greenhouse, and environmental management, media types, characteristics, and their application, and the principal factors affecting their selection, Crop spraying (calculate volume, speed and pressure) for different types of systems; Plant physiology: plant structure, photosynthesis, nutrition, characteristics of different root-zone factors and their application, plant food, substrates and nursery medium for the growth of plants
Fertigation: application of fertilizations, principal factors involving nutrient management (including basic formula calculations); Common pests and characteristics of different diseases, Integrated Pest Management (IPM) and role of bio-controls to control common greenhouse pests; Plant health, hydroponic environment, nutrient solution, perform routine maintenance checks, maximize greenhouse efficiency and energy conservation

Assess water quality, characteristics of different treatment systems and their application

UNIT-III

Harvesting, grading, storage and marketing activities in a hydroponics system (AGR/N0823)

Post-harvest management: Concepts and importance of including cooling, cleaning, sorting, grading and packing, maturity indices of different crops and time of day to reap, harvesting in the hydroponics system, practices for grading, storage and marketing of the produce of different commodities, practices to maintain operations and production data at the hydroponics farm

UNIT-IV

Manage requirements of a hydroponics system (AGR/N0824)

Requirements for nutrient media, seed grains in accordance with demand forecast, water and electricity requirement for the hydroponics system; suitable conditions for optimum growth in a hydroponics system, monitoring, recording and responding approach to good crop balance.

UNIT V

Basic entrepreneurial activities for small enterprise (AGR/N9908)

Exposure of small enterprises related to hydroponics through case studies, B:C ratio for hydroponics cultivation, sources of funds/ subsidies, target customers, demand and supply of commodities, different marketing channels, relevant legislation and rules, marketing data and basic book keeping, communication skills and digital skills

UNIT-VI

Safety and hygiene in the hydroponics system (AGR/N0825)

Hygiene related to proper drainage of nutrient water, seal any spillage that may occur and prevent birds and animals from accessing it, clean and efficient workplace

Safety with the electrical equipment available in a hydroponic farm and first aid

Unique Tools/Equipment Required:

Greenhouse / Polyhouse with ongoing hydroponic cultivation (media and / or water based), temperature and humidity meter, EC meter, automated curtain operations, mister, fogger, circulatory fans, drip irrigation system with aero drippers, inner (net) curtain, Automated fertigation and humidity control mechanism (sand filter, disc filter, motor, valves, pressure gauge), calibrated containers and plates to measure run off (water), different types of media samples.

Practicals:

Identification and characterization of different types of growing media for hydroponics systems; Development of the monitoring, recording and responding approach to good crop balance; Exposure to various small enterprises related to hydroponics through case studies; Identify different sources of funds/ subsidies and how to avail the same, Identify target customers, demand and supply of commodities; practical based on grading, storage and

marketing of the produce of different commodities, practices to maintain operations and production data at the hydroponics farm; A case study of different types of diseases of selected crops and preparation of list of biocontrols for IPM; A visit to nearby hydroponic system, designing and construction of different types of hydroponics

Recommended Reading:

1. Hydroponics Farming in India by Josh Williams
2. Hydroponics, Soilless Gardening by S.L. Jana
3. Hydroponics, How to Do by Dr. Rajan K, Dr. Ramkumar S
4. Hydroponics, Principles and Practices by Dr. Sanbagavalli S, Dr. Ganeshan K
5. Hydroponics For Beginners by Erin Morrow
6. Commercial Hydroponics By John Matson

Sample Paper

COURSE: B VOC AGRICULTURE (1ST SEMESTER)

Subject: Hydroponic Techniques

Total Marks :70

Subject Code: AGB-21106

Time Duration: 3 hrs

General Instructions:

- There shall be two Sections A and B.
- Section (A) shall be objective type 10 questions from all units, each question carry **two marks** and all Questions are **compulsory**.
- Section (B) containing 8 long answer type Questions, one from each unit of equal marks out of which student need to do **any five** of **10 Marks** each.

Section (A)- MCQs

(2x10)

1. Which of these is the fibre obtained from the coconut's husk.
 - (a) Perlite
 - (b) Vermiculture
 - (c) Coir
 - (d) Rockwool
2. The form of hydroponics that does not require a growing medium at all is.
 - (a) Aquaculture
 - (b) Static solution culture
 - (c) Medium culture
 - (d) Aeroponics
3. Plants with larger roots can be cultivated with which of the following types of hydroponics.
 - (a) Ebb and flow system
 - (b) Drip system
 - (c) Nutrient Film technique
 - (d) None of these
4. Hydroponics is a method of cultivation of plants without the use of.
 - (a) water
 - (b) air

- (c) soil
 - (d) sunlight
- 5.** Which of the following is not true about hydroponics?
- (a) Requires high investment
 - (b) Technical knowledge required
 - (c) Can be misused to cultivate banned crops
 - (d) Plants through hydroponics cannot be cultivated everywhere
- 6.** The scientist who used nutrient culture solution in hydroponic cultures was
- (a) Knop
 - (b) Sachs
 - (c) Wallace
 - (d) Webster
- 7.** Deficiency of mineral nutrition does not cause which of these.
- (a) Chlorosis
 - (b) Etiolation
 - (c) Necrosis
 - (d) Shortening internode
- 8.** Roots of a plant in hydroponics are submerged in a solution of dissolved
- (a) fertilizers
 - (b) oxygen
 - (c) mineral salts
 - (d) chemicals
- 9.** Which of these plants may not be suitable for cultivation through hydroponics.
- (a) Tomatoes
 - (b) Carrot
 - (c) Cucumber
 - (d) Strawberries
- 10.** Salts and water in hydroponic plants are absorbed by
- (a) Leaves
 - (b) Stem
 - (c) Roots
 - (d) Outer Layer of plants

Section (B) -Long answer type Questions (Do any 5)

(10x5)

- Q. 1 Differentiate Hydroponic and aeroponic techniques.
- Q. 2 Describe role of hydroponics.
- Q. 3 Explain B:C ratio for hydroponics cultivation.
- Q. 4 What is crop spraying for different types of systems?
- Q. 5 Describe about biocontrols used for IPM?
- Q. 6 What are suitable conditions for optimum growth in a hydroponics system?
- Q.7 Describe concepts and importance of postharvest management including cooling, cleaning, sorting, grading and packing ?
- Q. 8 Explain safety and first aid in hypertonic systems.

END OF PAPER

B. Voc. Agriculture - Semester II

Category	Subject Code	Subjects	Credits			Hours			Theory (Marks)			Practical (Marks)			Total
			Th	P	To	Th	P	To	I	E	To	I	E	To	
General Education Component	AGB-21201	*MOOC/Online Contents - I	3	0	3	0	0	0	30	70	100	0	0	0	100
	AGB-21202	MOOC/Online Contents - II	2	0	2	0	0	0	30	70	100	0	0	0	100
			5	0	5	0	0	0	60	140	200	0	0	0	200
Skill Education Component	AGB-21203	OJT Organic Farming (120 hrs) Hydroponic Techniques (165 hrs) Agriculture Practices (405 hrs)	0	23	23	0	690	690	0	0	0	350	150	500	500
			0	23	23	0	690	690	0	0	0	350	150	500	500
		Total	5	23	28	0	690	690	60	140	200	350	150	500	700

*Students can avail any two courses (one for 2credits and one for 3credits) from the list provided below

MOOCs Courses

1. Fundamentals of Agricultural Extension
 2. Management of Infertility in Cattle
 3. Conservation Agriculture-based Sustainable Intensification
 4. Diagnosis of Crop and Stored Grain Pests and their Management
 5. GIS in Ag-Essentials and Applications
 6. Weather Forecast in Agriculture and Agro-advisory
 7. Agricultural Value Chain Management
 8. Design Thinking for Agricultural Implements
 9. Integrated Pest Management
 10. Nutrition, Therapeutics and Health
 11. Farm Machinery
 12. Nanotechnology in Agriculture
 13. Indian Agricultural Development
 14. Organic Farming for Sustainable Agricultural Production
 15. Cooperatives and Farmer's Organizations
 16. Introduction to Poultry Farming
 17. Food Laws and Standards
 18. Technology of Fermented, Cheese, Ice-cream and By-products
 19. Indian Agricultural Development
 20. Awareness Programme on Solar Water Pumping System
 21. Integrated Farming Systems for sustainable agriculture
 22. climate Smart Organic Farming
 23. Weather based agro met advisory services through ICT
 24. Soil Management for Climate smart Agriculture
 25. Soil And Water Conservation Engineering
 26. Soil Science and Technology
 27. Novel Technologies for Food Processing and Shelf-Life Extension
 28. Instrumentation and Process Control in Food Industry
 29. Machine Learning For Soil And Crop Management
 30. Nanotechnology In Agriculture
 31. Economic Viability of Indian Agriculture
 32. Basics of Entrepreneurship development in Agriculture
 33. Agriculture value chain management
- Others