G O A C O L L E G E O F A G R I C U L T U R E

Affiliated to Goa University

B. Sc. (Hons.) Agriculture

Midterm Examination

Academic Year: 2024-25 **Semester: IV**

Course No.: AGRO-246 **Course Title: Crop Production Technology – II (Rabi crops)**

Total marks: 30 (Section 'A'- 15 marks + Section 'B'- 15 marks)

Time: 11.15 to 12.35 p.m (Section 'A'- 20 min & Section 'B' – 1.0 hr)

Date: 17/02/2025 **Roll No:**

Note: 1) Use of laptop, mobile, smart watch is prohibited.

2) Draw neat labelled diagrams wherever necessary.

3) In Section 'A' all questions are compulsory.

4) Section 'A' should be answered in OMR sheet.

SECTION "A"

Multiple choice questions **(15Q x 1M =15 Marks)**

1. Seed rate of wheat under late sown condition
   A. 75kg/ha C. 125 kg/ha
   B. 100 kg/ha D. 175 kg/ha
2. 1st hybrid of sunflower released by India is
   A. BSH-1 C. Surya
   B. Morden D. DSH-1
3. Highest productivity of sugarcane in India is
   A. Tamil Nadu C. Uttarakhand
   B. Uttar Pradesh D. Andhra Pradesh
4. Species of Potato used for commercial cultivation of Potato
   A. *Solanum melongena* C. *Solanum nigrum*
   B. *Solanum tuberosum* D. *Solanum lycopersicum*
5. Which of the following intercultural operation is important in Chickpea?
   A. Nipping C. Retting
   B. B. Propping D. Desuckering
6. Which of the following is the most commonly cultivated wheat species in the world?
   A. *Triticum durum* C. *Triticum dicoccum*
   B. *Triticum aestivum* D. *Triticum monococcum*
7. Which species of sugarcane is known as "Noble Cane"?
   A. *Saccharum barberi* C. *Saccharum spontaneum*
   B. *Saccharum officinarum* D. *Saccharum sinense*
8. Which species of barley is primarily used for malt production?

P.T.O

A. *Hordeum vulgare*
B. *Triticum aestivum*
C. *Oryza sativa*
D. *Zea mays*

9. Where is the Indian Institute of Sugarcane Research (IISR) located?
   A. Coimbatore, Tamil Nadu
   B. Lucknow, Uttar Pradesh
   C. Pune, Maharashtra
   D. Karnal, Haryana
10. What is the special intercultural operation performed in sunflower to improve pollination and seed setting?
   A. Earthing up
   B. Thinning
   C. Roguing
   D. Hand pollination
11. What is the approximate percentage of protein content in pea (*Pisum sativum*)?
   A. 10-15%
   B. 15-20%
   C. 20-25%
   D. 25-30%
12. If only one irrigation is available for wheat, at which stage should it be applied?
   A. Booting stage
   B. Tillering stage
   C. Crown root initiation (CRI) stage
   D. Dough stage
13. What type of parasite is Striga found in jowar?
   A. Complete Stem parasite
   B. Complete Root parasite
   C. Partial Stem parasite
   D. Partial Root parasite
14. Which of the following physiological disorders found in potato?
   A. Hollow heart
   B. Black Heart
   C. Greening
   D. All of these
15. Which of the following oils is a rich source of linoleic acid?
   A. Coconut oil
   B. Palm oil
   C. Sunflower oil
   D. Butter

SECTION "B"

Answer any five questions **(5 X 3 = 15 Marks)**

Q1. Describe the cultivation practices of sugarcane with reference to the following aspects.
a) Seed and sowing b) Intercultural operation c) Harvesting and yield

Q2. Explain the cultivation practices of chickpea concerning the following aspects.
a) Seed and sowing b) Nipping c) Nutrient management

Q3. Describe the cultivation practices of wheat with reference to the following points.
a) Climate and soil b) Water management c) Weed management

Q4. Discuss the important agronomic practices involved in sunflower cultivation based on the following aspects.

a) Supplemental pollination b) Harvesting and yield c) Varieties

Q5. Write the cultivation practices of Potato by using following points.

a) Climate and soil b) physiological disorder c) Harvesting & yield

Q6. Prepare a leaflet on best cultivation practices for lentil production.

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G O A C O L L E G E O F A G R I C U L T U R E

Affiliated to Goa University

B. Sc. (Hons.) Agriculture

Midterm Examination

Academic Year: 2024-25 **Semester: IV**

Course No.: AGRO-247 **Course Title: Farming systems & Sustainable Agriculture**

Total marks: 40 (Section 'A'- 20 marks + Section 'B'- 20 marks)

Time: 3.00 to 04.25 p.m (Section 'A'- 25 min & Section 'B' – 1.0 hr)

Date: 21/02/2025 **Roll No:**

Note: 1) Use of laptop, mobile, smart watch is prohibited.

2) Draw neat labelled diagrams wherever necessary.

3) In Section 'A' all questions are compulsory.

4) Section 'A' should be answered in OMR sheet.

SECTION "A" (20Q x 1M =20 Marks)

Multiple choice questions

1. Which of the following is an example of a mixed farming system?
   A. Growing wheat and rice in alternate seasons
   B. Rearing dairy animals along with crop cultivation
   C. Practicing monocropping of maize
   D. Raising only poultry

2. Which farming system primarily focuses on market-oriented production?
   A. Subsistence farming
   B. Commercial farming
   C. Organic farming
   D. Shifting cultivation

3. In which farming system is slash-and-burn agriculture commonly practiced?
   A. Intensive farming
   B. Subsistence farming
   C. Shifting cultivation
   D. Terrace farming

4. What is the main purpose of integrated farming systems (IFS)?
   A. Increasing dependency on chemical inputs
   B. Enhancing farm sustainability by integrating crops, livestock, and other components
   C. Practicing monoculture for high production
   D. Reducing farm diversity

5. Which cropping system involves growing a second crop before harvesting the first crop?
   A. Sequential cropping
   B. Relay cropping

C. Intercropping
D. Monocropping

6. Extensive farming means…….
   A. Large areas with low input use and low yield per unit area
   B. High input use and high productivity per unit area
   C. Both A & B
   D. None of these

7. Alley cropping means ……...
   A. Growing crops in between two rows pf perennial leguminous crops
   B. Growing crops between rows of trees or shrubs
   C. Both A & B
   D. None of these

8. Cultivation of crops and rearing of livestock together known as……
   A. Inter cropping
   B. Mixed cropping
   C. Mixed farming
   D. Both A & B

9. Cultivation of mulberry plants is called as
   A. Bee keeping
   B. Sericulture
   C. Moriculture
   D. Both B & C

10. Which of the following is an example of fresh water fish?
   A. Catala
   B. Mrigal
   C. Rohu
   D. All of these

11. Which of the following sentence is related to subsistence farming?
   A. Farming for self-consumption with little or no surplus
   B. Small-scale agriculture focused on family needs.
   C. Traditional farming to meet household food requirements
   D. All of these

12. About ……. % of the total expenditure on poultry farming is spent on the poultry feed.
   A. 30-40
   B. 40-50
   C. 50-60
   D. 60-70

13. Which of the following is a component of farming system?
   A. Cropping & Animal husbandry
   B. Sericulture & Mushroom cultivation
   C. Vermicompost unit
   D. All of these

14. ……means the proportion of area under various crops at a point of time in a unit area.
    A. Cropping Pattern
    B. Cropping Scheme
    C. Cropping System
    D. None of these

15. Which of the following is an example of double cropping?
    A. Paddy – Wheat
    B. Paddy – Wheat – Green gram
    C. Paddy + Alsando
    D. Both A & B

16. The reason for mono-culture is……..
    A. The cultivators have no choice to cultivate many crops as holding is very small.
    B. The soil and climatic conditions do not permit successful cultivation of other crops.
    C. Both A & B
    D. To maintain fertility of soil

17. Which of the following statement is correct?
    A. Subsistence farming is primarily focused on producing crops for commercial sale.
    B. Shifting cultivation involves permanent use of agricultural land.
    C. Sequential cropping means planting multiple crops simultaneously in the same field.
    D. Nomadic herders move from one place to another in search of pasture and water for their livestock.

18. Which of the following is not an example of multi- storeyed cropping?
    A. Arecanut + Black Pepper + Pineapple
    B. Coconut + Banana + Ginger
    C. Groundnut + Soybean
    D. Both A & B

19. The farm on which 50 % or more than 50 % income is received from a single source known as a
    A. Specialized farming
    B. Diversified framing
    C. Mixed framing
    D. Mixed cropping

20. If intensity of rotation is between 33 to 66%; then it's which type of farming?
    A. Shifting cultivation
    B. Fallow farming
    C. Permanent cultivation
    D. Multiple cropping

SECTION "B"

Answer any five questions **(5 X 4 = 20 Marks)**

Q1. Define the farming system. Explain its scope in modern agriculture.
Q2. Classify farming system on the basis of size of farm and income
Q3. Enlist different components of farming system and explain any two.
Q4. Enlist types of cropping system and explain in short multiple cropping
Q5. Define crop rotation. Write its principles and advantages.
Q6. Classify farming system on the basis of Intensity of rotation and degree of commercialization.

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G O A C O L L E G E O F A G R I C U L T U R E

Affiliated to Goa University

B. Sc. (Hons.) Agriculture

Midterm Examination

Academic Year: 2024-25 **Semester: IV**

Course No.: AGRO-248 **Course Title: Principles of Organic Farming**

Total marks: 30 (Section 'A'- 15 marks + Section 'B'- 15 marks)

Time: 11.15 to 12.30 p.m (Section 'A'- 20 min & Section 'B' – 1.0 hr.)

Date: 18/02/2025 **Roll No:**

Note: 1) Use of laptop, mobile, smart watch is prohibited.

2) Draw neat labelled diagrams wherever necessary.

3) In Section 'A' all questions are compulsory.

4) Section 'A' should be answered in OMR sheet.

SECTION "A" (15Q x 1M =15 Marks)

Multiple choice questions

1. Organic farming is _____ production management system.
   A. Holistic C. Conventional
   B. Sustainable D. Data-driven
2. Father of modern organic farming is …….
   A. Sir Albert Howard C. F.H. King
   B. Rudolf Steiner D. L. North Bourne
3. Which of the following is not a principle of organic farming?
   A. Principles of Health C. Principles of Unity
   B. Principles of Care D. Principles of Ecology
4. National Centre of Organic Farming is located at _____.
   A. Faridabad C. New Delhi
   B. Ghaziabad D. Bangalore
5. Pradhan Mantri Krishi Vikas Yojna (PM-KVY) is a scheme related to ___.
   A. Increasing NUE C. Crop insurance
   B. Increasing WUE D. e-marketing
6. Who invented the Indore Method of composting?
   A. Rudolf Steiner C. Jethro Tull
   B. Albert Howard D. Justus von Liebig
7. The Bangalore Method of composting is:

A. Aerobic
B. Anaerobic
C. Both aerobic and anaerobic
D. Neither aerobic nor anaerobic

8. What is the full form of NPOP in organic farming certification?
   A. National Policy on Organic Products
   B. National Programme for Organic Production
   C. Natural Process of Organic Production
   D. National Plan for Organic Practices
9. Which of the following nutrients is commonly permitted in organic farming?
   A. Urea
   B. Rock Phosphate
   C. Ammonium Nitrate
   D. Superphosphate
10. Which of the following is NOT a permitted input in organic farming?
   A. Compost manure
   B. Green manure
   C. Ammonium nitrate
   D. Crop residues
11. Which was the first state in India to be declared fully organic?
   A. Sikkim
   B. Kerala
   C. Rajasthan
   D. Himachal Pradesh
12. Which of the following is a symbiotic nitrogen-fixing microorganism?
   A. Azotobacter
   B. Rhizobium
   C. Clostridium
   D. Cyanobacteria
13. Which of the following is a commonly used green manure crop?
   A. Sunflower
   B. Sesbania
   C. Maize
   D. Wheat
14. What does in-situ green manuring mean?
   A. Incorporating green manure crops grown in a different field
   B. Growing and plowing green manure crops in the same field
   C. Applying synthetic fertilizers along with green manure
   D. Using composted green manure from an external source
15. Which of the following earthworm species is commonly used for vermicomposting in India?
   A. Lumbricus terrestris
   B. Eisenia foetida
   C. Dendrobaena veneta
   D. *Pheretima posthuma*

SECTION "B"

Answer any five questions **(5 X 3 = 15 Marks)**

Q1. Define Organic Farming. Enlist its objectives and advantages.

Q2. Explain the key components of organic farming and discuss the major factors contributing to its low adoption.

Q3. Write in detail about National project on Organic Farming (NPOF) programme.

Q4. What is organic manure? Write about its classification with example.

Q5. Define: compost. Enlist the various methods of compost and write in detail about Indore method.

Q6. What are the pre-requisite factors required before selecting a crop and varieties in organic farming.

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GOA COLLEGE OF AGRICULTURE

Affiliated to Goa University

B. Sc. (Hons.) Agriculture
Midterm Examination

Academic Year: 2024-2025 **Semester: IV**

Course No.: AHDS 242 **Course Title: Livestock Breeding and Nutrition**

Total marks: 30 (Section 'A'- 15 marks + Section 'B'- 15 marks)

Time: 3.00 to 4.20 p.m (Section 'A'- 20 min & Section 'B' – 1.0 hr)

Date: 18/02/2025 **Roll No:**

Note: 1) Use of laptop, mobile, smartwatch is prohibited.
2) Draw neat labelled diagrams wherever necessary.
3) In Section 'A' all questions are compulsory.
4) Section 'A' should be answered in OMR sheet.

SECTION "A"

Q1. Multiple choice questions **(15Q x 1M =15 Marks)**

1. The term used for the hybrid produced from crossing of male donkey and female horse is called ……..

A. Mule B. Stallion C. Hinny D. Jack

2. The scientist who coined the term "chromosome" is ……..

A. Strasburger B. Waldeyer C. Ivanoff D. Bateson

3. The scientist who interpreted the genetic code is …….

A. Wilhelm Johanson B. Spallanzani C. Gobind Khorana D. Sampath Kumar

4. Study of chromosome and its abnormality is called ……..

A. Karyogenetic B. Cytokinesis C. Karyokinesis D. Cytogenetics

5. Each chromosomes are bound together by a specific proteins called as …….

A. Ribosomes B. Histones C. Centromeres D. Centrosomes

6. The Glycolysis pathway occurs in which part of the cell

A. Cell Membrane B. Mitochondria C. Cytoplasm D. Nucleus

7. Mating between closely related individuals is called ……..

P.T.O

A. Inbreeding B. Outbreeding C. Inbreeding Depression D. Heterosis

8. The type of mutation that causes change in the activity of the protein

A. Non-sense B. Silent C. Gene D. Mis-sense

9. The cell organelle that is involved in phagocytosis is …….

A. Peroxisomes B. Vacuoles C. Lysosomes D. Secretory vesicles

10. .....gives the complete profile of chromosomes

A. Cytotype B. Karyotype C. Chronotype D. Cytochrome

11. The proteins are produced in the ..... part of the cell

A. Nucleolus B. Endoplasmic Reticulum C. Ribosomes D. Golgi Apparatus

12. The type of mutation that affects only a small part of the DNA structure is called …….

A. Fractional mutation B. Transversion C. Gene mutation D. Translocation

13. The conversion of making a protein from mRNA is called ……

A. Gene expression B. Transversion C. Translation D. Transcription

14. Translation starts at which codon

A. UAG B. AUG C. UUG D. AUC

15. .....is the increase in certain characteristics of an offspring over its parents

A. Heterosis B. Heritability C. Compatibility D. Sire Index

SECTION "B" **(5Q X 3M = 15 Marks)**

Answer any five questions

Q1. Classify and explain the different methods of outbreeding

Q2. Explain in detail the process of Transcription and Translation

Q3. Write briefly on the different types of chromosomal aberrations

Q4. Short note on the different stages of mitosis

Q5. Difference between quantitative and qualitative traits

Q6. Brief on the history and concept of animal breeding

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GOA COLLEGE OF AGRICULTURE

Affiliated to Goa University
B.Sc. (Hons.) Agriculture
Midterm Examination

Academic Year: 2024-2025 **Semester: IV**
Course No: ECON 242 **Course Title: Agricultural Finance and Cooperation**
Total marks: 30 (Section A- 15 marks+ section B -15 marks)
Time: 11:15am-12:35pm (Section A -20 min + section B- 1 hour)
Date: 19/02/2025 **Roll No:**

Note:
1) Use of laptop, mobile, smart watch is prohibited.
2) Draw neat labelled diagrams wherever necessary.
3) In Section 'A' all questions are compulsory.
4) Section 'A' should be answered in OMR sheet

SECTION "A"

MULTIPLE CHOICE QUESTIONS. **(15Q x 1M = 15 Marks)**

1. Which types of loans are also called as Term Loans?
A. Long-term B. Medium-term C. Both medium-term and long-term D. Short-term
2. Short-term loans are also called as_____.
A. Self-liquidating B. Non liquidating C. Partially-liquidating D. None of these
3. Under which type, loan is provided to weaker sections at 4% per annum interest rate?
A. Individual approach B. Direct approach C. Area based approach D. *DIR* approach
4. Loans which are taken for purchase of tractors, pump sets, etc. are_____ loans.
A. Marketing B. Consumption C. Production D. Investment
5. Which among the following is not included in the 3 R's of Credit?
A. Returns from Investment B. Regional Climate
C. Risk Bearing Ability D. Repayment Capacity
6. Which one of the below mentioned 5 C's resembles the Repayment Capacity in 3 R's?
A. Capacity B. Character C. Capital D. Common Sense
7. Principles of Farm Finance are also called_____.
A. 3 R's of Credit B. 7 P's of Credit C. 5 C's of Credit D. None of these
8. The repayment period of Crop Loans is_____.
A. 6-18 months B. 18 months-5 years C. 5 years-more than 20 years D. 2-4 years
9. Balloon repayment plan is another name of_____.
A. Partial Repayment Plan B. Single Repayment Plan
C. Straight End Repayment Plan D. Amortized Repayment Plan
10. Crop Loans can be repaid with help of_____.

P.T.O

A. Partial Repayment Plan B. Single Repayment Plan
C. Variable Repayment Plan D. Amortized Repayment Plan

11. In Amortized Even Repayment Plan, the annual installment amount_____.

A. Increases B. Decreases C. Remains Constant D. First increases then decreases

12. 14 major commercial banks were nationalized in the first phase of nationalization of banks on_____.

A. 19 July, 1969 B. 19 September, 1979 C. 15 April, 1980 D. 01 April, 1935

13. The contribution of Central Government in the authorized share capital of RRB's was_____.

A. 50% B. 35% C. 100% D. 15%

14. Lead Bank Scheme came into force from_____.

A. 1975 B. 1969 C. 1989 D. 1992

15. First 5 Regional Rural Banks were set up on_____.

A. 02 October, 1975 B. 15 March, 1975 C. 12 July, 1982 D. 01 June, 1970

SECTION "B"

ANSWER ANY FIVE QUESTIONS. (5Q X 3M = 15 Marks)

Q1. Define the term Agricultural Finance. Discuss in brief about significance of Agricultural Finance.

Q2. Define Credit. Write in brief about the classification of credit based on time and purpose.

Q3. Give the causes of poor repayment capacity of Indian farmers and measures to strengthen the repayment capacity.

Q4. Explain in brief various steps in processing loan application.

Q5. Enlist various repayment plans. Explain in detail about amortized repayment plan.

Q6. Write in brief about the objectives and functioning of Regional Rural Banks (RRBs).

GOA COLLEGE OF AGRICULTURE

Affiliated to Goa University

B. Sc. (Hons.) Agriculture

MID-TERM EXAMINATION

Academic Year: 2024-25 **Semester: IV**

Course No.: ENGG-243 **Course Title: Renewable Energy & Green Technology**

Total Marks: 30 (SECTION 'A' -15 marks + SECTION 'B' -15 marks)

Time: 3.00 – 4.20 PM (SECTION 'A'- 20 min & SECTION 'B'- 1 hr)

Date: 19.02.2025 **Roll No:**

Note:

1) **Use of laptop, mobile smartwatch is prohibited**
2) **Draw neat labelled diagrams wherever necessary**
3) **In SECTION "A" all questions are compulsory**
4) **SECTION "A" should be answered in OMR sheet**

SECTION "A" (15 Q X 1 M = 15 Marks)

Multiple choice questions

1. What is the major limitation of solar energy?

A Causes air pollution

B Only practical in sunny areas

C Produces radioactive waste

D Expensive to transport

2. The calorific value of biogas is approximately:

A 3000 kcal/m^3

B 4800 kcal/m^3

C 4713 kcal/m^3

D 4000 kcal/m^3

3. Which material offers lower frictional loss in pipelines?

A Galvanized iron

B Aluminium

C Rigid PVC

D Copper

(P.T.O.)

4. The use of oversized implements in tractors leads to:

A Higher diesel consumption

B Increase in efficiency

C Reduction in smoke

D Increases time required

5. The process of converting vegetable oils to biodiesel is known as:

A Hydrogenation

B Transesterification

C Fermentation

D Combustion

6. In a downdraft gasifier, where does the producer gas exit?

A At the top

B Near the bottom

C At the middle

D From the sides

7. What type of gas holder is used in a KVIC biogas plant?

A Fixed dome

B Floating gas holder

C Balloon-type

D Horizontal drum

8. The hydraulic piston press is used in which type of briquetting technology?

A Low-pressure briquetting

B Medium-pressure briquetting

C High-pressure briquetting

D No-pressure briquetting

9. What type of gas holder is used in a Deenbandhu biogas plant?

A Floating drum

B Fixed dome

C Balloon-type

D Horizontal cylinder

0. In India, the agriculture sector consumes approximately what percentage of the total electricity consumption?

A 10-15 %

B 1 – 5 %

C 20-30 %

D 5-10 %

11. The chemical energy that is stored in plants and animals is known as _____

A Solar energy

B Biomass energy

C Geothermal energy

D Nuclear energy

12. The fuel produced from a gasifier is known as _____.

A Natural gas

B Producer gas

C LPG

D Petrol

13. Which type of gasifier operates at very high temperatures and requires water cooling?

A Updraft gasifier

B Downdraft gasifier

C Cross draft gasifier

D Fluidized bed gasifier

14. The four stages of gasification are drying, pyrolysis, combustion, and _____

A Liquefaction

B Reduction

C Oxidation

D Condensation

15. In an updraft gasifier, where does the producer gas exit?

A Near the bottom

B At the middle

C Near the top

D From the sides

SECTION "B"

Answer any five questions

(5 Q X 3 M = 15 Marks)

Q.1. Explain the stages of the gasification process

Q.2. What factors affect biogas production?

Q.3. Explain the process of ethanol production through dry milling.

Q.4. Discuss the various energy conservation measures in the agriculture sector.

Q.5. Enlist and explain various forms of energy.

Q.6. Explain KVIC Biogas plant with neat labelled diagram.

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G O A C O L L E G E O F A G R I C U L T U R E

Affiliated to Goa University

B. Sc. (Hons.) Agriculture
Midterm Examination

Academic Year: 2024-25 **Semester: IV**
Course No.: ENTO - 243 Course Title: Pest of Horticultural crops and their Management
Total marks: 30 (Section 'A'- 15 marks + Section 'B'- 15 marks)
Time: 11:15-12:35 p.m. **(Section 'A'- 20 min & Section 'B' – 1.0 hr)**
Date:20/02/2025 **Roll No:**

Note: 1) Use of laptop, mobile, smartwatch is prohibited.
2) Draw neat labelled diagrams wherever necessary.
3) In Section 'A' all questions are compulsory.
4) Section 'A' should be answered in OMR sheet.

SECTION "A"

(15Q x 1M =15 Marks)

Multiple choice questions/Match the pairs

1. Which of the following statement is not associated to fruit sucking moth
   A. Gulwel and vasanwel are larval host
   B. Adult moths suck the juice from the fruit
   C. Larva is the damaging stage
   D. Host plants are belonging to family rutaceae

2. Citrus canker is transmitted by ----------
   A. Citrus whitefly
   B. Citrus Aphids
   C. Citrus Thrips
   D. Citrus Leaf miner

3. Papaya mealybugs are controlled by ----------
   A. *Acerophagus papayae*
   B. *Cryptolaemus montrounzieri*
   C. *Epiricania melanoleuca*
   D. None of these

4. Which of the following symptom is not caused by Cashew stem and root borer
   A. Gummosis
   B. Extrusion of frass
   C. Yellowing of leaves
   D. Black scooty mould

5. Rhinoceros beetle is controlled by using----------
   A. Carbaryl 5 D
   B. *Metarhizium anisopliae*
   C. Diflubenzuron 0.2%
   D. All of these

P.T.O.

6. I. Mango hopper is seasonal pest
   II. Mango hopper secretes honeydew substance which develops black scooty mould locally known as **khar**
   A. Statement I is correct
   B. Statement II is correct
   C. Statement I is correct but II is not correct
   D. Both Statement I and II are correct

7. Oviposition site of mango fruit fly is ----------
   A. Soil
   B. Undersurface of leaves
   C. On tree trunk
   D. Beneath the rind of the fruit

8. Categories the infestation of pest red palm weevil in coconut
   A. Key pest
   B. Major pest
   C. Minor pest
   D. Potential pest

9. I. *Bactrocera dorsalis* is known as oriental fruitfly
   II *Bactrocera dorsalis* is attracted by cuelure
   A. Statement I is correct
   B. Statement II is correct
   C. Statement I is correct but II is not correct
   D. Both Statement I and II are correct

10. What kind of damage do the caterpillars of the citrus leaf miner cause to plants?
   A. They cause the fruit to rot and fall prematurely
   B. They mine the tender leaves, make zigzag galleries
   C. They chew through tree trunks
   D. They remove the bark from trees

11. Which of the following is a monophagous pest of Mango
   A. Mango stem borer
   B. Mango stone weevil
   C. Mango shoot borer
   D. Mango mealybug

Match the Pairs

12. *Aleurodicus dispersus*	A. Papaya mosaic
13. *Myzus persicae*	B. Eggs are laid in a spiral pattern
14. *Plocaederus ferrugineus*	C. Extrusion of frass through holes
15. *Tirathaba mundella*	D. Webbing and feeding the inflorescence

P.T.O

SECTION "B"

Answer any five questions

(5Q X 3M = 15 Marks)

Q1. Compare between nature of damage caused by Cashew stem borer and Mango stem borer.

Q2. Create integrated pest management schedule for Rhinoceros beetle.

Q3. Write a note on nature of damage and management of mango Fruit fly.

Q4. Elaborate bionomics, nature of damage and management of Tea mosquito bug

Q5. Enlist different pest of citrus and elaborate the management of Fruit sucking moth.

Q6. Elaborate integrated pest management module for Papaya mealybug and Papaya aphids

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GOA COLLEGE OF AGRICULTURE

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B. Sc. (Hons.) Agriculture

Midterm Examination

Academic Year: 2024-25 **Semester: IV**

Course No.: GPB 243 **Course Title: Principles of Seed Technology**

Total marks: 30 (Section 'A'- 15 marks + Section 'B'- 15 marks)

Time: 3.00 to 4.20 p.m. (Section 'A'- 20 min & Section 'B' – 1.0 hr)

Date: 20.02.2025 **Roll No:**

Note: 1) Use of laptop, mobile, smartwatch is prohibited.
2) Draw neat labelled diagrams wherever necessary.
3) In Section 'A' all questions are compulsory.
4) Section 'A' should be answered in OMR sheet.

SECTION "A" (15Q x 1M =15 Marks)

Multiple choice questions/match the pairs

1. Certification is not required for
   A) Breeder seed C) Foundation Seed
   B) Certified D) All of the above
2. In wheat, production of foundation seed needs an isolation distance of
   A) Three metres C) Five metres
   B) Ten metres D) Twenty metres
3. Process of removal of off types plants from the field of an improved variety to avoid contamination is known as …….
   A) Rouging C) Field distance
   B) Nipping D) Isolation distance
4. Maize is ……..nature of crop.
   A) Monoecious C) Dioecious
   B) Self-incompatibility D) Male sterility
5. Factors affecting deterioration of crop varieties
   A) Mutation C) Techniques of plant breeder
   B) Mechanical mixture D) All of the above
6. Foundation seed has physical purity of ……% in majority of crops.
   A) 98 % C) 100 %
   B) 70 % D) 60 %
7. Nucleus seed have …… tag colour.
   A) Blue C) White
   B) Green D) None of the above
8. Genetic purity is determined by …… test.
   A) Grow Out Test C) Physical Purity test
   B) Seed health test D) Moisture test
9. In O.P. varieties of maize, Foundation class seed production require isolation distance of …… metre for maintaining varietal purity.

A) 400 B) 200 C) 100 D) 50

10. In hybrid seed production involving male sterility, the plants of B line present in A line is termed as ……plants.
    A) Pollen shedder C) Volunteer plants
    B) Off type plants D) O.D. Plants
11. ……. is a product of fertilized ovule which consists of embryo, seed coat and cotyledons.
    A) Fruit C) Seed
    B) Flower D) Leaf

Match the pairs

Crop	**Isolation Distance (Foundation class)**
12. Green gram	A) 200 mt
13. Soybean	B) 400 mt
14. Sorghum	C) 10 mt
15. Pigeon pea	D) 3 mt

SECTION "B" (5 X 3 = 15 Marks)

(Answer any five questions)

Q1. Define seed Technology. Give Importance of Seed Technology.

Q2. Explain in brief different classes of seed.

Q3. How deterioration of crop varieties takes place and write down maintenance of genetic purity during seed production.

Q4. Write foundation and certified seed production of Pigeon pea on following points.

- **a)** Land requirements
- **b)** Isolation distance
- **c)** Brief cultural practices (Sowing, Seed rate, spacing etc)
- **d)** Harvesting and yield

Q5. Enlist different characters of good quality seed.

Q6. What are the different methods of developing hybrid seed production of rice ?

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GOA COLLEGE OF AGRICULTURE

Affiliated to Goa University

B. Sc. (Hons.) Agriculture

Midterm Examination

Academic Year: 2024-25 **Semester: IV**

Course No.: HORT-243 **Course Title: Production Technology for Fruit & Plantation crop**

Total marks: 30 (Section 'A'- 15 marks + Section 'B'- 15 marks)

Time: 3.00 to 04.20 p.m. (Section 'A'- 20 min & Section 'B' – 1.0 hr)

Date: 17.02.2025 **Roll No:**

Note: 1) Use of laptop, mobile, smartwatch is prohibited.
2) Draw neat labelled diagrams wherever necessary.
3) In Section 'A' all questions are compulsory.
4) Section 'A' should be answered in OMR sheet.

SECTION "A" (15Q x 1M =15 Marks)

Multiple choice questions/match the pairs

1. ……. is found in wild form in state of Assam.

A. *Mangifera similis*
B. *Mangifera khasiana*
C. *Mangifera andamanica*
D. *Mangifera odorata*

2. Mallika is hybrid of mango developed by crossing_____

A. Neelam x Alphonso
B. Neelam x Janardhan
C. Neelam x Dashehari
D. Dashehari x Neelam

3. Which of the following is use as a dwarfing root stock in Alphonso

A. Velloicolumban
B. Olour
C. Both
D. None of these

4. Which of the following banana *spp*. is used for paper & rope making .

A. *Musa sanjunia*
B. *Musa velity*
C. Both
D. None of these

5. Which of the following is a vector for spreading banana bunchy top disease

A. Banana whitefly
B. Banana thrip
C. Banana aphid
D. None of these

6. Which of the following crop is known as 'Tree of Heaven'

A. Mango
B. Banana
C. Coconut
D. Apple

7. Which of the following is dwarf variety of coconut

A. Bona
B. Lotan
C. Gudanjali
D. All of these

8. _____ is variety of arecanut is a selection from Singapore (VTL-17)

P.T.O

A. Sreemanagla
B. Mangala
C. Sumangala
D. CAL-7

9. Barren nut in coconut is due to…..
A. Boron deficiency
B. Potash deficiency
C. Defective fertilization
D. All of these

10. Smudging practice is followed in _____crop to produce off season fruits in Philippines.
A. Pomogranate
B. Ber
C. Guava
D. Mango

11. Coconut water is botanically known as _____
A. Endocarp
B. Epicarp
C. Endosperm
D. Mesocarp

Match the pairs

12. Leaf spot susceptible	A. W180
13. Famous cultivar of Gujrat	B. Amrapali
14. Priyanka	C. Gross Michael
15. High density Planting	D. Kesar

SECTION "B"

Answer any five questions

(5Q X 3M = 15 Marks)

Q 1. Explain mother palm, seed nut and seedling selection in coconut.

Q 2. Write a note on special intercultural operations in banana.

Q 3. Write in detail about importance and scope of fruit crops.

Q 4. Write in detail about processing in cashew nut.

Q 5.Write in detail about production technology in Mango on the following points

i) Soil & Climate ii) Propagation & Planting iii) Harvesting and Yield

Q 6. Write a short note

i) Processing in arecanut ii) Alternate bearing in Mango

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GOA COLLEGE OF AGRICULTURE

Affiliated to Goa University

B. Sc. (Hons.) Agriculture
Midterm Examination (course with Theory and Practical)

Academic Year: 2024-25 **Semester: IV**

Course No.:SSAC-242 **Course Title: Problematic soils and their management**

Total marks: 30 (Section 'A'- 15 marks + Section 'B'- 15 marks)

Time:11.15 to 12.35 pm (Section 'A'- 20 min & Section 'B' – 1.0 hr)

Date:21/02/2025 **Roll No:**

Note: 1) Use of laptop, mobile, smartwatch is prohibited.
2) Draw neat-labelled diagrams wherever necessary.
3) In Section, 'A' all questions are compulsory.
4) Section 'A' should be answered in OMR sheet.

SECTION "A"

(15Q x 1M =15 Marks)

Multiple choice questions/Match the pairs

1. Physical indicators of soil provide information about……..
   A. Soil Ph
   B. Buffering capacity
   C. Soil microorganism
   D. water holding capacity

2. Characteristics of healthy soil include
   A. Good soil tilth
   B. Insufficient supply of nutrients
   C. Large population of plant pathogens and insect pest
   D. Small population of beneficial organism

3. Acid soils are formed mainly due to acidic parent material
   A. Basalt
   B. Granite
   C. Limestone
   D. Sandstone

4. …….. toxicity is common in acid soil
   A. Mg
   B. Ca
   C. N
   D. Al

5. ……..acidity develops due to aluminium hydroxide ions (Al(OH)3-) and H+ and Al3+ ions tightly bound to organic matter and silicate clays.
   A. Active
   B. Exchangeable
   C. Total
   D. Residual

6. Microorganism dominant in acidic soil condition

A. Fungi
B. Bacteria
C. Actinomyctes
D. Viruses

7. Cat clay soils are also called as
A. Acid soil
B. Alkaine soil
C. Calacareous soil
D. Acid sulphate soil

8. Ec of saline soil is…….ds/m
A. >4 B. <4 C. >2 D. <2

9. SAR of alkaline or sodic soil is
A. >15 B. >13 C. <15 D. <13

10…….process is commom in saline soil
A. Alkalization
B. Braunification
C. Humification
D. Salinization

11. Ph measures …….acidity of soil
A. Active
B. Exchangeable
C. Residual
D. Potential

12. ESP of saline-sodic soil is
A. >13 B. >15 C. <13 D. <15

13. ……..is highly salt tolerant fruit crop
A. Cashew
B. Apple
C. Mango
D. Date palm

14. Chemical reclamation of acid soil is done by
A. Gypsum
B. Lime
C. Sulphuric acid
D. Aluminium sulphate

15. Extensive leaching of a saline-sodic soil occurs in the absence of any source of Ca or Mg, part of the exchangeable Na is gradually replaced by H^+ such soils are called as……soils.
A. Saline
B. Alkali
C. Acid sulphate
D. Degraded Alkali soil

P.T.O

SECTION "B"

Answer any five questions

(5Q X 3M = 15 Marks)

Q 1. Write in detail about chracteristics of saline soil, alkali soil and saline-alkali soil.

Q 2. Write in detail about formation of salt-afftected soil, types of land degradation and casues of land degradation.

Q 3. Explain in detail about types of soil acidity and enlist soil quality indicators with example.

Q 4. Write about management and reclamation practices for Saline soil and Acid soil

Q 5. Define soil health, define problematic soil and classify problematic soil based on physical and Chemical characteristics.

Q 6. Write down characteristics of Actual Acid Sulphate soil and Potential Acid Sulphate soil and describe factors involved in the formation of acid soil.

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GOA COLLEGE OF AGRICULTURE

Affiliated to Goa University

B. Sc. (Hons.) Agriculture

Midterm Examination (course with Theory and Practical)

Academic Year: 2024-2025 **Semester: IV**
Course No.: ELE EXTN 244 **Course Title: Agricultural Journalism**
Total marks: 30 (Section 'A'- 15 marks + Section 'B'- 15 marks)
Time: 1 hr 20min. (Section 'A'- 20 min & Section 'B' – 1.0 hr)
Date: 22/02/2025 **Roll No:**

Note: 1) Use of laptop, mobile, smartwatch is prohibited.
2) Draw neat labelled diagrams wherever necessary.
3) In Section 'A' all questions are compulsory
4) Section 'A' should be answered in OMR sheet.

SECTION "A"

(15Q x 1M =15 Marks)

Multiple choice questions

1. Journalism is the fourth pillar of .....
A.Democracy B. Judiciary C. Parliamentary D. Constitution

2. Broadcast journalism means .....
A.TV B. Radio C. SatComs D. All options correct

3. ..... was the first newspaper in India.
A.Kesari B. Bengal Gazette C. oHeraldo D. Times of India

4. *Krishi Jagran* is the popular example of agricultural .....
A. Newspaper B. Magazine C. TV Channel D. Radio station

5. In ABC of Journalism, B stands for .....
A.Brevity B. Broad C. Best D. Business

6. *Le Journal d' Agriculture* is one of the earliest known agricultural .....
A.Newspaper B. Radio channel C. Magazine D. Journal

7. In 1931, ... began publishing Agriculture and Livestock in India.
A. TNAU B. IARI C. ICAR D. UAS, Dharwad

P.T.O

8. ..... is expert support system with toll free no. 1800 180 1551.
A. AgriTouch B. ICARian C. *e-Choupal* D. *Kisan* Call centre

9. Best example of broadcast journalism in agriculture is .....
A.DD *Kisan* B. Agro One C. *Yojana* D. Agri.net

10. Popular *Konkani* news paper of Goa State is .....
A. oHeraldo B. *Tarun Bharat* C. *Bhangarbhui* D. All options correct

11. ..... is the best example of agriculture and rural development magazine.
A.*Yojana* B. *Kurukshetra* C. *Kheti* D. All options correct

12. Digital journalism utilize ..... source for its distribution & circulation.
A.Publication B. Broadcast C. Online D. Visual

13. Photojournalism in agriculture means utilisation of .....
A.Photos B. Pictures C. Illustrations D. All options correct

14. Newspaper reporting that emphasizes sensationalism, exaggeration is .....
A.Gold Journalism B. Yellow journalism C. Green Journalism
D. None

15. Agriculture Journalism covers ..... sectors for information circulations.
A.Horticulture B. Animal science C. Agriculture D. All options correct

SECTION "B"

Answer any five questions

(5Q X 3M = 15 Marks)

Q1. What is journalism ? Explain its scope and importance in agriculture.
Q2. Enlist types of journalism and explain any two of them.
Q3. What are career opportunities and challenges in agricultural journalism?
Q4. What is a journalist ? Enlist their characteristics.
Q5. Explain points to consider while writing for Newspaper & magazine as communication media.
Q6. Explain points to consider while covering an agricultural event as agri. journalist.

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GOA COLLEGE OF AGRICULTURE

Affiliated to Goa University

B. Sc. (Hons.) Agriculture

Midterm Examination

Academic Year: 2024-25 **Semester: IV**

Course No.: ELE GPB 244 **Course Title: Commercial Plant Breeding**

Total marks: 30 (Section 'A'- 15 marks + Section 'B'- 15 marks)

Time: 11.15 to 12.35 a.m. (Section 'A'- 20 min & Section 'B' – 1.0 hr)

Date: 22.02.2025 **Roll No:**

Note: 1) Use of laptop, mobile, smartwatch is prohibited.
2) Draw neat labelled diagrams wherever necessary.
3) In Section 'A' all questions are compulsory.
4) Section 'A' should be answered in OMR sheet.

SECTION "A" (15Q x 1M =15 Marks)

Multiple choice questions/match the pairs

1. The pollen sterility is controlled by cytoplasmic genes is called as…….
   A) CMS C) GMS
   B) CGMS D) All of the above
2. A foundation seed bags bears ……..colour labels.
   A) White C) Yellow
   B) Blue D) Green
3. For production of hybrid seed, A line kept as …….parent
   A) Male parent C) Female parent
   B) Full-sib parent D) Isolation distance
4. ……are limitations in using male sterility systems
   A) Synchronization of A and R lines
   B) Fertility restoration ability of R line
   C) Isolation distance for maintenance of parental lines
   D) All of the above
5. Breeder seed of Inbred line maintained by
   A) Isolation C) Field Inspection
   B) Roughing D) All of the above
6. ……..is examples of CAM plants
   A) Pineaaple C) Sisal
   B) Agave D) All of the above
7. ……are developed by continuous self-fertilization of a cross-pollinated species.
   A) Inbred lines C) Maintainer line
   B) Pure lines D) None of the above
8. The process of removal of off types plants from the field of an improved variety to avoid contamination is known as …….
   A) Roguing C) Field Inspection

B) Cutting D) All of the above

9. ……is progeny of breeder seed produced by National Seeds Carporation/ State Seeds Corporation.
   A) Nucleus seed C) Foundation seed
   B) Truthful seed D) None of the above
10. Photoperiod does not have much influence for phase change for these plants i.e flowering behaviour of plants is known as ……..
   A) Long day plants C) Short day plats
   B) Day neutral plants D) All of the above
11. The average performance of a strains in a series of hybrid combination is called as ……..
   A) GCA C) SCA
   B) Half sib D) Full sib

Match the pairs

	A	**B**
12.	Tap root crop	A) Wild abortive
13.	Adventitious root crop	B) Combined Kafir
14.	Sorghum	C) Rice
15.	Rice	D) Tur

SECTION "B" **(5Q X 3M = 15 Marks)**

(Answer any five questions)

Q1. Define male sterility. Enlist its different types. Give the limitations of using male sterility systems.

Q2. Define hybrid varieties. Briefly write the steps involved in for hybrid variety development.

Q3. Explain in brief the various factors responsible for loss of genetic purity during seed production.

Q4. Write the importance of classifying the crop plants. Give the agronomic classification of crop plant along with examples.

Q5. Write hybrid seed production in rice on following points.

a) Methods of hybrid seed production
b) Isolation requirement
c) Field inspection and rouging
d) Method of increasing out-crossing rate

Q6. State how to maintain newly released varieties in self-pollinated crops?

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GOA COLLEGE OF AGRICULTURE

Affiliated to Goa University
B. Sc. (Hons.) Agriculture
Midterm Examination

Academic Year: 2024-25 **Semester:** IV
Course No.: ELE PATH 243 **Course Title:** Biofertilizers, biocontrol agents and biopesticides
Total marks: 30 (Section 'A'- 15 marks + Section 'B'- 15 marks)
Time: 11:15 to 12:35 Section 'A'- 20 min & Section 'B' – 1.0 hr)
Date: 22/02/2025 **Roll No:**

Note: 1) Use of laptop, mobile, smartwatch is prohibited.
2) Draw neat labelled diagrams wherever necessary.
3) In Section 'A' all questions are compulsory.
4) Section 'A' should be answered in OMR sheet.

SECTION "A"

(15Q x 1M =15 Marks)

Multiple choice questions/Match the pairs

1. Which of the following nutrients is supplied by mycorrhizal fungi to its associate plants.

(A)Nitrogen (B) Phosphorus (C) Iron (D) Sulphur

2. Which of the following is NOT a form of nitrogen that plants can directly absorb?
(A) Nitrites (NO_2^-) (B) Ammonium (NH_4^+)
(C) Nitrate (NO_3^-) (D) Nitrogen gas (N_2)

3. Which structure in the VAM fungus helps in the exchange of nutrients between the fungus and plant roots?

(A) Hyphae (B) Arbuscules (C) Sporangia (D) Mycelium

4. The role of leghaemoglobin in Rhizobium nodules is to:

(A) Store nitrogen
(B) Maintain oxygen levels for bacteria and support nitrogenase activity
(C) Protect bacteria from pathogens
(D) Enhance photosynthesis in the plant

5. Rhizobia carry which type of genes that are essential for the initiation of nodules on legume roots?

(A) Nif genes (B) Nod genes
(C) Nitrogenase genes (D) Photosynthesis genes

6. The mechanism of biocontrol agent to control disease is:

(A) Parasitism and Lysis
(B) Antibiosis
(C) Competition
(D) All of the above

7. Which of the following microbial pesticides is effective against cotton bollworm?

(A) *Bacillus thuringiensis var. kurstaki*
(B) *Beauveria bassiana*
(C) *Metarhizium anisopliae*
(D) *Pseudomonas fluorescens*

Match the pairs

	Type/Nature of Habitat	**Examples**
8.	Free Living Aerobic	(A) Clostridium
9.	Symbiotic	(B) Azospirillum
10.	Associative Symbiotic	(C) Azotobacter, Beijerinckia
11.	Free living Anaerobic	(D) Rhizobium, Frankia

	Process	**Microbe involved**
12.	Nitrogen Fixation	(A) *Nitrosomonas ,*
13.	Nitrite is oxidized to Nitrate	(B) *Pseudomonas denitrificans*
14.	Denitrification	(C) *Rhizobium, Azotobacter*
15.	Ammonia is oxidised to Nitrite	(D) *Nitrobacter*

SECTION "B"

Answer any five questions

(5Q X 3M = 15 Marks)

Q1. Define Biopesticide. Write a short note on types of biopesticides

Q2. Write a short note on importance of using biofertiliser, biopesticides and biocontrol agents

Q3. Write a short note on use of *Rhizobium* as biofertiliser.

Q4. Write a short note on process of nodule formation.

Q5. Enlist the stages in nitrogen cycle. Give the importance of nitrogen cycle in nature.

Q6. Write a short note on a) Blue Green Algae b) Mycorhizae c) Plant growth promoting rhizobacteria (Any two)

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