

Printing Pages: 2

Paper Code: AG-307

B

(SVSU:2025-26/R)

Enrollment No.

Program Name: B. Sc. Agriculture
3rd Semester / 2nd Year Examination

Subject Code: AG-307

Subject Name: Principles of Integrated Plant Disease Management

[Time : 03:00 Hours]

[Max. Marks : 75]

Note : Attempt all the questions as per given instructions.

1. Multiple Choice Questions (MCQs) [01×15=15]
- I Environmental contamination by fungicides can lead to:
(a) Improved soil fertility (b) Death of beneficial soil microorganisms
(c) Increased water purity (d) Reduction in biodiversity only in deserts
- II The Economic Threshold Level (ETL) is:
(a) The same as EIL
(b) The pest density at which action should be taken to prevent reaching EIL
(c) The pest density at which maximum crop yield occurs
(d) The minimum number of pests in the field
- III Which of the following methods is commonly used for the eradication of seed-borne diseases?
(a) Crop rotation (b) hot water treatment of seeds
(c) Use of insecticides (d) Intercropping
- IV Biological control involves:
(a) Using synthetic fungicides
(b) Introducing natural enemies of the pathogen
(c) Applying high doses of fertilizers
(d) Burning infected fields only
- V Which of the following is a cultural method of disease management?
(a) Seed treatment with fungicides (b) Timely sowing of crops
(c) Introducing *Trichoderma* spp (d) Spraying systemic fungicides
- VI Sanitation in plant disease management includes:
(a) Removal of infected plant debris (b) Frequent use of insecticides
(c) Irrigation scheduling (d) Fertilizer application
- VII *Trichoderma* is primarily used in agriculture for:
(a) Increasing nitrogen fixation
(b) Biological control of plant pathogens
(c) Enhancing photosynthesis (d) Insect pest management
- VIII One of the mechanisms by which *Trichoderma* controls pathogens is:
(a) Nitrogen fixation (b) Mycoparasitism
(c) Nitrogen fixation (d) Herbicide production *Bacillus subtilis*

- IX *Trichoderma* can control which of the following pathogens?
 (a) *Rhizoctonia solani* (b) *Meloidogyne incognita*
 (c) *Sclerotium rolfsii* (d) All of the above
- X *Pseudomonas fluorescens* is a..... bacteria
 (a) Gram positive (b) Gram negative
 (c) Gram division (d) None of these production
- XI *Pseudomonas fluorescens* is a..... bacteria
 (a) Star shaped (b) Spherical shape (c) Rod shaped (d) Spiral form
- XII The best way to apply *Trichoderma* for soil-borne disease management is:
 (a) Foliar spray (b) Seed treatment and soil application
 (c) Direct injection into stems (d) Spraying with insecticide
- XIII *Bacillus subtilis* is effective against:
 (a) Only bacterial pathogens (b) Only viral diseases
 (c) Fungal and bacterial pathogens (d) Nematodes only
- XIV What type of microorganism is *Bacillus subtilis*?
 (a) Gram-positive, spore-forming bacterium
 (b) Gram-negative, non-spore-forming bacterium
 (c) Actinomycetes (d) Cyanobacterium
- XV Regarding IDM, main purpose of deep ploughing during summer is to
 (a) Increase soil moisture (b) Bury weed seeds
 (c) Destroy soil-borne fungal inoculum through solar heat
 (d) Improve nitrogen fixation

2. Answer in long (any three) [10×3=30]

- I Explain in details on the implementation and impact of IDM module for disease.
- II Describe the concept of integrated disease management.
- III Write in details on classification plant disease.
- IV Write down the disease forecasting and their method.

3. Answer in short (any six) [5×6=30]

- I Writes the biological control of plant disease.
- II Define wilt and dieback symptoms
- III Write about the monocyclic disease and polycyclic disease.
- IV Writes the formula of percentage disease incidence and disease severity.
- V Writes the survey and surveillance.
- VI Define the Diagnosis and Detection of Plant disease
- VII Differentiate between infectious and non-infectious disease.

Program Name B.Sc. Agriculture

III Semester / 2 Year

Subject Code: AG 303

Subject Name: Fundamentals of Plant Breeding

[Time: 03:00 Hours]

[Max. Marks: 75]

Note: 1. Attempt all the questions as per the given instructions.

1. Multiple Choice Questions (MCQs) [01×15=15]

- I** What is the basic unit of heredity?
(a) Chromosome (b) Gene (c) DNA (d) Protein
- II** What is the genotype of a homozygous dominant individual?
(a) Aa (b) aA (c) aa (d) Aa
- III** Which scientist is known as the father of genetics?
(a) Charles Darwin (b) Gregor Mendel
(c) Watson (d) Crick
- IV** What is the main goal of plant breeding?
(a) Increase plant height
(b) Improve taste
(c) Develop disease-resistant varieties
(d) Reduce water usage
- V** Heterosis refers to the phenomenon
(a) Higher yield (b) Faster growth
(c) Greater resistance to diseases (d) all of the above
- VI** Which of the following is a method of plant breeding?
(a) Irrigation (b) Fertilization
(c) Hybridization (d) Pruning
- VII** Which type of pollination is essential for hybridization?
(a) Self-pollination (b) Cross-pollination
(c) Wind pollination (d) Water
- VIII** Which of the following is a self-pollinated crop?
(a) Maize (b) Sunflower (c) Mustard (d) Wheat
- IX** Which of the following is a method to promote cross-pollination in crops?
(a) Bagging (b) Emasculation (c) Selfing (d) Cloning
- X** Self-pollination leads to:
(a) Greater genetic diversity (b) Uniformity in traits
(c) Hybrid vigor (d) Increased disease resistance

- XI** What is male sterility in plants?
- (a) Inability to produce seeds
 - (b) Inability to produce viable pollen
 - (c) Inability to photosynthesize
 - (d) Inability to absorb water
- XII** Cytoplasmic male sterility is commonly used in the production of:
- (a) Pure lines (b) Mutants (c) Hybrids (d) Clones
- XIII** Restorer genes in male sterility systems are used to:
- (a) Maintain sterility (b) Induce mutations
 - (c) Prevent disease (d) Restore fertility in hybrids
- XIV** Self-incompatibility prevents:
- (a) Cross-pollination (b) Seed formation
 - (c) Self-pollination (d) Germination
- XV** Self-incompatibility is commonly found in:
- (a) Wheat (b) Rice (c) Brassica (d) Maize

2. Answer in long (any three) [10×3=30]

- I** Give a detailed account of the historical development of plant breeding.
- II** Write the genetic principles that are useful to improve the heredity of plants.
- III** Explain genotypic male sterility.
- IV** Describe linkage and crossing over in plant breeding.

3. Answer in short (any six) [5×6=30]

- I** Highlighted the prospects of plant breeding.
- II** Explain about Chromatids, Centromere, and homologous chromosomes with a suitable diagram.
- III** Explain gene interaction and its types.
- IV** Write about heterosis breeding and its types.
- V** What do you mean by polyploidy and its types?
- VI** Explain distyle and tristyle with a labelled diagram.
- VII** Explain Heteromorphic Self-incompatibility.

Printing Pages: 2

Paper Code: AG-301

B

(SVSU:2025-26/R)

Enrollment No.

B.Sc. Agriculture

III Semester / 2nd Year Examination

Subject Code AG-301

Subject Name: Crop Production Technology-I (Kharif Crop)

[Time : 03:00 Hours]

[Max. Marks : 75]

Note: 1. Attempt all the questions as per given instructions.

- 1. Multiple Choice Questions (MCQs)** **[01×15=15]**
- I** Which one is the kharif crop?
 (a) Mustard (b) Paddy (c) Potato (d) Wheat
- II** Which of the following leading state in area and production of maize?
 (a) Karnataka (b) U.P. (c) Kerala (d) Rajasthan
- III** What is the Protein content in Groundnut:
 (a) 10-18% (b) 30-40% (c) 20-30% (d) 40-48%
- IV** Family of Maize is:
 (a) Malvaceae (b) Leguminosae (c) Poaceae (d) Tilliaceae
- V** *Gossypium hirsutum* is the variety of:
 (a) Maize (b) Sorghum (c) Jute (d) Cotton
- VI** 'Glyphosate' is commonly used for:
 (a) Herbicide (b) Pesticide (c) Fertilizer (d) All
- VII** Which is the hybrid variety of cotton:
 (a) DCH-32 (b) ICPH-9 (c) DCM-7 (d) QC-10
- VIII** The number of Chromosome in maize:
 (a) $2n=20$ (b) $2n=24$ (c) $2n=16$ (d) $2n=10$
- IX** '*Vigna radiata*' is the scientific name of:
 (a) Rice (b) Sorghum (c) Mungbean (d) Cowpea
- X** IIFSR is located at:
 (a) Meerut (b) Kanpur (c) Rampur (d) Lucknow
- XI** Drip is a type of:
 (a) Tillage (b) Irrigation
 (c) Weed Management (d) None of these
- XII** What is Pendimethalin?
 (a) Buffer (b) Pesticide (c) Nutrient (d) Herbicides
- XIII** Minimum temperature for sorghum seed germination is:
 (a) 7-10% (b) 5-6% (c) 15-20% (d) 10-12%

XIV When Kharif crop is harvested?
(a) Jan-Feb (b) Sep-Oct (c) March-April (d) None of these

XV IARI is located at:
(a) Bhopal (b) Kanpur (c) New Delhi (d) Hyderabad

2. Answer in long (any three) [10×3=30]

I Write down the crop growing techniques of cotton.

II Describe the methods of mungbean cultivation with their origin, & economic importance.

III Write a detail note on different weed management practices in crop.

IV Write down the cultivation practice of paddy.

3. Answer in short (any six) [5×6=30]

I Write down on following heads:

(a) sorghum-water management (b) sorghum-pests management

II Give a short note on suitable Climate, Soil and varieties for groundnut crop.

III Define the crop growing practices of pearl millet.

IV Describe seed sowing and irrigation management in maize.

V Write down the five varieties of cotton and pigeon pea.

VI What do you understand by economic importance of oilseed and fiber crops?

VII Explain all field preparation methods for growing crops.

Printing Pages: 2

Paper Code: AG-306

B

(SVSU:2025-26/R)

Enrollment No.

B.Sc Agriculture

3 Sem / 2 Year, Regular Examination

Farm Machinery and Power (AG-306)

[Time : 03:00 Hours]

[Max. Marks:75]

Note: 1. Attempt all the questions as per given instructions.

Multiple Choice Questions (MCQs)**[01×15=15]**

1. What is the methane percentage in biogas
 1. 55 % 2. 40 % 3. 80 % 4. 100 %
1. What is the carbon dioxide percentage in biogas
 1. 45 % 2. 55 % 3. 65 % 4. 75 %
2. Thermal Efficiency of petrol engine
 1. 32 to 38 % 2. 25 to 32 % 3. 80 to 95 % 4. None of these
3. Compression ratio of diesel engine
 1. 14:1 to 22:1 2. 10:1 to 18:1
 3. 33:1 to 44:1 4. 65:1 to 75:1
4. Fuel supply in diesel engine
 1. Spark plug 2. Injector 3. Thermo valve 4. None of these
5. Temperature of petrol engine
 1. Spark plug 2. Injector
 3. Thermo valve 4. None of these
6. Global warming is caused by
 1. Greenhouse gases 2. Hydrogen
 3. Nitrogen dioxide 4. All of the above
7. Exhaust gases go out through
 1. Suction valve 2. Power valve
 3. Exhaust valve 4. Intake valve
8. Useful life of tractor
 1. 10000 for 10 year 2. 20000 for 20 year
 3. 50000 for 50 year 4. None of these
9. Useful life of power tiller
 1. 8000 for 10 year 2. 4000 for 05 year
 3. 6000 for 03 year 4. None of these
10. The full form of I.C. engine
 1. Internal Combustion Engine 2. Internal Common Engine
 3. Internet Combustion Engine 4. None of these

11. Compression ratio of petrol engine
1. 5:1 to 8:1 2. 6:1 to 9:2 3. 8:8 to 9:9 4. 4:1 to 6:1
12. Ignition in diesel engine by
1. Heat of compression 2. Electric sparks
3. Air of compression 4. None of these
13. Fuel consumption of 2 stroke engine
1. Easy 2. High 3. Equal 4. None of these
14. Fuel consumption of 4 stroke engine
1. Easy 2. High 3. Equal 4. None of these

2. Answer in long (any three) [10×3=30]

- I A tractor has a belt speed of 1000 m/min at normal engine speed. A feed mill has a recommended speed of 2100 rev/min. find the size of pulley, needed on the mill?
- II A four-stroke engine has a mean effective pressure of 7 kg/cm² (686 kPa) area of piston is 730 cm², stroke length 45 cm, torque due to brake load is 110 kg-m (1078 Nm). Consumption / h. is 4.5 kg and working speed is 120 per minute. Calculate the indicated power, brake power, mechanical efficiency, specific fuel consumption.
- III Explain the working cycle of 4 stroke petrol engine?
- IV Explain the types of engine?

3. Answer in short (any six) [5×6=30]

- I Define the working of clutch and gear drive system?
- II A four-stroke petrol engine per day 02 hr. working in the field for ploughing. The initial cost found of the machine is 1400 Rs. Calculate the repair and maintenance cost of the four-stroke petrol engine?
- III Describe theradiator working system in tractor with suitable diagram?
- IV A diesel engine transmits 25 kW at the end of the crank shaft moving at 1650 rev/min. find the torque exerted by the piston?
- V Define the working of 2 stroke petrol engine?
- VI Define the fuel supply system in engine?
- VII Define the status of farm power?
- VIII Define the sources of farm power?

15/12/2025

Printing Pages: 2

Paper Code: AG-304

C

(SVSU:2025-26/R)

Enrollment No.

Program Name: B. Sc. Agriculture

3rd Semester / 2nd Year Examination

Subject Code: AG-304

Subject Name: Agricultural Microbiology

[Time : 03:00 Hours]

[Max. Marks : 75]

Note: 1. Attempt all the questions as per given instructions.

I. Multiple Choice Questions (MCQs)

[01×15=15]

I The converting the nitrate back into molecular nitrogen by bacteria:

(a) *Xanthomonas oryzae*

(b) *Puccinia*

(c) *Thiobacillus*

(d) All of these

II Fungi are...

(a) Eukaryotic & non-photosynthetic

(b) Prokaryotic & Photosynthetic

(c) Both a and b

(d) All of these

III Chemoautotrophs bacteria obtain energy from:

(a) Sunlight

(b) Organic compounds

(c) Oxidation of inorganic substances

(d) Fermentation

IV Nitrifying bacteria are examples of:

(a) Photoautotrophs

(b) Chemoautotrophs

(c) Heterotrophs

(d) Saprophytes

V Which process returns carbon dioxide to the atmosphere?

(a) Photosynthesis

(b) Respiration

(c) Carbon fixation

(d) Nitrogen fixation

VI Which of the following best describes the relationship between plants and rhizoplane microbes?

(a) Parasitic

(b) Commensal or mutualistic

(c) Predatory

(d) Competitive

VII Which process is most enhanced by rhizoplane bacteria?

(a) Photosynthesis

(b) Nitrogen fixation and phosphate solubilization

(c) Leaf transpiration

(d) Root elongation

VIII Which of the following bacteria lack a cell wall?

(a) *Staphylococcus aureus*

(b) *Escherichia coli*

(c) *Mycoplasma*

(d) *Bacillus subtilis*

IX The chemical formula of ammonia is:

(a) NH_4

(b) NH_3

(c) N_2H_4

(d) NH_3

- X** The bacterial flagellum is used for:
 (a) Conjugation (b) Motility (c) Sporulation (d) Energy production
- XI** Ammonia formed during ammonification is later converted to nitrite by:
 (a) *Nitrosomonas* (b) *Nitrobacter* (c) *Azotobacter* (d) *Pseudomonas*
- XII** Genetic exchange through a bacteriophage is known as:
 (a) Conjugation (b) Transduction
 (c) Transformation (d) Transcription
- XIII** The process by which bacteria take up free DNA from their environment is called:
 (a) Conjugation (b) Transformation (c) Transduction (d) Mutation
- XIV** Which structure helps bacteria attach to surfaces and other cells?
 (a) Flagella (b) Ribosomes (c) Pili (Fimbriae) (d) Endospores
- XV** *Bacillus subtilis* are :
 (a) Viral-Bioagent (b) Bacterial Bioagent
 (c) Mutation Bioagent (d) All of these

2. Answer in long (any three) [10×3=30]

- I** Explain in details on the Bacterial morphology and their structure.
- II** Describe the phosphorus cycle with suitable labeled diagram.
- III** Write in details on bacterial growth curve with suitable labeled diagram.
- IV** Write down the sulphur cycle with suitable labeled diagram.

3. Answer in short (any six) [5×6=30]

- I** Differentiate between chemoautotroph and photoautotroph bacteria.
- II** Define the term: Plasmid and Saprophyte
- III** Write the function of bacterial pilli.
- IV** Write the short notes on log phase of bacteria growth.
- V** Define the Mycoplasma and Viroid.
- VI** Define the Virus and Nematodes.
- VII** Differentiate between Rhizosphere and Rhizoplane.

Printing Pages: 2

Paper Code: AG-311

A

(SVSU:2025-26/R)

Enrollment No.

Program NameB.Sc Agriculture
 III Semester / ...II... Year Examination
 Subject CodeAG-311
 Subject- Name Dairy Science

[Time : 03:00 Hours]

[Max. Marks : 75]

Note: 1. Attempt all the questions as per given instructions.

2. Fill the correct answer of MCQs

1. Multiple Choice Questions (MCQ) 1×15=15]

1. NDDB located at
 A. Karnal B. Hisar C. Delhi D. None of Above
2. Dr. Kurien is the..... of milk producer
 A. Advisor B. Mentor C. Both A and B D. None of Above
3. Milk is related torevolution
 A. White B. Golden C. Blue D. Green
4. The yellow colour of milk due to
 A. Anthocyanin B. Lycopene
 C. Carotene D. None of Above
5. Highest Quantity of fat found inMilk
 A. Sheep B. Goat C. Cow D. Buffalo
6. NDRI located at.....
 A. Karnal B. Hisar C. New Delhi D. Meerut
7. Operation Flood was launched inYear
 A. 1970 B. 1971 C. 1981 D. 1980
8. Therank of India in milk production overall world
 A. First B. Second C. Third D. Fourth
9. The first five-year plan was started in.....Year
 A. 1951 B. 1961 C. 1970 D. 1955
10. Highest quantities of water found in.....milk
 A. Cow B. Sheep C. Buffalo D. None of Above
11. Father of white revolution is.....
 A. Dr. Swaminathan B. Dr. Kurien
 C. Dr. Himanshu D. None of Above
12. In first five year plan.....veterinary hospitals was established
 A. 605 B. 650 C. 550 D. 440
13. First time NDRI was established in
 A. Karnal B. Bangalore C. New Delhi D. Lucknow
14.gosadans was established in first five year plan
 A. 25 B. 30 C. 35 D. 40
15. In second five year planartificial Insemination center
 a. 670 b. 610 C. 510 D. 520

II Long Question: Answer Any Three

[10×3=30]

1. Define the different factors which affect the quality and quantity of milk.
2. Explain the milk filtration in brief.
3. Clarify Dairy Cooperative society in brief.
4. Discuss about the importance of milk in brief.
5. Elaborate the different methods of milk transportation..

III. Short Question: Answer any Six

[6×5=30]

1. How to calculate the milk density if lactometer reading 25, Milk temp 27 degree centigrade?
2. Explain the procedure for acidity determination.
3. What is COB test?
4. Clarify white revolution.
5. Describe milk adulteration.
6. What is the role the cleaning and sanitization in dairy Industry?
7. Define the achievements of Operation Flood.

10/12/2025

Printing Pages: 2

Paper Code: AG-312

B

(SVSU:2025-26/R)

Enrollment No.

Program Name: B.Sc. Agriculture

III Semester / II Year Examination

Subject Code: AG-312

SUBJECT NAME: FUNDAMENTALS OF ENTOMOLOGY-II

[Time : 03:00 Hours]

[Max. Marks : 75]

Note : Attempt all the questions as per the given instructions.

1. Multiple Choice Questions (MCQs)

[01×15=15]

I The study of insects is called...

- (a). Entomology (b). Botany (c). Protozoology (d). Ethology

II IPM is also known as?

- (a). IPC. (b). IDM. (c). IPA. (d). IIM.

III DBM is a specific insect of....?

- (a). Brinjal. (b). Tomato. (c). Cabbage. (d). Bottle gourd.

IV Family of diamond back moth is..

- (a). Plutellidae (b). Lepidoptera
(c). Diptera (d). Hemiptera

V Scientific name of boll weevil is..?

- (a). *Phenacoccus hirsutus*. (b). *Anthonomus grandis*.
(c). *Tectana grandis*. (d). *Sylepta derogata*.

VI Bt cotton is resistant against which crop?

- (a). Spodoptera. (b). Spodoptera.
(c). Lepidoptera. (d). Hemiptera.

VII First pesticide used in India was?

- (a). DDT. (b). Endosulfan.
(c). Heptachlor. (d). Aldrin.

VIII Insecticide which is also known as Gamma-hexachlorocyclohexane?

- (a). Hexachlorobenzene. (b). Heptachlor.
(c). TDE. (d). Lindane.

IX Which is a banned insecticide in India?

- (a). Aldrin. (b). Nitrofen.
(c). Aldicarb. (d). All of the above.

X Which is an organophosphate?

- (a). Mirex. (b). DDT. (c). Diazinon. (d). All of the above

XI Polyphagous insect-pest is..?

- (a). Locust. (b). DBM.
(c). Mango hopper. (d). Green hopper.

XII Monophagous insect-pest is?

- (a). Rice yellow stem borer.
- (b). Cotton jassid.
- (c). Rice weevil.
- (d). All of the above.

XIII For their size, insects are much stronger than man because

- a. Their muscles are naturally stronger
- b. They can control muscle response more precisely
- c. They have giant nerve fibers
- d. Of physical properties related to their small size

XIV Vector of rice tungro virus is..?

The most important vectors (transmission agents) of human disease would probably be

- a. Moths
- b. Beetles
- c. Ants
- d. Fleas

XV Vector of Grassy Stunt Disease is?

- (a). GLH.
- (b). BLH.
- (c). WLH.
- (d). All of the above.

2. Answer in long (any three)

[10×3=30]

I What do you mean by IPM? Explain the concept of IPM.

II Explain Recent methods of pest control.

III Describe the effects of biotic factors on insects.

IV Explain different components of insects' environment.

3. Answer in short (any six)

[5×6=30]

I What do you understand by inter-specific competition?

II Write a short note on the classification of insecticides.

III Write the formulation of any one insecticide.

IV Discuss the effects of light on insects

V Write a brief account of the effects of temperature on insects.

VI Mention any five characteristic features of insects.

VII Write application techniques of spray fluids.

Printing Pages: 2

Paper Code: AG-310

B

(SVSU:2025-26/R)

Enrollment No.

Program Name: B. Sc. Agriculture
 3rd Semester / 2nd Year Examination
 Subject Code: AG-310

Subject Name: Fundamental of soil and water conservation

[Time :03:00 Hours]

[Max. Marks :75]

Note: Attempt all the questions as per given instructions.

1. Multiple Choice Questions (MCQs)

[01×15=15]

- I** Which are the types of wind erosion?
 A) Saltation B) Surface creep
 C) Suspension D) All of these
- II** Which is primary stage of water erosion?
 A) Sheet erosion B) Wind erosion
 C) Rill erosion D) All of these
- III** What is E in $E=f(I, C, K, L, V)$?
 A) Soil productivity B) Local wind erosion
 C) Soil surface roughness D) Annual soil loss
- IV** Which are engineering measures in erosion control?
 A) Mixed cropping B) Contour cropping
 C) Strip cropping D) Gully plugging
- V** Land degradation is due to ?
 A) Mass movement B) Water logging
 C) Water logging D) All of these
- VI** How many types of soil are there?
 A) 12 B) 9 C) 8 D) 7
- VII** How many soil horizons?
 A) 7 B) 6 C) 5 D) 4
- VIII** Which is surface soil structure?
 A) Columnar B) Platy C) Angular D) Crumb
- IX** Which one is primary mineral?
 A) Pyrites B) Gypsum C) Mica D) Iron
- X** Which is flora?
 A) Bacteria B) Fungi C) Algae D) All of these
- XI** What is percentage of organic carbon in organic matter?
 A) 60% B) 58% C) 62% D) All of these

- XII** How many essential elements are there-
 A)17 B)16 C)18 D)19
- XIII** What is clay size
 A)<0.002mm B)0.2mm C)0.01mm D)All of these
- XIV** Which form of Boron does plants take?
 A)BO3 B)BO2 C)BO3⁻³ D)All of these
- XV** Which elements are dominant in strongly acidic soil
 A)Sodium B)Potassium C)Aluminum D)Carbonate

2. Answer in long (any three) [10×3=30]

- I** What is wind erosion and its types?
- II** Explain universal soil loss equation.
- III** How to control erosion by Agronomical measures .
- IV** What is watershed?

3. Answer in short (any six) [5x6=30]

- I** Explain accelerated water erosion?
- II** What is splash erosion?
- III** What are effects of water erosion?
- IV** What is wind erosion?
- V** Explain mechanics of wind erosion.
- VI** How can wind erosion be control?
- VII** What is desertification?

Printing Pages: 2

Paper Code: AG-309

B

(SVSU:2025-26/R)

Enrollment No.

Program Name - B.Sc. (Ag)

III-Semester / II Year Examination

Subject Code -AG-309

Subject Name- Statistical Methods

[Time : 03:00 Hours]

[Max. Marks : 70]

Note : Attempt all the questions as per given instructions.

1. Multiple Choice Questions (MCQs)

[01×15=15]

- I** Which of the following is a measure of dispersion?
a) Median b) Mode c) Range d) Mean
- II** Mean of binomial distribution is:
a) $n(1-p)$ b) np c) nq d) $\sqrt{npq}$
- III** Variance of Poisson distribution is equal to:
a) Mean b) Standard deviation c) Zero d) Median
- IV** A scatter diagram helps in studying:
a) Regression b) Skewness c) Correlation d) Dispersion
- V** If $r = 0$, it indicates:
a) Positive correlation b) Negative correlation
b) c) No correlation d) Perfect correlation
- VI** Test used for small samples is:
a) Z-test b) t-test c) Chi-square test d) F-test
- VII** Chi-square distribution is:
a) Symmetrical b) Positively skewed
c) Negatively skewed d) Uniform
- VIII** The degrees of freedom for χ^2 test in 2×2 table is:
a) 1 b) 2 c) 3 d) 4
- IX** In one-way ANOVA, if calculated $F < \text{table } F$, we:
a) Accept H_0 b) Reject H_0 c) Accept H_1 d) None
- X** Which of the following is not a sampling method?
a) Simple random b) Systematic
c) Complete enumeration d) Probability proportional
- XI** The curve of normal distribution is:
a) Skewed b) Bell-shaped c) Uniform d) Asymmetrical
- XII** If $P(A \cap B) = 0$, events A and B are:
a) Independent b) Mutually exclusive c) Dependent d) None
- XIII** Moment about mean of first order is always:
a) Zero b) One c) Mean d) Variance

- XIV Regression line of Y on X is given by:
 a) $Y = a + bX$ b) $X = a + bY$ c) $Y = abX$ d) None
- XV Sampling without replacement means:
 a) Each unit selected only once
 b) Each unit returned before next draw
 c) No sample drawn
 d) Repeated sampling

2. Answer in long (any three) [10×3=30]

- I Explain the graphical representation of data with examples.
- II Discuss sampling methods with their merits and demerits.
- III From the following data calculate Karl Pearson's Coefficient of correlation;

$$\begin{array}{ccccccccc} X: & 2 & 3 & 4 & 5 & 6 & 7 & 8 \\ Y: & 4 & 7 & 8 & 9 & 10 & 14 & 18 \end{array}$$
- IV Explain t-test for one sample and two samples with suitable examples.

3. Answer in short (any five) [5×5=25]

- I Write properties of arithmetic mean.
- II Distinguish between positive and negative correlation.
- III Explain the concept of sampling and its advantages.
- IV The marks obtained by 6 students are:
 12, 15, 18, 20, 25, 30
 Find the Median.
- V Find the Mean of the following numbers:
 12, 5, 17, 10, 16.
- VI Find the Mode of the following data;
 5, 7, 7, 8, 8, 8, 9, 10, 10, 2, 2, 2, 2, 2, 4, 4, 7, 7, 7, 7, 7
- VII Define Probability. Write its three properties.

Printing Pages: 2

Paper Code: AG-308

B

(SVSU:2025-26/R)

Enrollment No.

Program Name B.Sc. Agriculture

3rd Semester / 2 Year Examination

Subject Code: AG 308

Subject Name: Environmental Studies & Disaster Management

[Time: 03:00 Hours]

[Max. Marks: 75]

Note: Attempt all the questions as per the given instructions.

1. Multiple Choice Questions (MCQs) [01×15=15]

- I** Which resource is non-renewable?
(a) Wind energy (b) Biomass (c) Coal (d) Hydropower
- II** Which of these is a benefit of using renewable resources?
(a) They pollute the air (b) They run out quickly
(c) They are sustainable (d) They are expensive to extract
- III** Which cycle involves the movement of water through evaporation, condensation, and precipitation?
(a) Water Cycle (b) Nitrogen Cycle
(c) Phosphorus Cycle (d) Carbon Cycle
- IV** Which gas is primarily involved in the nitrogen cycle?
(a) Carbon dioxide (b) Oxygen (c) Hydrogen (d) Nitrogen
- V** Which cycle does not involve a gaseous phase?
(a) Phosphorus cycle (b) Nitrogen cycle
(c) Carbon cycle (d) Water cycle
- VI** Which plant is commonly found in desert ecosystems?
(a) Oak (b) Cactus (c) Pine (d) Bamboo
- VII** Which of the following is a terrestrial ecosystem?
(a) Ocean (b) Pond (c) Forest (d) River
- VIII** Which ecosystem has the highest biodiversity
(a) Desert (b) Tundra (c) Tropical rainforest (d) Grassland
- IX** Why is biodiversity important?
(a) It reduces oxygen levels (b) It increases pollution
(c) It maintains ecosystem balance (d) It causes climate change
- X** In a food web, what do arrows represent?
(a) Direction of sunlight (b) Flow of energy
(c) Movement of water (d) Predator size
- XI** Which organism is always at the base of a food web?
(a) Carnivores (b) Herbivores (c) Producers (d) Decomposers
- XII** Which level of the ecological pyramid has the most energy?
(a) Top level (b) Middle level
(c) Bottom level (d) All levels have equal energy

- XIII** Which of the following is a biotic component of the environment?
(a) Soil (b) Water (c) Plants (d) Air
- XIV** Which gas is responsible for the greenhouse effect?
(a) Oxygen (b) Nitrogen (c) Carbon dioxide (d) Hydrogen
- XV** Deforestation affects the environment by:
(a) Increasing oxygen levels (b) Reducing soil erosion
(c) Causing loss of biodiversity (d) Improving rainfall

2. Answer in long (any three) [10×3=30]

- I** Explain a detailed account of ecological pyramids with a suitable example.
- II** Describe a food web and an aquatic food chain with a labelled diagram.
- III** Explain the different functions of a forest ecosystem.
- IV** Explain the concept of primary and secondary succession with appropriate examples and diagrams.

3. Answer in short (any six) [5×6=30]

- I** Describe the nutrient cycle with a suitable example.
- II** Discuss abiotic and biotic components of the ecosystem with relevant examples.
- III** Explain the laws of thermodynamics, with suitable illustrations.
- IV** Provide a detailed explanation of the pyramid of energy with a suitable diagram.
- V** Explain the characteristics of the mangrove and mountain ecosystems.
- VI** Write down a detailed explanation of a desert ecosystem.
- VII** Draw a well-labelled diagram of the terrestrial and aquatic food chains.

Printing Pages: 2

Paper Code: AG-305

A

(SVSU:2025-26/R)

Enrollment No.

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

B.Sc. Agriculture

III Semester / II Year Examination

Subject Code: AG-305

Subject Name: Agricultural Finance & Cooperation

[Time : 03:00 Hours]

[Max. Marks : 75]

Note: 1. Attempt all the questions as per given instructions.

1. Multiple Choice Questions (MCQs)

[01×15=15]

I The word "credit" comes from the word "Credo" which means:

- (a) We faith (b) Reliance
(c) I deserve (d) I believe

II Government is a type of resource:

- (a) Institutional (b) Non-Institutional
(c) Both (a) & (b) (d) None of these

III SEWA cooperative bank was initiated in:

- (a) 1974 (b) 1982
(c) 1990 (d) 1989

IV RBI Headquarter is located at:

- (a) Patna (b) Bhopal
(c) Delhi (d) Mumbai

V RRBs is relate to:

- (a) Regional rural banks (b) Reserve rural banks
(c) Real rural banks (d) None of these

VI The word "credit" comes from:

- (a) Latin (b) Greek
(c) French (d) Russian

VII MFI Full form:

- (a) Micro finance Institutions (b) Mini finance Institutions
(c) Max finance Institutions (d) None of the above

VIII NPW is relate to the:

- (a) Net Present Worth (b) No Present Worth
(c) Net Past Worth (d) None of these

IX What is the full form of SHGs?

- (a) Self-Help Groups (b) Special-Help groups
(c) Social-Help Groups (d) None of these

X RBI was established in:

- (a) July 1938 (b) March 1945
(c) March 1955 (d) April 1935

XI Which one is the non-institutional resource?

- (a) RRBs
- (b) Cooperative Societies
- (c) Money Lenders
- (d) Govt. Banks

XII What is the full form of NABARD?

- (a) National Bank for Agriculture & Rural Development
- (b) National Bank for Agriculture Development
- (c) National Bank for Rural Development
- (d) None of these

XIII The Short-Term Credit is generally given to farmers for the duration:

- (a) 3 to 10 months
- (b) 5 to 8 months
- (c) 6 to 18 months
- (d) 6 to 36 months

XIV Relatives are the type of resources?

- (a) Non-Institutional
- (b) Institutional
- (c) Cooperative
- (d) All of these

XV NABARD was established in:

- (a) July 1982
- (b) March 1982
- (c) March 1990
- (d) August 1987

2. Answer in long (any three)

[10×3=30]

- I Define Agriculture Finance and their importance.**
- II Explain 4RS, plans in detail.**
- III Write a detail note on NABARD with their functions.**
- IV What do you understand by Credit? Also write down its different types, needs & importance.**

3. Answer in short (any Six)

[5×6=30]

- I Discuss about Agriculture credit in brief.**
- II Write a short note on Finance.**
- III What are the non- institutional sources of agriculture finance?**
- IV Write down the differences between Agriculture Finance and other sectors.**
- V What are the benefits of microfinance discuss in detail.**
- VI Briefly discuss about unfair practices by the money lenders.**
- VII Give a short note on IMF.**