

GOA COLLEGE OF AGRICULTURE

Affiliated to Goa University

B.Sc.(Hons.)Agriculture
Midterm Examination

Academic Year: 2025-26

Semester: V

Course No.: AHDS 353

Course Title: Technology of milk and milk products

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

Time: Section 'A'- 20 min & Section 'B' – 1.0 hr)

Date: 23/08/2025

Roll No:

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

SECTION "A"

(15Qx1M=15Marks)

Multiple choices questions

- The highest fat and solids not fat in milk is from
 - Buffalo
 - Cow
 - Camel
 - Goat
- The Refractive index of milk is used to detect
 - Adulteration
 - Boiling point
 - Freezing point
 - Surface tension
- The breed of cow that produce high volume of milk with lower fat is
 - Holstein Frisian
 - Jersey
 - Shweta Kapila
 - Konkan Kapila
- Milk that contains less than 0.5% fat is called
 - Skimmed Milk
 - Toned Milk
 - Double toned milk
 - Standardized milk
- The acid and heat coagulated milk product is
 - Paneer
 - Ghee
 - Kulfi
 - Butter
- Silos is a _____
 - Ghee Protein
 - Curd Protein
 - Milk Protein
 - Paneer Protein
- Casein is a _____
 - Storage of Ghee
 - Storage of Curd
 - Storage of Paneer
 - Storage of Milk

P.T.O.

Match the following

A

B

1. Lactose
2. Lactometer
3. Clot on Boiling
4. Bulk Mil Cooler

- (a) Pasteurization of Milk
- (b) Pearson's square method
- (c) 0-4 degree Centigrade
- (d) Uniform fat distribution

Match the following

A

B

1. Homogenization
2. Storage temperature of Milk
3. Standardization of Milk
4. Ultra High Temperature

- (e) Method of Chilling of Milk
- (f) Curdling
- (g) Water
- (h) Milk Sugar

SECTION B

Answer any five questions

(5Q X 3M = 15 Marks)

- Q1. Challenges faced in the Dairy Industry in India.
- Q2. Common Platform test for Milk
- Q3. Composition of Milk and its Nutritional importance.
- Q4. Microbial quality of Milk and factors affecting microbial Load.
- Q5. Fermented milk products
- Q6. Standards for different types of milk

GOA COLLEGE OF AGRICULTURE

Affiliated to Goa University

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

Academic Year:2025-26

Semester:V

Course No.: BOT-353

Course Title:Intellectual Property Rights

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

Time: Section 'A'- 25 min & Section 'B' – 1.0 hr)

Date:22/08/2025

Roll No:

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

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

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

SECTION "A"

All questions are compulsory

(20Q x 1M =20 Marks)

Multiple choice questions

- Which of the following organizations replaced GATT in 1995?
A. WTO B. TRIPS C. WIPO D. UNESCO
- Berne convention is related to _____.
A. Patent B. Copyright C. Trademarks D. Geographical indications
- The Madrid protocol deals primarily with _____ registration.
A. Trademark B. Patent C. Industrial design D. Trade secrets
- The Budapest Treaty deals with _____.
A. International trade B. Microorganisms C. Plant variety D. Trade secrets
- Which one of the following is the example of geographical indication?
A. Darjeeling tea B. Coca-cola logo C. WOS D. Industrial design
- Which act Governs Patents in India?
A. Copyright Act, 1957 B. Patents Act, 1970 C. Trademarks Act, 1999 D. Designs Act, 2000
- The current term for Patent in India is _____ yrs?
A. 20 B. 10 C. 15 D. 25
- Which International Agreement facilitates the filing of patent in multiple countries?
A. Berne convention B. Patent Cooperation Treaty C. WTO D. TRIPS
- IP stands for _____.
A. Intellectual property B. Indian Patent C. International Patent D. Indian property
- Intellectual property protects _____

A.Tangible goods B. Intangible creations C.Raw materials D. None of the above

11. Headquarters of WIPO is at _____

A.Geneva B.Paris C. London D.Rome

12.GATT was signed by 23 nations in Geneva in _____.

A.1950 B.1947 C. 1965 D.1970

13. Berne Convention was adopted in the year _____.

A.1880 B. 1886 C. 1883 D.1884

14.The Institute of Microbial Technology is the first Indian depository set up under Budapest Treaty in _____.

A.Chandigarh B.Chennai C. Delhi D. Punjab

15.Copyright in India is governed by Copyright Act, _____.

A. 1957 B.1956 C. 1958 D.1999

16.Where the trademark lies in unique representation of word, letter or numerical, it is called as _____ mark.

A.Word B.Device C.Collective D. Service

17. Geographical indication registry is located at ____.

A. Chennai B.Delhi C.Bangalore D. Bihar

18. Any person interested can make an application for grant of compulsory license for a patent after _____ years from the date of the grant of that patent.

A. 5 B.3 C. 4 D.10

19. _____ is Indias first Patent database hosted by TIFAC.

A.EKASWA B. Patentoscope C. Google Scholar D. All of the above

20. WTO was established on _____ 1995.

A. 11th January B. 1st January C.4th March D.13th December

SECTION "B"

Answer any five questions

(5Q X 4M = 20 Marks)

Q1. Define IPR, write advantages of IPR.

Q2. Define Patent and enlist and explain different types of patents.

Q3. Write down the procedure for filing a patent from patent office.

Q4. Define compulsory licensing and write advantages of compulsory licensing.

Q5. Write a short note on WTO and WIPO.

Q6. Enlist and explain different types of trademarks.

GOA COLLEGE OF AGRICULTURE

Affiliated to Goa University

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

Academic Year: 2025-26

Course No.: ECON-353

Semester: V

**Course Title: Agril. Marketing
Trade Policy**

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

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

Date: 23/08/2025

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)refer to size, design and operation of the market
A) Market integration B) Market performance C) Market structure D) Market conduct
- 2) Which of the following is not the P's of marketing mix
A) Price B) Priority C) Place D) Promotion
- 3) Goods are exchanged immediately after the sale of commodity is.....
A) spot market B) Forward market C) Capital market D) Secular market
- 4) Secondary markets are located at
A) Village B) Town C) District D) Seashore
- 5)..... integration wherein firm gain control of other firm which perform similar marketing function at same level.
A) Horizontal B) Vertical C) conglomeration D) Both A and B
- 6) FCI was established in
A) 1960 B) 1964 C) 1965 D) 1980
7. MSP is fixed by the recommendation of
A) CACP B) NABARD C) FCI D) NAFED
- 8) Quantity of the produce farmer actually sell in the market, irrespective of his requirement for family consumption, farm need and other payments.
A) Marketed surplus B) Marketable surplus C) Both A and B D) None

- 9) When the market is segmented based on age, gender, income, etc. it issegmentation
 A) Behavioral B) Geographic C) Demographic D) Psychographic
- 10) trading techniques of transferring the price risk
 A) Speculation B) Hedging C) Arbitrage D) None
- 11) Farmers requirement for consumption is 20kg, seed requirement is 5kg, livestock requirement is 10kg then what is the marketable surplus if farmer total production is 100kg.
 A) 20kg B) 50 kg C) 65 kg D) 75 kg
- 12). can be measured with probability.
 A) Risk B) Uncertainty C) Both A and D) None
- 13) In which stage of Product life cycle firm seeks to build product awareness, incurred high marketing and promotional expenses.
 A) Decline stage B) Growth stage C) Introduction stage D) maturity stage
- 14) full form of NAFED
 A) National Agricultural Federation of India
 B) National Agricultural Cooperative marketing federation of India
 C) National Agricultural Marketing federation of India
 D) National Agricultural Cooperative Federation of India
- 15) Share market is the example of
 A) General market B) Capital market C) Secular market D) Regional market

SECTION "B"

Answer any five questions

(5Q X 3M = 15 Marks)

- Q.1. Define Agricultural Marketing. Explain the importance of agricultural marketing in economic development.
- Q.2. What is market Segmentation. Explain the 4P's of marketing mix.
- Q.3. Define Market. Write the detail classification of market based on the time span.
- Q.4. What is marketable surplus. Explain the factors affecting the marketable surplus.
- Q.5. Explain the stages of product life cycle.
- Q.6. Define market integration. Explain the types of risk in marketing.

GOA COLLEGE OF AGRICULTURE

Affiliated to Goa University

B. Sc. (Hons.) Agriculture

Midterm Examination

Academic Year: 2025-26

Semester: V

Course No.: ENTO 354

Course Title: Pests of crops, stored grains and their
Management

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

Time: Section 'A'- 20 min & Section 'B' – 1.0 hr)

Date: 19/08/25

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)

- 1) *Epiricania melanoaleuca* isparasitoid of Sugarcane pyrilla
A. Larval C. nymphal adult
B. pupal D. larval pupal
- 2) Which of the following is not a polyphagous pest.
A. Paddy stem borer C. Fall army worm
B. Gram pod borer D. Termite
- 3) Pupation site for Gram pod borer.
A. Stem C. soil
B. leaves D. None of these
- 4) Vector for transmitting Pigeon pea sterility mosaic virus.
A. *Aceria cajani* C. *Tetranychus telarius*
B. *Aceria querreronis* D. *all of these*
- 5) Rice Caseworm belongs to family
A. Pyraustidae C. Gelechidae
B. Aphidae D. Apidae
- 6) Pupation site for Mustard Sawfly, though this pest does not belongs to family Noctuidae
A. Stem C. soil
B. leaves D. None of these
- 7) As many sucking pest act as a vector for transmitting various viral diseases in plants, who is serve as a vector for transmitting Tungro Virus in Paddy

- | | |
|----------------------|-----------------------|
| A. Aphids | C. Whitefly |
| B. Green leaf Hopper | D. Brown plant hopper |
- 8) Which insect belongs to order Hymenoptera is harmful to the crop?
- | | |
|------------------------------|----------------------------------|
| A. <i>Apis dorsata</i> | C. <i>Athalia lugens proxima</i> |
| B. <i>Apis cerana indica</i> | D. <i>Apis mellifera</i> |
- 9) Fish meal trap is used for controlling which of the following pest
- | | |
|---------------------|-------------------|
| A. Paddy stem borer | C. Fall army worm |
| B. Fruit fly | D. Shoot fly |
- 10) Vector of rosette disease in groundnut
- | | |
|----------------------------|------------------------|
| A. <i>Aphis craccivora</i> | C. <i>Aphis fabae</i> |
| B. <i>Aphis gossypii</i> | D. <i>Aphis maidis</i> |
- 11) Scientific name of Maize shoot fly
- | | |
|---------------------------------|------------------------------------|
| A. <i>Atherigona orientalis</i> | C. <i>Atherigona varia soccata</i> |
| B. <i>Aphis gossypii</i> | D. <i>Atherigona approximata</i> |

Match the Pairs

- | | |
|-----------------------|-----------------------------|
| 12) Sorghum shoot fly | A. Oviposition on leaf tip |
| 13) Rice Gundhi bug | B. Adult feeds on neem |
| 14) White grub | C. Maggots cause dead heart |
| 15) Rice stem borer | D. Chaffy grains |

SECTION 'B'

Answer any five questions

(5Q x 3M = 15 Marks)

- Q.1** Enlist all the pests of Sugarcane and write the Management practices for Borer complex.
- Q.2** Write down the Host plants, Damage symptoms and IPM practices for *Spodoptera litura*
- Q.3** Write in Detail about the Damage symptoms and IPM practices for *Helicoverpa armigera*
- Q.4** Differentiate the damage symptoms caused by yellow stem borer and Gundhi bug at reproductive stage of the crop.
- Q.5** Write down the scientific name, family, Order and Damage symptoms of Sorghum shoot fly and Midge fly.
- Q.6** List out any five parasitoid along with their host pest used in biological pest management

End of the paper

GOA COLLEGE OF AGRICULTURE

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

Academic Year: 2025-26

Semester: V

Course No.:GPB-355

Course Title: Crop Improvement-I(Kharif crops)

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

Time: Section 'A'- 20 min & Section 'B' – 1.0 hr)

Date:20/08/2025

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

- _____ are nothing but primitive cultivars which were selected and cultivated by the farmers for many generations without systematic plant breeding efforts.
A. Obsolete cultivars B. Land races C. Advance breeding lines D. All of the above
- The gene pool in which intermating is easy and leads to production of fertile hybrids is known as
A. GP1 B. GP2 C. GP3 D. GP4
- The mode of arrangement of sepals or petals in floral bud with respect to the other members of the same whorl is known as _____
A. Acclimatization B. Aestivation C. Hybridization D. Floral biology
- When sepals or petals in a whorl just touch one another at the margin, without overlapping, as in Calotropis, it is said to be _____
A. Valvate B. Imbricate C. Twisted D. Vexillary
- The pollen grains are produced in pollen-sacs. A sterile stamen is called _____.
A. Stamen B. Staminode C. Male sterility D. Self incompatibly
- When stamens are attached to the petals, they are called as _____.
A. Epipetalous B. Epiphyllous C. Monadelphous D. Polyadelphous
- Cleistogamy is observed in
A. Maize B. Barley C. Sunflower D. Cotton

8. Protogyny is observed in
A. Bajra B. Maize C. Linseed D. Cotton
9. _____ is an often cross-pollinated crop.
A. Green gram B. Cotton C. Maize D. Barley
10. The frequency with which a gene produces a phenotypic or visible effect in the individuals, which carry it, is known as _____.
A. Penetrance B. Modifying gene C. Expressivity D. Major gene
11. Pie bald spotting in rats is an example of _____ character.
A. Penetrant gene B. Qualitative C. Quantitative D. Modifying gene
12. _____ is an example of primary introduction in wheat.
A. Lerma Rojo B. IR8 C. IR64 D. Swarna
13. The process that leads to the adoption of a variety to a new environment is known as _____.
A. Aestivation B. Acclimatization C. Hybridization D. Adaptation
14. The concept of pure line was proposed by Danish botanist Johannsen in
A. 1903 B. 1902 C. 1901 D. 1900
15. Pure line is the homogeneous progeny of single self-pollinated _____ plant.
A. Homozygous B. Heterozygous C. Homogeneous D. Heterogeneous

SECTION "B"

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

- Q.1. Define Germplasm. Enlist and explain various types of Germplasm.
- Q.2. Define emasculation. Enlist and explain types of emasculation.
- Q.3. Define plant introduction and explain its types. Write disadvantages of plant introduction.
- Q.4. Enlist the mechanisms that promote self-pollination and cross pollination. Differentiate between qualitative and quantitative characters.
- Q.5. Explain Multiple factor hypothesis with an example.
- Q.6. Define pure line, pure line selection. Write about the advantages and disadvantages of pure line selection.

GOA COLLEGE OF AGRICULTURE

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

Academic Year:2025-26

Semester:V

Course No.: BOT-353

Course Title:Intellectual Property Rights

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

Time: Section 'A'- 25 min & Section 'B' – 1.0 hr)

Date:22/08/2025

Roll No:

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

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

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

SECTION "A"

All questions are compulsory

(20Q x 1M =20 Marks)

Multiple choice questions

- Which of the following organizations replaced GATT in 1995?
A. WTO B. TRIPS C. WIPO D. UNESCO
- Berne convention is related to _____.
A. Patent B. Copyright C. Trademarks D. Geographical indications
- The Madrid protocol deals primarily with _____ registration.
A. Trademark B. Patent C. Industrial design D. Trade secrets
- The Budapest Treaty deals with _____.
A. International trade B. Microorganisms C. Plant variety D. Trade secrets
- Which one of the following is the example of geographical indication?
A. Darjeeling tea B. Coca-cola logo C. WOS D. Industrial design
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A. Copyright Act, 1957 B. Patents Act, 1970 C. Trademarks Act, 1999 D. Designs Act, 2000
- The current term for Patent in India is _____ yrs?
A. 20 B. 10 C. 15 D. 25
- Which International Agreement facilitates the filing of patent in multiple countries?
A. Berne convention B. Patent Cooperation Treaty C. WTO D. TRIPS
- IP stands for _____.
A. Intellectual property B. Indian Patent C. International Patent D. Indian property
- Intellectual property protects _____.
A. Tangible goods B. Intangible creations C. Raw materials D. None of the above

11. Headquarters of WIPO is at _____.
A. Geneva B. Paris C. London D. Rome
12. GATT was signed by 23 nations in Geneva in _____.
A. 1950 B. 1947 C. 1965 D. 1970
13. Berne Convention was adopted in the year _____.
A. 1880 B. 1886 C. 1883 D. 1884
14. The Institute of Microbial Technology is the first Indian depository set up under Budapest Treaty in _____.
A. Chandigarh B. Chennai C. Delhi D. Punjab
15. Copyright in India is governed by Copyright Act, _____.
A. 1957 B. 1956 C. 1958 D. 1999
16. Where the trademark lies in unique representation of word, letter or numerical, it is called as _____ mark.
A. Word B. Device C. Collective D. Service
17. Geographical indication registry is located at _____.
A. Chennai B. Delhi C. Bangalore D. Bihar
18. Any person interested can make an application for grant of compulsory license for a patent after _____ years from the date of the grant of that patent.
A. 5 B. 3 C. 4 D. 10
19. _____ is India's first Patent database hosted by TIFAC.
A. EKASWA B. Patentoscope C. Google Scholar D. All of the above
20. WTO was established on _____ 1995.
A. 11th January B. 1st January C. 4th March D. 13th December

SECTION "B"

Answer any five questions

(5Q X 4M = 20 Marks)

- Q1. Define IPR, write advantages of IPR.
- Q2. Define Patent and enlist and explain different types of patents.
- Q3. Write down the procedure for filing a patent from patent office.
- Q4. Define compulsory licensing and write advantages of compulsory licensing.
- Q5. Write a short note on WTO and WIPO.
- Q6. Enlist and explain different types of trademarks.

GOA COLLEGE OF AGRICULTURE

Affiliated to Goa University

B. Sc. (Hons.) Agriculture Midterm Examination

Academic Year: 2025-26

Semester: V

Course No.: HORT 354

Course Title: Production Technology for Ornamental Crops, MAP and Landscaping

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

Section 'A' - 20 min & Section 'B' - 1.0 hr)

Time: 3.00 to 4.20 pm

Date: 20.08.2025

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

Q.1) _____ is queen of flower

A. Gladiolus B. Jasmine C. Rose D. Tuberose

Q.2) _____ state of India leads in flower production

A. West Bengal B. Karnataka C. Tamil Nadu D. Maharashtra

Q.3) Ayurveda believes in following principles

A. Trisdosha B. Panchabhutas C. Both A and B D. None of the above

Q.4) Directorate of floriculture is situated at _____

A. Bengaluru B. Pune C. Mumbai D. Hyderabad

Q.5) Diosgenin, is a secondary metabolite found in _____

A. Aloe vera B. Asparagus C. Costus D. All of the above

Q.6) Example of hedges are _____

A. Bougainvillea B. Coleus C. Portulaca D. Heliconia

Q.7) Floribunda is cross of _____

A. Polyantha x Hybrid Tea B. Hybrid Tea x Polyantha C. Perpetual x Hybrid Tea D. Hybrid Tea x Perpetual

Q.8) Dendrobium is _____ type of orchid

A. Monopodial B. Sympodial C. Bipodial D. Diplodial

Q.9) Gerbera is commercially propagated by _____

A. Hybrid B. Keikis C. Baby suckers D. Suckers

Q.10) _____ is rose breeder

A. BP Pal B. HP Singh C. KL Chadha D. MH Marigowda

Q.11) Arka Pride is variety of _____

A. Gladiolus B. Tuberose C. Rose D. Gerbera

Q.12) Stem break in gerbera is due to _____

A. Nitrogen deficiency B. Phosphorous C. Water Stress D. High temperature

Q.13) Fusarium wilt is major disease in _____

A. Carnation B. Gerbera C. Rose D. Costus

Q.14) _____ is preservative used for pretreatment of flower

A. STS B. KMnO₄ C. KMS D. NaCl

Q.15) Sonia is variety of _____

A. Rose B. Gerbera C. Rose D. Orchid

SECTION "B"

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

Q.1. Write short note on scope and importance of MAPs in India

Q.2. Write short note on value additions in ornamental crop

Q.3. Write package of practices of rose under protected cultivation with respect to the following points

a. Species of rose b. Pest management c. Harvesting

Q.4. Write package of practices of costus

Q.5. Explain the principles of Landscaping

Q.6. Write package of practices of carnation under protected cultivation with respect to the following points:

a. Green house conditions b. Intercultural practices c. Harvesting

GOA COLLEGE OF AGRICULTURE

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

Academic Year: 2025-26 Semester: V

Course No.: PATH-354

Course Title: Diseases of Field and Horticultural Crops and their Management-I

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

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

Date: 21/08/2025

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)

Answer the following

1. What is the causal organism of Blast disease of paddy?
(A) *Puccinia graminis tritici*
(B) *Pyricularia oryzae*
(C) *Rhizoctonia solani*
(D) *Pyricularia sativa*
2. Which of the following is the causal organism of Stalk rot of maize?
(A) Bacteria
(B) Phytoplasma
(C) Nematodes
(D) Fungus
3. Statements - (I) The nuclei from antheridium and oogonium fuse leading to karyogamy
(II) Oospore germinates to produce sporangium.
(A) Statement (I) is correct and statement (II) is false.
(B) Statement (II) is correct and statement (I) is false.
(C) Statements (I) and (II) are correct.
(D) Statements (I) and (II) are false.
4. The physical evidence of the presence of disease agent/causal organism is:

- (A) Symptom
- (B) Sign
- (C) Disorder
- (D) None of the above

5. What are the different types of spores produced by *Fusarium oxysporum f.sp. solani*

- (A) Microconidia and Chlamydoconidia
- (B) Macroconidia and Chlamydoconidia
- (C) Chlamydoconidia and Microconidia
- (D) Microconidia, Macroconidia and Chlamydoconidia

Match the pairs

- | | |
|-----------------------|---------------------|
| 6. G. N. Agrios | (A) Dithane – M45 |
| 7. Contact fungicide | (B) Streptomycin |
| 8. Systemic fungicide | (C) Plant Pathology |
| 9. Antibiotic | (D) Bavistin |

Identify

10. Identify the disease



- (A) Rust of sorghum
- (B) Black rust of sorghum
- (C) Rot of sorghum
- (D) Smut of sorghum

11. Identify the spores.



- (A) *Colletotrichum graminicolum* spores
- (B) Basidiospores
- (C) Ascospores
- (D) Pycniospores

12. Identify.



- (A) Vector for *Soybean mosaic virus*
- (B) Vector for bacterial diseases
- (C) Vector for Nematode diseases
- (D) Not a vector of any disease

Justify

13. Students are studying Plant pathology course PATH-354 indicating they are learning the following:
- (A) Only Etiology
 - (B) Only Symptoms and disease management
 - (C) Only Disease cycle
 - (D) Etiology, Symptoms, Disease cycle, Disease management
14. Disease management reduces crop yield losses, suggesting the following.
- (A) It will only increase crop yield.
 - (B) It will only increase crop yield and improve economic status of farmers.
 - (C) It will reduce the disease, increase crop yield and improve economic status of farmers and will be part of doubling the income of farmers.
 - (D) It will not have any effect on disease management and crop yield.
15. Insect pests should be controlled in field for disease management.
- (A) Because they only damage crops.
 - (B) Because they damage crops and transmit and spread the pathogens and diseases in field.
 - (C) Because they only transmit the disease.
 - (D) Because they have no significance in crop diseases.

**** End of Section A ****

SECTION “B”

Answer any five questions

(5Q X 3M = 15 Marks)

- Q1. Describe the sexual disease cycle of *Phytophthora sp* with a diagram. (1.5 M)
Describe the asexual disease cycle of *Phytophthora sp* with a diagram. (1.5 M)
- Q2. Write symptoms of Blast of Ragi/Finger millet. (1.0 M)
Write disease cycle of Blast of Ragi/Finger millet with diagram. (1.0 M)
Write management of Blast of Ragi/Finger millet. (1.0 M)
- Q3. Write etiology with causal organism of Downy mildew of bajra. (1.0 M)
Write symptoms of Downy mildew of bajra. (1.0 M)
Write management of Downy mildew of bajra. (1.0 M)
- Q4. Write etiology with causal organism of Blast of paddy. (1.0 M)
Write symptoms of Blast of paddy. (1.0 M)
Write management of Blast of paddy. (1.0 M)
- Q5. Write two causal organisms with scientific names of diseases of
a. Pigeon pea (1.0 M)
b. Black/Green gram (1.0 M)
c. Tobacco (1.0 M)
- Q6. Write names and authors of two Plant Pathology books. (1.0 M)
Name two fungal diseases and their host you observed in college campus. (1.0 M)
Write about use of plant pathology for farmers. (1.0 M)

GOA COLLEGE OF AGRICULTURE
Affiliated to Goa University
B. Sc. (Hons.) Agriculture
MID TERM EXAMINATION

Academic Year: 2025-26

Semester: V

Course No.: SSAC-353

Course Title: Manures, Fertilizers and Soil Fertility Management

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

Time: 3:00-4:20 PM (SECTION 'A'- 20 min & SECTION 'B'- 1.0 hr)

Date: 21-08-2025

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. C:N Ratio of soil is _____

- A. 10:1 to 12:1, B. above 100:1 C. 4:1 to 9:1 D. 20:1

2. Non edible oil cake is _____

- A. Castor oil cake B. Linseed cake C. Cotton cake D. none of the above

3. Bone meal is primarily used as a source of _____

- A. Nitrogen B. Potassium C. Phosphorus D. Magnesium

4. Earthworm used in Vermicomposting pit is _____.

- A. *Lumbricus rubellus* B. *Eisenia foetida*

- C. *Allobophora caliginos* D. *Azolla spp*

5. Green manure crops are buried in the field after ____.

- A. 6 to 8 week C. 6 to 10 week
B. 6 to 12 week D. none of the above

6. Rhizobium Biofertilizer is _____

- A. Symbiotic N fixer C. Non symbiotic N fixer
B. Associative symbiotic N fixer D. None of the above

7. VAM is the _____

A. Fungi B. Actinomycetes C. Phosphate absorber D. Bacteria

8. Ammonium fertilizer is _____

- A. Phosphatic fertilizers C. Potassic fertilizers
B. Nitrogenous fertilizers D. None of above

9. H_3PO_4 is called as _____

A. Phosphoric acid B. Phosphatic acid C. Phosphate D. Single super phosphat

10. Poultry meal is example of ____

- A. Concentrated organic manure B. Bulky organic manure
C. Organic manure D. None of above

11. SSP contain _____ P_2O_5

- A. 16 % B. 18% C. 19% D. 20%

12. Nitrate fertilizers are easily ____

- A. Leached C. Absorbed
B. Available D. Volatile

13. _____ Suggested that principle nourishment to plant was water and soil is only for supporting to plants.

- A. Francis Bacon B. Columella C. J Priestly D. Virgil

14. Ca, Mg, K are the _____.

- A. Metals C. Non metals Memory
B. Cations D. Anions

15. Farm compost is also called as _____

- A. Rural compost C. Town compost
B. Brown compost D. All of the above

SECTION "B"

Answer any five questions

(5 Q X 3 M = 15 Marks)

Q1. Define Soil fertility. Write importance of Organic matter and Give classification of Organic Manure with example.

Q2. Explain criteria for essentiality. Distinguish between beneficial and essential nutrients with examples.

P.T.O

Q3. Define fertilizers. Classify them and explain phosphatic fertilizers with one example.

Q4. Define C:N Ratio. Explain significance of C:N Ratio. Give advantages of Manure and disadvantages of fertilizers.

Q5. Enlist production technologies of SSP and TSP. Explain any one process.

Write advantages and disadvantages of green manuring crops.

Q6. Write Short notes on (Any Two)

1. Biogas plant slurry
2. Method of composting
3. Deficiency symptoms of Nitrogen and Potassium

GOA COLLEGE OF AGRICULTURE

Affiliated to Goa University

B. Sc. (Hons.) Agriculture

Midterm Examination

Academic Year: 2025-2026

Semester: V

Course Title: Entrepreneurship development & business communication

Course No.: EXTN 355 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: 19/08/2025

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"

(15 Marks)

Q. Multiple choice questions

1. An individual who initiates, organizes, and manages a business venture, taking on both the risks and rewards, is known as a(n):

- | | |
|-----------------|-------------|
| A. Entrepreneur | B. Manager |
| C. Investor | D. Employee |

2. Which of the following is considered a key characteristic of an entrepreneur?

- | | |
|-------------------------------|------------------------------|
| A. Following a fixed schedule | B. Risk aversion |
| C. High dependence on others | D. Innovation and creativity |

3. A detailed written document that describes the nature of the business, its sales and marketing strategy, and the financial background is called a:

- | | |
|-------------------|----------------------|
| A. Business plan | B. Market analysis |
| C. Project report | D. Feasibility study |

4. What is a major difference between a small business and a startup?

- | | |
|---|---------------------------------------|
| A. Startups operate in the technology sector | B. Small businesses don't need a plan |
| C. Startups have rapid growth and scalability | D. Small businesses aren't profitable |

5. The process of a business creating a new product, service, or process that is valuable to the market is called:

- | | |
|---------------|---------------|
| A. Innovation | B. Accounting |
| C. Management | D. Marketing |

6. Which type of entrepreneur works for the well being of the society to develop improved lives or projects?

- | | |
|------------------|------------------------|
| A. Technopreneur | B. Solo entrepreneur |
| C. Intrapreneur | D. Social entrepreneur |

7. The most common reason for a startup to fail is:

- | | |
|----------------|-------------------|
| A. Competition | B. Poor marketing |
|----------------|-------------------|

- C. Lack of funding
D. A great idea with no market need
8. Which of the following is an example of an internal factor that influences entrepreneurship?
A. Availability of raw materials
B. Government policies and regulations
C. Economic conditions of the country
D. Personal motivation and passion
9. The primary goal of an entrepreneur is to:
A. Avoid all financial risks.
B. Create & grow a profitable business.
C. Minimize competition in the market.
D. Secure a steady 9-to-5 job.
10. What is the primary purpose of advertising?
A. To increase the cost of goods.
B. To confuse potential customers.
C. To inform, persuade, and remind a target
D. To hide information of a product.
11. Which of the following is considered an advertising medium?
A. The price of the product.
B. The target customer.
C. A newspaper.
D. The salesperson's uniform.
12. In a SWOT analysis, which of the following is considered an “internal” factor?
A. Political regulations
B. Strengths
C. Threats
D. Opportunities
13. Which component of a SWOT analysis focuses on favorable external factors that a business can use to its advantage?
A. Threats
B. Opportunities
C. Weaknesses
D. Strengths
14. Who coined the entrepreneur term?
A. Christopher Columbus
B. Marco Polo
C. Richard Cantillon
D. Karl Marx
15. What is the very first step in the process of project formulation?
A. Project appraisal
B. Project implementation
C. Project identification
D. Financial analysis

SECTION “B”

(5Q X 3M = 15 Marks)

Solve any five questions

- Q1.** What is an entrepreneur? Explain the key characteristics of a successful entrepreneur.
- Q2.** Briefly explain various government schemes and programs for entrepreneurship development.
- Q3.** Explain the common types of market surveys, providing suitable examples for each.
- Q4.** Conduct a SWOT analysis for the agro-processing industry, with a specific focus on the state of Goa.
- Q5.** List various entrepreneurship skills. Briefly explain the importance of leadership skills for entrepreneurs.
- Q6.** Explain the key elements/ components of an advertisement for print media.

GOA COLLEGE OF AGRICULTURE

Affiliated to Goa University

B. Sc. (Hons.) Agriculture

Midterm Examination

Academic Year: 2025-26

Semester: V

Course No.: ELE AGRO-3510

Course Title: Weed management (Elective)

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

Time: 3.00 to 4.20 pm Section 'A'- 20 min & Section 'B' – 1.0 hr)

Date: 22/08/25

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

- Which characteristic of weeds helps them to dominate crop fields rapidly?
A. High water requirement
B. Prolific seed production
C. High nutrient requirement
D. All of these
- Which of the following is a mimicry weed commonly found in rice fields?
A. *Phalaris minor*
B. *Avena fatua*
C. *Echinochloa crus-galli*
D. *Parthenium hysterophorus*
- Which of the following weed shows all three kinds of dormancy?
A. *Phalaris minor*
B. *Avena fatua*
C. *Echinochloa crus-galli*
D. *Parthenium hysterophorus*
- Which of the following weed produces 1,96,000 seeds per plant?
A. *Amaranthus spp.*
B. *Cuscuta spp.*
C. *Chenopodium album*
D. *Portulaca spp.*
- Weeds are responsible for approximately what percentage of agricultural production losses in India?
A. 15%
B. 25%
C. 45%
D. 60%

6. Which of the following weeds acts as an alternate host for black rust (*Puccinia graminis*) of wheat?
 - A. *Cyperus rotundus*
 - B. *Agropyron repens*
 - C. *Echinochloa crus-galli*
 - D. *Chenopodium album*
7. Which of the following weeds is useful in the reclamation of alkali soils?
 - A. *Cyperus rotundus*
 - B. *Parthenium hysterophorus*
 - C. *Argemone Mexicana*
 - D. *Eichhornia crassipes*
8. Which of the following is an example of Ephemeral weed?
 - A. *Cyperus rotundus*
 - B. *Parthenium hysterophorus*
 - C. *Argemone Mexicana*
 - D. *Phyllanthus niruri*
9. Weeds introduced from other countries called....
 - A. Alien weeds
 - B. Anthrophytes
 - C. Exotic weeds
 - D. All of these
10. The mechanism of weed seed dispersal through animals, in which seeds pass through the digestive tract and are excreted with dung, is called:
 - A. Anemochory
 - B. Hydrochory
 - C. Epizoochory
 - D. Endozoochory
11. The dispersal of seeds in *Argemone mexicana* occurs through the censor mechanism, which works by:
 - A. Floating seeds on water to reach new areas
 - B. Wind shaking dry capsules to release seeds through small pores
 - C. Explosive bursting of fruits to scatter seeds
 - D. Attachment of seeds to animal bodies for transport
12. Glyphosate is an example of which type of herbicide?
 - A. Selective herbicide
 - B. Non-selective herbicide
 - C. Residual herbicide
 - D. Contact herbicide
13. Which of the following is an example of a foliage-active herbicide?
 - A. Pendimethalin
 - B. 2,4-D
 - C. Atrazine
 - D. Alachlor
14. What is the primary function of adjuvants in herbicide application?
 - A. To improve herbicide selectivity to the non-targeted plants.
 - B. To increase toxicity on target plants i.e. weeds.
 - C. To reduce herbicide drift hazard.
 - D. All of these
15. In granular herbicide formulations, the active ingredient content is generally up to:

- A. 5%
- B. 10%

- C. 20%
- D. 50%

SECTION “B”

Answer any five questions

(5 X 3 = 15 Marks)

- Q1.** Define weed. Enlist characteristics of weeds.
- Q2.** Classify weeds on the basis of lifecycle and origin with example.
- Q3.** Enlist the agents of weed seed dispersal. Explain in brief the dispersal of weeds by wind with examples.
- Q4.** Classify the herbicide based on selectivity and time of application with example.
- Q5.** Describe in detail the various types of losses caused by weeds in agriculture.
- Q.6** Write in short, the types of herbicide formulations.

GOA COLLEGE OF AGRICULTURE

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

Academic Year: 2025-26
Course No.: ELE ECON 354

Semester: V
**Course Title: Agribusiness
Management**

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

Time: 3.00pm -4.20 pm (Section 'A'- 20 min & Section 'B' – 1.0 hr)

Date:22/08/2025

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) Agro industries which are engaged in repairing and servicing of farm equipment are
 - A) Agro-produce processing units
 - B) Agro-produce manufacturing units
 - C) Agro-inputs manufacturing units
 - D) Agro service centers
- 2)is the last stage of project
 - A) Monitoring
 - B) Implementation
 - C) Formulation
 - D) Evaluation
- 3) Things which are owed to others by the farmers are
 - A) Assets
 - B) Liabilities
 - C) both A and B
 - D) None
- 4) Establishment year of NABARD
 - A) 1980
 - B) 1982
 - C) 1992
 - D) 1972
- 5) What is T indicating in SWOT analysis
 - A) Technique
 - B) Threats
 - C) Test
 - D) Tabular
- 6) Full form of FCI
 - A) Food Company of India
 - B) Fruit Cooperation of India
 - C) Food Cooperation of India
 - D) Food Corporation of India
- 7) When the assets are more than liabilities it is called as
 - A) Equity
 - B) Net Deficit
 - C) Negative balance
 - D) None

- 8) Spinning mills is the example of which type of Industry
 A) Forest based B) Textile C) Food Processing D) None
- 9) In which stage of PLC the firm seeks to build brand preference and increase market share.
 A) Introduction B) Maturity C) Growth D) Decline
- 10) Internal rate of return (IRR) is discount rate at which NPW is
 A) 0 B) 1 C) 6 D) 12
- 11) strategy where a product or service is priced higher than the average market price to create a perception of high quality, exclusivity, or luxury.
 A) Discount pricing B) competitive pricing C) premium pricing D) None
- 12) When the market is segmented based on based on lifestyle, values, personality, etc. it is segmentation
 A) Behavioral B) Geographic C) Demographic D) Psychographic
- 13) Market saturation is observed instage of Product life cycle (PLC).
 A) Introduction B) Maturity C) Growth D) Decline
- 14) land is the example of.....
 A) current asset B) current liability C) long term asset D) long term liability
- 15) Total negative impact a project has on society, encompassing not only the direct costs but also the indirect costs borne by the community and the environment is
 A) Social cost B) Associate cost C) Primary cost D) Nominal cost

SECTION "B"

Answer any five questions

(5Q X 3M = 15 Marks)

- Q.1. Define Agribusiness Management. Explain its scope and importance
- Q.2. Explain the project cycle.
- Q.3. What is balance sheet? explain its components.
- Q.4. Give the procedure to set up Agro-based industry
- Q.5. Enlist the 4P's of marketing mix. Explain the importance of market segmentation
- Q.6. Define Project. Explain the types of Agricultural Projects

GOA COLLEGE OF AGRICULTURE

Affiliated to Goa University

B. Sc. (Hons.) Agriculture Midterm Examination

Academic Year: 2025-26

Semester: V

Course No.: ELE HORT 355

Course Title: Protected Cultivation of
Horticultural Crops

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

Time: Section 'A'- 20 min & Section 'B' – 1.0 hr)

Date: 22/08/2025

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

- Efficiency of Incandescent lamp (Turysten-Filament) ----- is %
A. 9
B. 10
C. 8
D. 7
- _____ green house is placed against the side of an existing building
A. Saw tooth type
B. Quonset type
C. Even span type
D. Lean to type
- The greenhouse span for pipe framed structures is around _____
A. 14 mt
B. 10 mt
C. 15 mt
D. 12 mt
- Widely used propagation structures in tropical areas is _____
A. Shade House
B. Naturally ventilated polyhouse
C. Environmentally control polyhouse
D. Net house
- Insulated building from which natural light is excluded is _____
A. Automatic green house
B. Shade home
C. polyhouse
D. Growing rooms
- Usable life of ideal greenhouse covering material is _____
A. 5 to 10 years
B. 10 to 20 years
C. More than 20 years
D. Less than 5 years
- Plastic greenhouses is popular due to _____
A. low cost
B. Absorbs sufficient Heat
C. Comparable in quality with other structures
D. All of the above

8. The green house has to be designed for maximum _____ kg/m² of live load
 - A. 10
 - B. 20
 - C. 12
 - D. 15
9. _____ system is developed to reduce the problem of excessive heat in the greenhouse
 - A. Fog cooling
 - B. Fan & pad
 - C. A&B (Both)
 - D. None of the above
10. EC level of _____ to _____ ds/m is optimum for most of the greenhouse crops
 - A. 4 to 11.4
 - B. 40 to 114
 - C. 0.4 to 1.4
 - D. 1.4 to 2.4
11. pH less than 5 tend to toxicity of _____
 - A. Nitrogen
 - B. Calcium
 - C. Iron
 - D. Phosphorous
12. Optimal light levels for given species varies with _____
 - A. plant age
 - B. plant spacing
 - C. nutritional level
 - D. All of the above
13. Pasteurization of greenhouse plant growing media is done by using _____
 - A. methyl bromide
 - B. chloropicrin
 - C. Heat
 - D. All of the above
14. Disinfectant placed at the entry of the green house _____
 - A. Potassium permanganate
 - B. trisodium phosphate
 - C. A & B
 - D. None of the above
15. Containers used in greenhouse production for _____ activities
 - A. For cut flower production
 - B. Hybrid seed production
 - C. Potted ornamental plants
 - D. All of the above.

SECTION "B"

Answer any five questions

(5Q X 3M = 15 Marks)

- Q1. Define a green house and explain the importance of greenhouse?
- Q2. Define protected cultivation practice and explain the classification of greenhouse based on shape?
- Q3. Enlist different types of cladding material used in greenhouse howe and explain properties of ideal greenhouse covering material?
- Q4. Explain controlling of light in green house?
- Q5. Write short notes on physical & chemical properties of media used in green house?
- Q6. Explain environmental control in polyhouse?

