

MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END EXAMINATION

B.Sc.(Hons.) Agriculture

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|----------------------------------|--------------------------------------|-------------------------|
| Semester : I (New) | Term : I | Academic Year : 2019-20 |
| Course No. : HORT 111 | Title : Fundamentals of Horticulture | |
| Credits : 2(1+1) | Time : 10.00 to 12.00 | Total Marks : 40 |
| Day & Date : Tuesday, 07.01.2020 | | |

- Note :
1. Solve ANY EIGHT questions from SECTION "A".
 2. All questions from SECTION "B" are compulsory.
 3. All questions carry equal marks.
 4. Draw neat diagrams wherever necessary.

SECTION "A"

- Q.1 Define horticulture. Discuss about importance and scope of horticulture.
- Q.2 What are the methods of irrigation in fruit crops? Explain about drip irrigation.
- Q.3 Write short notes. (Any Two)
- a) Classification of horticultural crops based on climate
 - b) Aromatic plants
 - c) Spices and condiments
- Q.4 Define kitchen garden. Explain in brief its objectives and design.
- Q.5 Define plant propagation. Discuss in brief about merits and demerits of asexual method of propagation.
- Q.6 What do you mean by training? Write its methods and explain about any one of them.
- Q.7 What are the different methods of planting system of fruit orchard and explain square system of planting with advantages and disadvantages.
- Q.8 Define unfruitfulness. Enlist internal and external causes of unfruitfulness.
- Q.9 What is lawn? Narrate the different methods of lawn and explain in brief about turfing method.
- Q.10 Enlist different climatic factors for growing fruit orchard. Explain in brief about temperature and rainfall.

SECTION "B"

- Q.11 Define the following terms.
- 1) Parthenocarpy
 - 2) Pruning
 - 3) Fertigation
 - 4) Fertilization
- Q.12 Do as directed.
- 1) Name one recommended book for course with author.
 - 2) Write the two grades of fertilizers.
 - 3) Name of one propagating structures.
 - 4) Write name of one root stock of citrus crop.



MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END EXAMINATION

B.Sc.(Hons.) Agriculture

| | | |
|------------------------------------|-----------------------------------|-------------------------|
| Semester : I (New) | Term : I | Academic Year : 2019-20 |
| Course No. : MIBO 111 | Title : Introductory Microbiology | |
| Credits : 2(1+1) | Time : 10.00 to 12.00 | Total Marks : 40 |
| Day & Date : Wednesday, 08.01.2020 | | |

- Note :
1. Solve ANY EIGHT questions from SECTION "A".
 2. All questions from SECTION "B" are compulsory.
 3. All questions carry equal marks.
 4. Draw neat diagrams wherever necessary.

SECTION "A"

- Q.1 Define Microbiology. Explain importance and scope of microbiology in Agriculture and allied fields with suitable examples.
- Q.2 Define Mycorrhiza. Write its types and benefits to plants.
- Q.3 Draw a neat labeled diagram of bacterial cell. Enlist various internal and external structures. Comment on pili.
- Q.4 Write comparison between prokaryotic and eukaryotic cells.
- Q.5 What is genetic recombination? Enlist different modes of gene transfer in bacteria and explain conjugation in bacteria.
- Q.6 a) Define biofertilizer and enlist its types with examples.
b) Enlist methods of application of biofertilizers and explain in detail any one.
- Q.7 Explain in detail the Nitrogen cycle.
- Q.8 Define rhizosphere. Describe in detail the factors affecting microflora of rhizosphere.
- Q.9 Explain the importance of single cell protein.
- Q.10 Write short notes. (Any two)
a) Bacterial insecticide
b) Biodegradation of organic waste
c) Cultivation of paddy straw mushroom

SECTION "B"

- Q.11 Write contribution of the following scientists.
1) Robert Koch
2) Winogradsky
3) Alexander Fleming
4) Antony Van Leeuwenhoek
- Q.12 Answer in one sentence.
1) Which gas is produced in methanogenesis?
2) Define biotroph.
3) Which part of bacterial cell is involved in protein synthesis?
4) Matchstick like cell grouping in bacteria is called _____.

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SEMESTER END EXAMINATION

B.Sc. (Hons.) Agriculture

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|---------------------------------|---|-------------------------|
| Semester : I (New) | Term : I | Academic Year : 2019-20 |
| Course No. : AHDS 111 | Title : Livestock Production and Management | |
| Credits : 2(1+1) | Time : 10.00 to 12.00 | Total Marks : 40 |
| Day & Date : Monday, 06.01.2020 | | |

- Note :
1. Solve ANY EIGHT questions from SECTION "A".
 2. All questions from SECTION "B" are compulsory.
 3. All questions carry equal marks.
 4. Draw neat diagrams wherever necessary.

SECTION "A"

- Q.1 Enlist different livestock development programmes in Indian context. Explain in brief Milk and Milk Products Order (MMPO).
- Q.2 Describe in detail the factors affecting breeding efficiency (Fertility) in cows.
- Q.3 Write in detail care and management of calf. Enlist systems of milk feeding to calf with its merits and demerits.
- Q.4 What is species? Classify Indigenous breeds of cattle according to their utility with suitable examples.
- Q.5 Enlist the bacterial diseases of cattle. Explain in detail Foot and Mouth disease.
- Q.6 Explain in detail reproductive system of cow with neat labelled diagram.
- Q.7 Write short notes.
- a) Draw well labelled diagram of duct system in one quarter of the mammary gland of the cow with a single lobe
- b) Symptoms/signs of oestrus in crossbred cows
- Q.8 Describe in detail body characters and milk yield of following breeds.
- a) Dangi
- b) Holstein Friesian
- Q.9 Elaborate the impact of climate change on livestock reproduction.
- Q.10 What is origin and use of following breeds of buffaloes?
- a) Pandharpuri b) Murrah c) Jaffarabadi d) Mehsana

SECTION "B"

- Q.11 Define the following terms.
- 1) Teaser 2) Calving interval 3) Bull 4) Dry period
- Q.12 Fill in the blanks.
- 1) The funnel shape portion of the oviduct is called _____.
- 2) _____ is a highly contagious, infectious respiratory disease that is caused by Bovine Herpesvirus-1 (BHV-1).
- 3) Livestock census started in India in the year _____.
- 4) The younger female of cattle above age of six months to first calving is called _____.



MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END EXAMINATION

B.Sc.(Hons.) Agriculture/ A.B.M./ B.Tech. (Bio-Technology)

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|------------|----------------------|-------|---|---------------|-----------|
| Semester | : 1 (New) | Term | : I | Academic Year | : 2019-20 |
| Course No. | : HVE 111/HD 111 | Title | : Human Values and Ethics/ Human Ethics | | |
| Credits | : 1(1+0) | Time | : 10.00 to 12.00 | Total Marks | : 40 |
| Day & Date | : Friday, 03.01.2020 | | | | |

- Note :
1. Solve ANY EIGHT questions from SECTION "A".
 2. All questions from SECTION "B" are compulsory.
 3. All questions carry equal marks.
 4. Draw neat diagrams wherever necessary.

SECTION "A"

- Q.1 What do you mean by stress? Explain techniques to overcome it.
- Q.2 What is SWOT? Analyze your SWOT with examples.
- Q.3 Define team work. Write the good reasons of team work.
- Q.4 What is attitude? Explain the benefits of positive attitude.
- Q.5 Define spirituality and write the characteristics of spiritual wellbeing.
- Q.6 Write the few important road safety tips.
- Q.7 Explain the issues in environmental ethics.
- Q.8 Define value. Write the core of fundamental value and explain any two of them.
- Q.9 Write measures needed to be taken to control elder abuse.
- Q.10 What do you mean by ethics? Explain the significance of ethics.

SECTION "B"

- Q.11 Define the following terms.

- | | |
|------------------------|----------------------|
| 1) Human right | 2) Scientific temper |
| 3) Professional ethics | 4) Intrinsic value |

- Q.12 Fill in the blanks.

- 1) Sub ways, zebra crossing, foot over bridge should be used to _____.
- 2) Anger can occur when person feels their _____ are being to be violated.
- 3) _____ is the fundamental value in relationship.
- 4) _____ implies duty with care and efforts.



MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END EXAMINATION

B.Sc.(Hons.) Agriculture

| | | | | | |
|------------|------------------------|-------|-------------------------------|---------------|-----------|
| Semester | : I (New) | Term | : I | Academic Year | : 2019-20 |
| Course No. | : AGRO 111 | Title | : Fundamentals of Agronomy- I | | |
| Credits | : 2(1+1) | Time | : 10.00 to 12.00 | Total Marks | : 40 |
| Day & Date | : Thursday, 09.01.2020 | | | | |

- Note :
1. Solve ANY EIGHT questions from SECTION "A".
 2. All questions from SECTION "B" are compulsory.
 3. All questions carry equal marks.
 4. Draw neat diagrams wherever necessary.

SECTION "A"

- Q.1 Explain the term Agronomy and write the role of Agronomist.
- Q.2 Write characteristics of good quality seed and explain objects of seed treatment.
- Q.3 Elaborate the term 'tillage' and enlist the objectives of tillage.
- Q.4 Explain the role of manures and fertilizers in soil, water and crop management.
- Q.5 Enlist the different base of classification of weeds and write classification of weeds on the basis of ontogeny with suitable examples.
- Q.6 Explain the effects of plant population on crop growth and yield. Enlist different planting geometry useful in manipulation of plant population.
- Q.7 Define crop rotation. Explain the advantages of crop rotation.
- Q.8 Define plant ideotype and describe in brief different types of plant ideotypes.
- Q.9 Enlist methods of sowing of agronomic crops and describe any one method of sowing of crops propagated by seeds with its advantages and disadvantages.
- Q.10 Write short notes. (Any Two)
- a) Multiplication stages of seeds
 - b) Characteristics of weeds
 - c) Relation of agronomy to other sciences

SECTION "B"

- Q.11 Define the following terms.
- 1) Puddling
 - 2) Seeds
 - 4) Soil amendment
 - 4) Plant nutrients
- Q.12 Do as directed.
- 1) Vaidya, V.G; Sahasrabudhe, K.R. and Khuspe, V.S.wrote the text book entitled _____.
 - 2) Earthing up is secondary tillage operation (State True or False)
 - 3) Seed cotton is harvested by _____ operation.
 - 4) Write the following operations in sequence as they are performed.
Seedbed preparation, Treatment of setts, FYM application, Planting



MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
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B.Sc.(Hons.)- Agriculture/Horticulture/Forestry/A.B.M./Community Science/Animal Husbandry/
B.Tech. (Biotechnology)/ B.F.Sc./B.Tech. (Engineering)

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|------------|------------------------|-------|--|---------------|-----------|
| Semester | : I (New) | Term | : I | Academic Year | : 2019-20 |
| Course No. | : DEG 111/CNC 111 | Title | : Democracy, Elections and Good Governance | | |
| Credits | : 1(1+0) | Time | : 10.00 to 12.00 | Total Marks | : 40 |
| Day & Date | : Thursday, 02.01.2020 | | | | |

- Note :
1. Solve ANY EIGHT questions from SECTION "A".
 2. All questions from SECTION "B" are compulsory.
 3. All questions carry equal marks.
 4. Draw neat diagrams wherever necessary.

SECTION "A"

- Q.1 Enlist the fundamental rights of Indian Constitution and describe in brief any two of them.
- Q.2 Describe the powers and duties of Gram Panchayat.
- Q.3 Enlist the principles of democracy in India and explain any one of them.
- Q.4 Define democracy decentralization and explain the feature of decentralization.
- Q.5 Write in detail about three-tier structure of Panchayat Raj.
- Q.6 Describe attributes of poor Governance.
- Q.7 Describe functions of Zilla Parishad.
- Q.8 Explain the power of Election Commission of India.
- Q.9 Enlist the different types of democracy and explain any one of them.
- Q.10 Write short notes. (Any Two)
- a) Composition of Panchayat Raj
 - b) Constitutional provision of 73rd and 74th Amendment Act
 - c) Challenges of Democracy

SECTION "B"

- Q.11 Define the following terms.
- 1) Democracy
 - 2) Election
 - 3) Governance
 - 4) Fundamental rights
- Q.12 Fill in the blanks.
- 1) Legislature assembly of Maharashtra (Vidhan Sabha) has _____ members.
 - 2) The word Republic is derived from _____ word.
 - 3) The election commission of India constituted in the year _____.
 - 4) The word democracy is derived from _____ word.



MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END EXAMINATION

B.Sc.(Hons.) Agriculture/B.Sc.(Hons.) Forestry/ B.Sc. (Hons.) A.B.M.

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|----------------------------------|--------------------------------|-------------------------|
| Semester : I (New) | Term : I | Academic Year : 2019-20 |
| Course No. : MATH 111 | Title : Elementary Mathematics | |
| Credits : 2(1+1) | Time : 14.00 to 16.00 | Total Marks : 40 |
| Day & Date : Tuesday, 31.12.2019 | | |

- Note :**
1. Solve ANY EIGHT questions from SECTION "A".
 2. All questions from SECTION "B" are compulsory.
 3. All questions carry equal marks.
 4. Draw neat diagrams wherever necessary.

SECTION "A"

- Q.1 State the formula of Simpson's rule to find the area whose ordinates and common distance is given.
- Q.2 Explain any four types of functions with one example.
- Q.3 Find the equation of straight line passing through the two points.
P (1, 2) and Q (4, 3).
- Q.4 Find the equation of a circle whose centre is (- 5, - 6) and radius is 10.
- Q.5 State the theorems or rules of Differentiations.
- Q.6 State the theorems or rules of Integrations.
- Q.7 Find the Area bounded by curve $y = \text{Sin}x$ about the x-axis and ordinates $x = 0, x = \frac{\pi}{2}$.

Q.8 Evaluate
$$\begin{vmatrix} 2 & 3 & 1 \\ 0 & 1 & 2 \\ 5 & -3 & 4 \end{vmatrix}$$

Q.9 If $A = \begin{bmatrix} 3 & 6 & 6 \\ 6 & 3 & 6 \\ 6 & 6 & 3 \end{bmatrix}$ Show that $A^2 - 12A$ is a Scalar Matrix.

Q.10 Evaluate the Limit, $\lim_{x \rightarrow 2} \frac{x^3 - 8}{x^5 - 32}$.

SECTION "B"

- Q.11 Define the following terms.
- | | |
|-------------------------------|-----------------------------|
| 1) Determinant of Third order | 2) Scalar matrix |
| 3) Circle | 4) Derivative of a function |
- Q.12 Fill in the blanks.
- 1) The slope of straight line $y - 2x + 3 = 0$ is _____.
 - 2) The radius of the circle $x^2 + y^2 = 25$ is _____.
 - 3) $y = e^x$ is _____ type of function.
 - 4) $\int dx =$ _____.



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SEMESTER END EXAMINATION

B.Sc.(Hons.) Agriculture/B.Sc.(Hons.)(Forestry)/ B.Sc.(Hons.) A.B.M./ B.Sc.(Hons.) C.S.

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|------------|-------------------------|-------|-----------------------------------|---------------|-----------|
| Semester | : I (New) | Term | : I | Academic Year | : 2019-20 |
| Course No. | : LANG 111 | Title | : Comprehension and Communication | | |
| Credits | : 2(1+1) | | : Skills in English | | |
| Day & Date | : Wednesday, 01.01.2020 | Time | : 10.00 to 12.00 | Total Marks | : 40 |

- Note :
1. Solve ANY EIGHT questions from SECTION "A".
 2. All questions from SECTION "B" are compulsory.
 3. All questions carry equal marks.
 4. Draw neat diagrams wherever necessary.

SECTION "A"

- Q.1 What are your expectations when you come to the university? Can you specify at least five important ones?
- Q.2 Why the Employment exchanges are called 'Exchanges'? What is exchanged in them?
- Q.3 What is a Curriculum Vitae? Give the format of Curriculum Vitae.
- Q.4 What are the reasons for many candidates failing at interviews?
- Q.5 Are you interested in astronomy? If you are to ask astronomer some questions about the universe, which questions will you ask? Ask at least five questions.
- Q.6 Imagine you are a psychiatrist. What questions you might ask in the following situations.
- a) A teenager who has made a suicide attempt.
 - b) A thirty-year actress who has taken to drinking heavily.
- Q.7 Why industries are quite often located in coastal areas?
- Q.8 What according to Thurber, is the risk involved in using 'only' at the beginning of a sentence?
- Q.9 Playing games is simply a waste of time. Do you agree?
- Q.10 How can our search for truth bring our civilization to the brink of destruction?

SECTION "B"

- Q.11 Who were these people? Complete the following sentences choosing the right item from the list given below. Add a/an/the where necessary:
- a) Wole Soyinka is _____.
 - b) Baba Amte is _____.
 - c) Pandit Ravi Shankar is _____.
 - d) Yasser Arafat is _____.

List given,

- i) Hindustani singer and composer
- ii) Organizer of social awareness movements
- iii) Nobel prize winner for literature
- iv) Leader of the Palestinian refugees

(P.T.O.)

Q.12 Match the following pairs.

'A'

- 1) Petrol
- 2) Flat
- 3) Full stop
- 4) Lift

'B'

- a) Apartment
- b) Elevator
- c) Gas
- d) Period



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SEMESTER END EXAMINATION

B.Sc.(Hons.) Agriculture

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|---------------------------------|--------------------------------------|-------------------------|
| Semester : I (New) | Term : I | Academic Year : 2019-20 |
| Course No. : SSAC 111 | Title : Fundamentals of Soil Science | |
| Credits : 3(2+1) | Time : 10.00 to 13.00 | Total Marks : 80 |
| Day & Date : Monday, 30.12.2019 | | |

- Note :
1. Solve ANY EIGHT questions from SECTION "A".
 2. All questions from SECTION "B" are compulsory.
 3. All questions carry equal marks.
 4. Draw neat diagrams wherever necessary.

SECTION "A"

- Q.1 a) Write the kinds of soil pollution.
b) What are the soil moisture constants?
- Q.2 a) Define soil aeration. Give the composition of soil air and atmospheric air.
b) State factors affecting soil temperature.
- Q.3 a) Write in brief about measurement of soil colour.
b) Write down the importance of soil water.
- Q.4 a) State the effect of soil colour on soil condition.
b) Give biological classification of soil water.
- Q.5 a) Write the source of soil organic matter and give composition of plant residues.
b) Enlist different soil forming processes. Explain in brief one specific soil forming process.
- Q.6 a) State land capability classes.
b) Explain the significance of C:N ratio.
- Q.7 a) Define soil science. What are the major disciplines or branches of soil science?
b) Write importance of cation exchange.
- Q.8 a) Write down the differences between particle density and bulk density.
b) State the importance of soil structure.
- Q.9 a) Define soil colloids and write in detail types of soil colloids.
b) Define sedimentary rock and classify in brief.
- Q.10 a) Define soil structure and give its types in brief.
b) Explain in brief about master soil horizons.

(P.T.O.)

SECTION "B"

Q.11 Match the following pairs.

'A'

- 1) Stokes' Law
- 2) Silt and sand
- 3) Primary mineral
- 4) Climate
- 5) Heavy mineral
- 6) Mohr's scale
- 7) Acidic rock
- 8) Intrusive

'B'

- a) Skeleton of soil
- b) Active soil forming factor
- c) Feldspar
- d) Soil texture
- e) Hardness of mineral
- f) Granite
- g) Sp. Gr. > 2.85
- h) Plutonic

Q.12 Fill in the blanks.

- 1) Conversion of limestone to marble is an example of _____ rock.
- 2) According to International scale 0.20 to 0.02 mm diameter soil separates is _____.
- 3) The colour of powder of the mineral is called _____.
- 4) Soils having more than 20% of organic constituents are designated as _____.
- 5) The particles less than _____ mm size possess colloidal properties.
- 6) The solid phase of soil is also called _____.
- 7) The intrusive rocks consolidated in horizontal cracks or planes are called _____.
- 8) Topography is a _____ soil forming factor.



MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END EXAMINATION

B.Sc.(Hons.) Agriculture

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|------------|------------------------|-------|--|---------------|-----------|
| Semester | : I (New) | Term | : I | Academic Year | : 2019-20 |
| Course No. | : EXTN 111 | Title | : Rural Sociology and Educational Psychology | | |
| Credits | : 2(2+0) | Time | : 10.00 to 13.00 | Total Marks | : 80 |
| Day & Date | : Thursday, 26.12.2019 | | | | |

- Note :
1. Solve ANY EIGHT questions from SECTION "A".
 2. All questions from SECTION "B" are compulsory.
 3. All questions carry equal marks.
 4. Draw neat diagrams wherever necessary.

SECTION "A"

- Q.1 Explain interrelationship between Rural Sociology and Extension Education.
- Q.2 Explain scope and importance of Rural Sociology in agricultural extension.
- Q.3 Define the term social group. Write classification of social group and explain in detail any one.
- Q.4 Define the term culture and explain role of culture in agricultural extension.
- Q.5 Define the term social institution. Write major types of institutions and explain functions of family as an institution.
- Q.6 Explain the elements of learning situation with a suitable diagram.
- Q.7 Define the term personality and explain factors influencing personality.
- Q.8 Write the types and important characteristics of organization.
- Q.9 Define the term leader. State in brief the types of leaders with suitable examples.
- Q.10 Define the term intelligence and describe factors affecting intelligence.

SECTION "B"

- Q.11 State True or False.
 - 1) Culture forms a part of psycho social environment.
 - 2) Rituals are the practices and ceremonies followed by the society.
 - 3) Urban society is complex and multigroup society.
 - 4) Caste is an example of open class system.
 - 5) Crowd is an example of permanent group.
 - 6) Attitudes are formed in relation to values and objects.
 - 7) Institutions are formed for fulfillment of primary needs.
 - 8) Social values regulate human behavior in a society.

Q.12 Match the following pairs.

'A'

- 1) Psychology
- 2) Motivation
- 3) Norms
- 4) Taboos
- 5) Religion
- 6) Introvert
- 7) Extrovert
- 8) Perception

'B'

- a) Expresses emotions read
- b) Set of belief in supernatu
- c) Do not express emotions
- d) Blue prints of behaviour
- e) Interpretation of received i
- f) Goal directing behaviour
- g) Science of human mind
- h) Expresses negative type of



MHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
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B.Sc. (Hons.) Agriculture/ Forestry

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|------------------------------------|---|-------------------------|
| Semester : III (New) | Term : I | Academic Year : 2019-20 |
| Course No. : ESDM 231/ EVS 231 | Title : Environmental Studies and Disaster Management | |
| Credits : 3(2+1) | Time : 09.00 to 12.00 | Total Marks : 80 |
| Day & Date : Wednesday, 06.11.2019 | | |

- Note :**
1. Solve ANY EIGHT questions from SECTION "A".
 2. All questions from SECTION "B" are compulsory.
 3. All questions carry equal marks.
 4. Draw neat diagrams wherever necessary.

SECTION "A"

1. Define the term 'Biodiversity' Give its classification and explain in detail about the conservation of biodiversity.
2. Define pollution. Enlist different types of pollution and explain the causes, effects and control measures of water pollution.
3. What is ecosystem? Give the classification of ecosystem and explain in brief the grassland ecosystem.
4. Define Disaster. Give detail classification of disaster. Explain in brief about flood disaster.
5. Define environmental studies. Write its scope and importance.
6. What is greenhouse effect? Explain impact of global warming on agriculture.
7. Enlist different acts. Write in brief the salient features of Environment (protection) Act, 1986.
8. What is disaster management?
 - a) Explain different phases of disaster management.
 - b) Explain the role of NGOs in disaster management.
9. Define natural resources. Classify the natural resources with examples and give in brief the importance of forest resources.
10. Write short notes:
 - a) Ecological Pyramid
 - b) Carbon sequestration

SECTION "B"

11. a) Define the following terms.
 - 1) Endangered species
 - 2) Biosphere
 - 3) Food chain
 - 4) Habitat

(P.T.O.)

b) Give full forms of the following.

1) AIDS

2) IPCC

3) WHO

4) BSI

Q.12 Fill in the blanks.

- 1) The environment which has been modified by human activities is called _____ environment.
- 2) Short term properties of the atmosphere at a given place and time is referred as _____.
- 3) Extensive planting of trees to increase cover is called _____.
- 4) The area reserved for welfare of wildlife is called _____.
- 5) The pyramid of _____ is always upright.
- 6) The unit used for measuring the intensity of earthquakes is _____.
- 7) The World Environment Day is celebrated on _____.
- 8) The thinning of stratosphere ozone layer during the spring time is called _____.



MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END EXAMINATION

B.Sc. (Hons.) Agriculture

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|------------|-----------------------|-------|--|---------------|-----------|
| Semester | : III (New) | Term | : I | Academic Year | : 2019-20 |
| Course No. | : AGRO 234 | Title | : Crop Production Technology –I (Kharif Crops) | | |
| Credits | : 2 (1+1) | Time | : 09.00 to 11.00 | Total Marks | : 40 |
| Day & Date | : Tuesday, 05.11.2019 | | | | |

- Note :
1. Solve ANY EIGHT questions from SECTION "A".
 2. All questions from SECTION "B" are compulsory.
 3. All questions carry equal marks.
 4. Draw neat diagrams wherever necessary.

SECTION "A"

- Q.1 Explain in detail the cultivation of Cotton on the following aspects.
- a) Soil and climate
 - b) Inter-cultivation
 - c) Quality parameters
 - d) Harvesting and yield
- Q.2 Discuss in detail the cultivation of Pigeonpea on the following points.
- a) Seed and sowing
 - b) Rotation and mixed cropping
 - c) Fertilizer management
 - d) Harvesting and yield
- Q.3 Describe in detail the cultivation of *Kharif* sorghum on the following points.
- a) Seed and sowing
 - b) Intercultivation
 - c) Manures and fertilizers
 - d) Ratoon crop management
- Q.4 Discuss in detail the cultivation of groundnut on the following aspects.
- a) Economic importance
 - b) Soil and climate
 - c) Seed and sowing
 - d) Improved varieties
- Q.5 Describe in detail the cultivation of paddy on the following points.
- a) Soil and climate
 - b) Fertilizer management
 - c) Irrigation management
 - d) Harvesting and yield
- Q.6 Explain in detail the cultivation of maize for forage purpose on the following points.
- a) Soil and climate
 - b) Seed and sowing
 - c) Nutrient management
 - d) Harvesting and yield
- Q.7 Discuss in detail the cultivation of soybean on the following aspects.
- a) Seed and sowing
 - b) Selection of Varieties
 - c) Nutrient management
 - d) Harvesting and yield

- Q.8 Explain in detail the cultivation of green gram on the following points.
- a) Field Preparation
 - b) Seed and sowing
 - c) Water management
 - d) Harvesting and yield
- Q.9 Describe in detail the cultivation of finger millet on the following points.
- a) Improved varieties
 - b) Seed and sowing
 - c) Weed management
 - d) Harvesting and yield
- Q.10 Write short notes (Any Two)
- a) Retting and fiber extraction in jute
 - b) System of Rice Intensification (SRI)
 - c) Malting of finger millet

SECTION "B"

- Q.11 Match the following pairs.

'A'

- 1) Groundnut
- 2) Maize
- 3) Rice
- 4) Black gram

'B'

- a) Mexico
- b) South East Asia
- c) India
- d) Brazil

- Q.12 Fill in the blanks.

- 1) The protein content of milled rice is usually _____.
- 2) Napier grass belongs to family _____.
- 3) Botanical name of Foxtail millet is _____.
- 4) Groundnut seed contains _____ % oil.



MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END EXAMINATION

B.Sc. (Hons.) Agriculture

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|------------|----------------------|-------|--|---------------|-----------|
| Semester | : III (New) | Term | : I | Academic Year | : 2019-20 |
| Course No. | : AGRO 235 | Title | : Rainfed Agriculture and Watershed Management | | |
| Credits | : 2 (1+1) | Time | : 09.00 to 11.00 | Total Marks | : 40 |
| Day & Date | : Friday, 08.11.2019 | | | | |

- Note :
1. Solve ANY EIGHT questions from SECTION "A".
 2. All questions from SECTION "B" are compulsory.
 3. All questions carry equal marks.
 4. Draw neat diagrams wherever necessary.

SECTION "A"

- Q.1 Explain various strategies to mitigate the drought in rainfed agriculture.
- Q.2 Explain various techniques of soil and water conservation in rainfed farming areas.
- Q.3 Explain various problems associated with crop production in rainfed farming.
- Q.4 Write in brief the history of rainfed agriculture.
- Q.5 What is drought? Give classification of drought and explain the classification based on sources of water availability.
- Q.6 Define water harvesting and explain in detail different methods of water harvesting.
- Q.7 What do you mean by 'Crop adaptation'? Write in short about various mechanisms in plant for conserving water under drought conditions.
- Q.8 Define watershed management. Write in short concept and state different principles of watershed management.
- Q.9 What is rainfed agriculture? Differentiate between dryland farming and rainfed farming.
- Q.10 Write short notes. (Any Two).
- a) Factors affecting watershed management
 - b) South-West Monsoon
 - c) Contingent crop planning

SECTION "B"

- Q.11 Define the following terms.
- 1) Dry farming
 - 2) Mulch
 - 3) Cropping pattern
 - 4) Strip cropping
- Q.12 Fill in the blanks.
- 1) The Dry Land Research Station in Maharashtra is located at _____.
 - 2) The average annual rainfall of India is _____.
 - 3) The plants which complete their life cycle within a short period are called _____.
 - 4) _____ is an area from which rainfall is collected and drains through a common point.

B.Sc. (Hons.) Agriculture

| | | |
|---------------------------------|--|-------------------------|
| Semester : III (New) | Term : I | Academic Year : 2019-20 |
| Course No. : BIOCHM 231 | Title : Fundamentals of Plant Biochemistry and Biotechnology | |
| Credits : 3(2+1) | Time : 09.00 to 12.00 | Total Marks : 80 |
| Day & Date : Monday, 04.11.2019 | | |

- Note :
1. Solve ANY EIGHT questions from SECTION "A".
 2. All questions from SECTION "B" are compulsory.
 3. All questions carry equal marks.
 4. Draw neat diagrams wherever necessary.

SECTION "A"

- Q.1 a) Write the importance of biochemistry in agriculture.
b) Explain in brief the chemical and physical properties of water.
- Q.2 a) Define biomolecule. Enlist them and write their general characteristics.
b) Classify carbohydrates along with suitable examples.
- Q.3 a) Explain in brief the properties of monosaccharides.
b) Write on structural organization of protein.
- Q.4 a) What are nucleic acids? Write their types of along with structural components.
b) Write in detail the mechanism of enzyme action.
- Q.5 a) Give the importance of lipids.
b) Enlist the steps involved in glycolysis.
- Q.6 a) Give outline of TCA cycle.
b) Explain β oxidation of fatty acids. Write the amount of energy generated from complete oxidation of fatty acids.
- Q.7 a) Classify amino acids with suitable examples.
b) Explain the term photosynthesis. List out the photosynthesis pigments. What is Hill's reaction?
- Q.8 Define micropropagation. Explain in detail stages and applications of micropropagation.
- Q.9 Enlist the different methods of gene transfer and describe in brief the *Agrobacterium* mediated gene transfer.
- Q.10 What is PCR? Describes the steps involved in PCR.

(P.T.O.)

SECTION "B"

Q.11 Do as directed.

- 1) Give one example of enzyme which involved in catalysis of oxidation- reduction reactions.
- 2) Draw the structure of sucrose.
- 3) Mention Michaelis- Menten equation.
- 4) What do you understand by hydrolytic rancidity?
- 5) What is saponification?
- 6) What is the pH requirement for tissue culture media?
- 7) Give the contribution of Guha and Maheshwari?
- 8) What do you mean by Callus?

Q.12 Define the following terms.

- | | |
|-------------------------|-----------------------------|
| 1) Lipids | 2) Allosteric enzyme |
| 3) pH | 4) Nucleotides |
| 5) Nitrate assimilation | 6) Marker Assisted Breeding |
| 7) Synthetic seed | 8) Cybrid |



MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END EXAMINATION

B.Sc. (Hons.) Agriculture

| | | |
|-----------------------------------|----------------------------------|-------------------------|
| Semester : III (New) | Term : I | Academic Year : 2019-20 |
| Course No. : ENGG 232 | Title : Farm Machinery and Power | |
| Credits : 2 (1+1) | Time : 09.00 to 11.00 | Total Marks : 40 |
| Day & Date : Saturday, 09.11.2019 | | |

- Note :
1. Solve ANY EIGHT questions from SECTION "A".
 2. All questions from SECTION "B" are compulsory.
 3. All questions carry equal marks.
 4. Draw neat diagrams wherever necessary.

SECTION "A"

- Q.1 What is Farm Mechanization? Give its benefits and limitations.
- Q.2 What are the important adjustments of a Mould Board Plough? What are the effects of vertical suction and horizontal suction in a Mould Board Plough? Explain with neat diagram.
- Q.3 A four cylinder 4 stroke gas engine has cylinder diameter of 25 cm, stroke-bore bore ratio is 1.8, clearance volume 4500 cm^3 , engine speed 240 rev/min, mean effective pressure 700 kPa and mechanical efficiency is 75%. Calculate i) ip ii) bp iii) compression ratio iv) swept volume.
- Q.4 What are the different types of seed metering mechanism? Explain the working of fluted feed type with diagram.
- Q.5 A five tine cultivator having tine spacing 8cm, working depth of 5cm and speed is 3km/hr. Turning loss is 10%. Soil resistance is 0.6 kg/cm^3 . Width of each furrow is 5cm. Calculate 1) Time to cover one hectare, ii) Maximum draft, iii) Required power.
- Q.6 What is harrow? Describe in detail the working of a tractor drawn off-set disc harrow.
- Q.7 The following results were obtained while calibrating a seed drill. Calculate the seed rate per hectare where i) No. of furrows=10, ii) Spacing between furrows=20cm, iii) Diameter of drive wheel=1.5 metre, iv) Speed=500 rev/min, v) seed collected=20 kg.
- Q.8 What is tillage? What are the main objectives of tillage?
- Q.9 Enlist different types of sprayers. Write advantages and disadvantages of spraying.
- Q.10 What is the purpose of engine cooling? What are the different methods of engine cooling? Write advantages and disadvantages of air cooled engine.

(P.T.O.)

MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END EXAMINATION

B.Sc. (Hons.) Agriculture

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|------------|----------------------|-------|---|---------------|-----------|
| Semester | : III (New) | Term | : I | Academic Year | : 2019-20 |
| Course No. | : ENTO 232 | Title | : Insect Ecology and Integrated Pest Management | | |
| Credits | : 2(1+1) | Time | : 09.00 to 11.00 | Total Marks | : 40 |
| Day & Date | : Monday, 11.11.2019 | | | | |

- Note :
1. Solve ANY EIGHT questions from SECTION "A".
 2. All questions from SECTION "B" are compulsory.
 3. All questions carry equal marks.
 4. Draw neat diagrams wherever necessary.

SECTION "A"

- Q.1 Define Insect Ecology and explain effect of biotic factors on insects with suitable examples.
- Q.2 Define Pest. Enlist different methods of pest control and explain mechanical method with suitable examples.
- Q.3 Define Microbial control. Explain role of micro-organisms in pest management with example.
- Q.4 Describe scope and importance of Integrated Pest Management.
- Q.5 Describe cultural methods of pest management with suitable examples.
- Q.6 Define insecticide. Classify insecticides on the basis of mode of entry with suitable example.
- Q.7 Write short notes. (Any Two)
- a) Pest Surveillance and Forecasting b) Balance of Nature
- c) Insecticide Act, 1968
- Q.8 Define Adjuvant. Explain the necessity of insecticide formulation.
- Q.9 Enlist different application techniques of insecticide and describe any one.
- Q.10 What is pest outbreak? Describe the factors responsible for outbreak of insect pests in nature.

SECTION "B"

Q.11 Define the following terms.

- 1) LC₅₀
- 3) Adjuvants

- 2) ETL
- 4) Hyper parasitism

Q.12 Match the following pairs.

'A'

- 1) *Bt*
- 2) Genetic control
- 3) Yellow stick trap
- 4) *Copidosoma koehleri*

'B'

- a) White fly
- b) Potato tuber moth
- c) E.F.Knippling
- d) Stomach poison



MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END EXAMINATION

B.Sc. (Hons.) Agriculture

| | | | | | |
|------------|------------------------|-------|---|---------------|-----------|
| Semester | : III (New) | Term | : I | Academic Year | : 2019-20 |
| Course No. | : HORT 232 | Title | : Production Technology for Vegetables and Spices | | |
| Credits | : 2(1+1) | Time | : 09.00 to 11.00 | Total Marks | : 40 |
| Day & Date | : Thursday, 14.11.2019 | | | | |

- Note :
1. Solve ANY EIGHT questions from SECTION "A".
 2. All questions from SECTION "B" are compulsory.
 3. All questions carry equal marks.
 4. Draw neat diagrams wherever necessary.

SECTION "A"

- Q.1 Explain in short cultivation of Tomato on the following points.
- a) Growth habit
 - b) Raising of seedlings
 - c) Nutrient management
 - d) Harvesting and yield
- Q.2 Explain in brief cultivation of Turmeric on the following points.
- a) Propagation and seed rate
 - b) Improved varieties
 - c) Harvesting and yield
 - d) Curing and polishing
- Q.3 Discuss in brief about the importance and scope of vegetable cultivation in India.
- Q.4 Discuss cultivation practices of Black pepper on the following aspects.
- a) Soil and climate
 - b) Propagation and planting
 - c) Varieties
 - d) Harvesting and yield
- Q.5 Explain in short cultivation of Potato on the following aspects.
- a) Soil and climate
 - b) Seed rate and seed treatment
 - c) Earthing up
 - d) Harvesting and yield
- Q.6 Explain in short cultivation of Nutmeg on the following points.
- a) Soil and climate
 - b) Varieties
 - c) Propagation and planting
 - d) Harvesting and yield
- Q.7 Discuss in brief cultivation of Onion on the following aspects.
- a) Soil and climate
 - b) Varieties for *kharif* and *rabi* season.
 - c) Harvesting and yield
 - d) Curing
- Q.8 Explain in short cultivation of Pea on the following points.
- a) Soil and climate
 - b) Manures and fertilizers
 - c) Seed rate and spacing
 - d) Harvesting and yield

(P.T.O.)

Q.9 Describe in brief cultivation of Cinnamon on the following points.

- a) Uses
- b) Soil and climate
- c) Varieties
- d) Harvesting and yield

Q.10 Write short notes (Any Two).

- a) Multistoried cropping
- b) Importance and scope of spices
- c) Types of flower in brinjal

SECTION "B"

Q.11 Fill in the blanks.

- 1) Gourd crops require training on _____ to get quality fruits.
- 2) Removal of old and drying shoots of plant in cardamom is known as _____
- 3) _____ is the recently developed cultivar of fenugreek by MPKV, Rahuri
- 4) _____ part of the clove is used as spice in commerce.

Q.12 Do as directed.

- 1) State the name of varieties of Kokam developed by Dr.BSKKV, Dapoli.
- 2) State the seed yield of fenugreek.
- 3) Expand the acronym "IISR".
- 4) Write the family of curry leaf.



MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END EXAMINATION

B.Sc. (Hons.) Agriculture

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|------------|------------------------|-------|-----------------------|---------------|-----------|
| Semester | : III (New) | Term | : I | Academic Year | : 2019-20 |
| Course No. | : STAT 231 | Title | : Statistical Methods | | |
| Credits | : 2(1+1) | Time | : 09.00 to 11.00 | Total Marks | : 40 |
| Day & Date | : Saturday, 16.11.2019 | | | | |

- Note :
1. Solve ANY EIGHT questions from SECTION "A".
 2. All questions from SECTION "B" are compulsory.
 3. All questions carry equal marks.
 4. Draw neat diagrams wherever necessary.

SECTION "A"

- Q.1 What is Statistics? Give its importance and limitations.
- Q.2 State the characteristics of an ideal Measure and explain any one.
- Q.3 Define Correlation. State different types of correlation and explain any two.
- Q.4 Explain in detail Range and Variance.
- Q.5 Define Coefficient of regression and state its properties.
- Q.6 Write the steps involved in hypothesis testing.
- Q.7 Define the term sample. Explain the concept of Random sampling and Standard error.
- Q.8 State assumptions of Simple linear regression and write down its equation.
- Q.9 Define probability and find the probability of getting two heads, if coin is tossed 2 times.
- Q.10 Write short notes (Any Two).
- a) Chi-square test
- b) Student t-test
- c) Analysis of Variance

SECTION "B"

- Q.11 Define the following terms.
- 1) Type of error
- 2) Independent Events
- 3) Parameter
- 4) Mode
- Q.12 Fill in the blanks.
- 1) The father of Statistics is _____.
- 2) If A' complement of event A then $P(A') =$ _____.
- 3) Conclusion drawn from sample is called _____.
- 4) The average relationship between dependent and independent variable is known as _____.



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SEMESTER END EXAMINATION

B.Sc. (Hons.) Agriculture

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|------------|------------------------|-------|----------------------------|---------------|-----------|
| Semester | : V (New) | Term | : I | Academic Year | : 2019-20 |
| Course No. | : ELE ECON 354 | Title | : Agri-Business Management | | |
| Credits | : 3 (2+1) | Time | : 14.00 to 17.00 | Total Marks | : 80 |
| Day & Date | : Thursday, 14.11.2019 | | | | |

- Note :
1. Solve ANY EIGHT questions from SECTION "A".
 2. All questions from SECTION "B" are compulsory.
 3. All questions carry equal marks.
 4. Draw neat diagrams wherever necessary.

SECTION "A"

- Q.1 Explain methods to acquire finance.
- Q.2 Explain the legal structure of sole proprietorship in view of meaning, creation, major attractions/advantages and disadvantages.
- Q.3 Elaborate in detail the stages of product life cycle.
- Q.4 Discuss the components of business plan.
- Q.5 Draw a flow diagram of project cycle and explain the project cycle.
- Q.6 Write the functions of personnel management.
- Q.7 Give detailed the procedure to set up an agro-based industry.
- Q.8 Explain the steps in planning process.
- Q.9 Discuss in detail the marketing mix.
- Q.10 Write short note (Any Two) :
- a) Pricing policy
 - b) Controlling
 - c) Maslow's need Hierarchy

SECTION "B"

- Q.11 Define the following terms.
- 1) Motivation
 - 2) Leading
 - 3) Staffing
 - 4) Agri business
 - 5) Project
 - 6) Planning
 - 7) Corporation
 - 8) Ordering
- Q.12 Give full forms of the following.
- 1) APEDA
 - 2) PEST
 - 3) NAFFD
 - 4) CFTRI
 - 5) NCUI
 - 6) NCDC
 - 7) NPW
 - 8) IRR



Q.9 Write uses of the following.

a) Isabgol

b) Lemon grass

c) Vetiver

d) Geranium

Q.10 Define landscaping. Describe in brief about the principles of landscaping.

SECTION "B"

Q.11 Write plant part / parts used for propagation of the following.

1) Gladiolus

2) Jasmine

3) Palmarosa

4) Isabgol

Q.12 Match the following pairs.

'A'

'B'

1) *Polianthes tuberosa*

a) Lemon grass

2) *Tagetes erecta*

b) Periwinkle

3) *Catharanthus roseus*

c) Tuberose

4) *Cymbopogon citrates*

d) African Marigold



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SEMESTER END EXAMINATION

B.Sc. (Hons.) Agriculture

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|---------------------------------|--|-------------------------|
| Semester : V (New) | Term : I | Academic Year : 2019-20 |
| Course No. : GPB 355 | Title : Crop Improvement –I (Kharif Crops) | |
| Credits : 2 (1+1) | Time : 14.00 to 16.00 | Total Marks : 40 |
| Day & Date : Monday, 11.11.2019 | | |

- Note : 1. Solve ANY EIGHT questions from SECTION "A".
2. All questions from SECTION "B" are compulsory.
3. All questions carry equal marks.
4. Draw neat diagrams wherever necessary.

SECTION "A"

- Q.1 Define pollination. Describe various types of mode of pollination.
Q.2 Define Pedigree method of breeding. Explain the procedure of Pedigree method.
Q.3 What do you mean by transgenic plant? Discuss the applications of transgenic plants in crop improvement.
Q.4 Explain the various mechanisms of insect resistance in crop plants with the help of suitable example.
Q.5 Differentiate between
a) Qualitative traits and Quantitative traits. b) Mass selection and Pure line selection
Q.6 Define ideotype breeding. Describe the various steps in ideotype breeding.
Q.7 Write short notes :
a) Somatic hybridization b) Gene for gene hypothesis
Q.8 Describe the procedure for certified seed production in hybrid maize.
Q.9 Define drought resistance. Explain various mechanisms that contribute to drought resistance.
Q.10 Write the procedure of certified seed production of rice variety.

SECTION "B"

- Q.11 Define the following terms.
1) Germplasm 2) Modifying gene
3) Genetic erosion 4) Hybrid
Q.12 Do as directed.
1) *Nicotiana tabacum* cultivated species derived from _____ and _____ species.
2) Give the botanical name of the following crops.
a) Finger millet b) Pomegranate
3) Name the systems used for hybrid seed production of rice.
4) Complete the following table.

| Sr.No. | Crop | Origin |
|--------|-----------|--------|
| 1) | Castor | |
| 2) | Groundnut | |



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B.Sc. (Hons.) Agriculture

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|------------|------------------------|-------|--|---------------|-----------|
| Semester | : V (New) | Term | : 1 | Academic Year | : 2019-20 |
| Course No. | : ENTO 354 | Title | : Pests of Crops and Stored Grain and Their Management-I | | |
| Credits | : 2 (1+1) | Time | : 14.00 to 16.00 | Total Marks | : 40 |
| Day & Date | : Saturday, 09.11.2019 | | | | |

- Note :
1. Solve ANY EIGHT questions from SECTION "A".
 2. All questions from SECTION "B" are compulsory.
 3. All questions carry equal marks.
 4. Draw neat diagrams wherever necessary.

SECTION "A"

- Q.1 Give the scientific name, typical damage symptoms and describe the management practices for brown plant hopper and yellow stem borer of rice.
- Q.2 Enlist the major pests of pigeonpea pod borer complex with scientific names. Mention the nature of damage and management practices for pod fly.
- Q.3 Mention the major pests associated with bollworm complex of cotton. Describe the nature of damage and management practices for cotton pink bollworm.
- Q.4 Give the scientific name, host, typical damage symptoms and management practices for sugarcane top shoot borer.
- Q.5 Write short notes. (Any Two)
- a) Sorghum shoot fly b) Maize stem borer c) Bajra blister beetle
- Q.6 Enlist the management practices for rodents and describe any two measures.
- Q.7 Write in brief about the scientific name, host and nature of damage (Any Two) :
- a) Pulse beetle b) Rice moth c) Khapara beetle
- Q.8 Enlist the preventive and curative measures for the management of stored grain pests. Describe any one preventive and curative measure.
- Q.9 Give a brief account about site of oviposition, nature of damage and management practices for groundnut white grub and Tobacco leaf eating caterpillar.
- Q.10 Write in brief about (Any Two) :
- a) Safflower aphid b) Linseed gall fly c) Soybean girdle beetle

SECTION "B"

- Q.11 Give the damaging stage/stages of the following pests
- | | |
|-------------------------|----------------------|
| 1) Chickpea cutworm | 2) Wheat termites |
| 3) Groundnut leaf miner | 4) Sugarcane pyrilla |
- Q.12 Do as directed.
- 1) Name the vector of soybean mosaic disease.
 - 2) The silver shoots in paddy are caused by _____.
 - 3) Name the vector of pigeonpea sterility mosaic.
 - 4) Mention the commercially available broad spectrum molluscicide.



MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
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B.Sc. (Hons.) Agriculture/ Forestry

| | | | | | |
|------------|------------------------|-------|---|---------------|-----------|
| Semester | : V (New) | Term | : I | Academic Year | : 2019-20 |
| Course No. | : EXTN 355 | Title | : Entrepreneurship Development and Business Communication | | |
| Credits | : 2 (1+1) | Time | : 14.00 to 16.00 | Total Marks | : 40 |
| Day & Date | : Thursday, 07.11.2019 | | | | |

- Note :
1. Solve ANY EIGHT questions from SECTION "A".
 2. All questions from SECTION "B" are compulsory.
 3. All questions carry equal marks.
 4. Draw neat diagrams wherever necessary.

SECTION "A"

- Q.1 Explain the characteristics of an entrepreneur.
- Q.2 Narrate in brief the types of advertisements.
- Q.3 What do you mean by SWOT analysis?
- Q.4 Define Advertising. Describe the elements of advertisement.
- Q.5 What is entrepreneurship? Explain the process of entrepreneurship development.
- Q.6 State the objectives of market survey. Discuss the aspects of survey.
- Q.7 Describe the phases of entrepreneurial venture.
- Q.8 Enlist the steps in setting small enterprise.
- Q.9 Define business communication. Explain most important Business Communication Skills.
- Q.10 Explain the importance of the entrepreneurship development programme.

SECTION "B"

- Q.11 State True or False.
 - 1) The book entitled "Dimensions of Agricultural Extension" is written by A.K.Singh, Lakhani Singh and R.Roy Burman.
 - 2) The advertising benefits the manufacturer, middleman, sales man and society.
 - 3) Communication is the exchange of any ideas among the people.
 - 4) Product, Price, Place and Promotion are the elements of marketing mix.
- Q.12 Fill in the blanks.
 - 1) KVIC means _____.
 - 2) _____ means a process of stimulating people to action to accomplish desired goals.
 - 3) _____ is symbolic representation of a company.
 - 4) _____ is the ability to bring something in a better way for the society.



MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END EXAMINATION

B.Sc. (Hons.) Agriculture

| | | | | | |
|------------|----------------------|-------|--|---------------|-----------|
| Semester | : V(New) | Term | : I | Academic Year | : 2019-20 |
| Course No. | : ECON 353 | Title | : Agricultural Marketing, Trade and Prices | | |
| Credits | : 3 (2+1) | Time | : 14.00 to 17.00 | Total Marks | : 80 |
| Day & Date | : Monday, 04.11.2019 | | | | |

- Note :
1. Solve ANY EIGHT questions from SECTION "A".
 2. All questions from SECTION "B" are compulsory.
 3. All questions carry equal marks.
 4. Draw neat diagrams wherever necessary.

SECTION "A"

- Q.1 a) State the importance of agricultural marketing in economy.
b) Give the classification of market based on volume of transaction.
- Q.2 a) What do you mean by marketing mix? Explain it in brief.
b) Define demand. State the factors affecting demand for farm products.
- Q.3 a) Define producer's surplus. Explain the factors affecting marketable surplus.
b) Explain the stages of Product Life Cycle.
- Q.4 a) What are the promotion methods used in marketing? Explain in brief.
b) Explain different pricing methods in determining prices of product.
- Q.5 a) Write the Kohls and Uhl classification of marketing functions.
b) Explain the buying and selling functions of marketing.
- Q.6 a) Define market integration. Explain the types of market integration.
b) Define marketing channel. State factors affecting length of marketing channel.
- Q.7 a) Explain the approaches to assess the marketing efficiency.
b) Enlist and explain the factors affecting marketing cost.
- Q.8 a) State the origin, objectives and functions of NAFED.
b) State the origin, objectives and functions of FCI.
- Q.9 a) State the types of risk in agricultural marketing and ways to minimize them.
b) What do you mean by international trade? Explain the basis of international trade.
- Q.10 Write short notes (Any Two):
- a) WTO
 - b) CACP
 - c) TRIPS

SECTION "B"

Q.11 Fill in the blanks.

- 1) In short period market, the prices of commodities are governed mainly by the extent of _____, for rather than the supply of commodities.
- 2) Quality of agricultural commodities is ensured by _____ label.
- 3) The word market comes from the Latin word _____.
- 4) Market _____ determines the market conduct and performance.
- 5) Storage function of market creates _____ utility.
- 6) The first Cooperative Marketing Societies Act was passed in the year _____.
- 7) Hamals, weighmen, graders etc. are classified as _____ middlemen.
- 8) Difference between the prices prevailing at successive stages of marketing at a given point of time is called _____ margin.

Q.12 Do as directed.

- 1) Study of activities related to supply of farm inputs to the farmers is a part of subject matter of agricultural marketing. (True or False)
- 2) The supply curve of agricultural commodities is positively sloped. (True or False)
- 3) Marketable surplus may be more, equal or less to the marketed surplus. (True or False)
- 4) DMI (Give the full form)
- 5) CWC (Give the full form)
- 6) AOA (Give the full form)
- 7) GATT (Give the full form)
- 8) State the two names of public sector marketing institutions.



SECTION "B"

Q.11 Do as directed.

- 1) Give full form of EIC.
- 2) Give any one name of enzyme present in milk.
- 3) At what temperature raw milk should be cooled until processed?
- 4) Which international commission protects the health of consumers and ensures practices in food trade?

Q.12 Fill in the blanks.

- 1) _____ is the clarified butter fat.
- 2) Toned milk contains _____ % SNF.
- 3) _____ can be defined as a tool that protects and contains our goods with the aim of minimizing the environmental impact on consumption.
- 4) Adjustment of fat and SNF in milk is called _____.



(Note: Read Milk in Que.10 [c])

MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END EXAMINATION

B.Sc. (Hons.) Agriculture

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|------------|----------------------|-------|---|---------------|-----------|
| Semester | : V (New) | Term | : I | Academic Year | : 2019-20 |
| Course No. | : SSAC 353 | Title | : Manures, Fertilizers and Soil Fertility Management | | |
| Credits | : 3 (2+1) | Time | : 14.00 to 17.00 | Total Marks | : 80 |
| Day & Date | : Friday, 08.11.2019 | | | | |

- Note :
1. Solve ANY EIGHT questions from SECTION "A".
 2. All questions from SECTION "B" are compulsory.
 3. All questions carry equal marks.
 4. Draw neat diagrams wherever necessary.

SECTION "A"

- Q.1 a) State Arnon's Criteria of essentiality of nutrients. Classify the essential nutrients with the forms in which they are absorbed by plants.
b) What is organic recycling? Give the chemical composition of undecomposed organic matter.
- Q.2 a) Define and classify bulky and concentrated organic manures with one example each.
b) Define composting. Explain in detail Bangalore method of composting.
- Q.3. a) Define green manuring. Explain decomposition of green manuring in soil.
b) Write down in detail about sewage and sludge along with their composition.
- Q.4 a) Define complex fertilizers. Write down the characteristics of complex fertilizer.
b) Define fertilizers. Classify nitrogenous fertilizers with suitable examples.
- Q.5 a) What is Integrated Nutrient Management? Enlist advantages of INM.
b) Explain the mechanism of transport of ions from soil to roots.
- Q.6 a) Describe in detail nitrogen fixation in soil.
b) Write in brief the reactions of micro-nutrients in soil.
- Q.7 a) What is meant by soil fertility evaluation? Enlist the methods of Soil fertility evaluation.
b) Give sources of phosphorus to soil and describe phosphorus fixation in soil.
- Q.8 a) Enlist different approaches for plant analysis and describe in detail DRIS.
b) Discuss about losses during handling and storage of fertilizers.
- Q.9 a) Define Soil Fertility. What are the advantages of soil testing and state various approaches for fertilizer recommendations on the basis of soil test.
b) Define nutrient use efficiency and explain factors influencing it.
- Q.10 Write short notes (Any Two) :
- a) C:N ratio
 - b) Potassium fixation in soil
 - c) Vermicompost

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| Semester | : V(New) | Term | : I | Academic Year | : 2019-20 |
| Course No. | : PATH 354 | Title | : Diseases of Field and Horticultural Crops and Their Management - I | | |
| Credits | : 3 (2+1) | Time | : 14.00 to 17.00 | Total Marks | : 80 |
| Day & Date | : Wednesday, 06.11.2019 | | | | |

- Note :
1. Solve ANY EIGHT questions from SECTION "A".
 2. All questions from SECTION "B" are compulsory.
 3. All questions carry equal marks.
 4. Draw neat diagrams wherever necessary.

SECTION "A"

- Q.1 Write symptoms and management of the following diseases. (Any Two) :
- a) Foot rot of papaya b) Panama wilt of banana c) Phomopsis blight of brinjal
- Q.2 Describe symptoms of the following diseases.
- a) Yellow vein mosaic of okra b) Bunchy top of banana
c) Leaf curl of papaya d) Mosaic of tomato
- Q.3 Enlist causal organisms, symptoms, survival and spread and management of bacterial blight of pomegranate.
- Q.4 Enlist casual organisms, major symptoms, perpetuation and management of the following diseases. (Any Two)
- a) Anthracnose of beans b) Rust of coffee c) Early blight of tomato
- Q.5 Enlist different smuts of sorghum with their causal organisms. Write about grain mould of sorghum in terms of causal fungi, symptoms and management.
- Q.6 Explain in detail symptoms and transmission of the following disease.
- a) Tobacco mosaic b) Pigeonpea sterility mosaic
c) Rice Tungro disease d) Yellow mosaic of black gram
- Q.7 Describe symptoms of the following diseases.
- a) Downy mildew of maize b) Downy mildew of bajra
c) Late leaf spot of groundnut d) Blast of paddy
- Q.8 Comment on causal organism, symptoms and etiology of the following diseases.
- a) Ergot of bajra b) Anthracnose of sorghum
- Q.9 Write short notes. (Any Two)
- a) Pigeonpea wilt b) Coconut bud rot
c) Guava wilt
- Q.10 Explain in detail about black rot of cabbage.

SECTION "B"

Q.11 State True or False.

- 1) Brown spot disease of paddy is not soil borne.
- 2) Dwarf Cavendish bananas are generally resistant to Panama wilt.
- 3) Summer sown black gram is highly susceptible to yellow mosaic disease.
- 4) Taichung Native 1 variety of paddy is highly susceptible to bacterial blight.
- 5) *Tolyposporium eherenbergii* is air borne pathogen.
- 6) Secondary spread of false smut of paddy is accomplished through chlamydospores.
- 7) *Pycnial* and *aecial* stages of coffee rust are not known.
- 8) *Exobasidium vexans* causes blister blight in tea plantations.

Q.12 Do as directed.

- 1) Name the sexual spore which initiates primary infection in damping off of tomato.
- 2) Akiuchi symptom of paddy is a result of deficiency of _____ nutrient in the soil. (Fill in the blank)
- 3) State causal organism of *Phytophthora* blight of castor.
- 4) *Fusarium oxysporum f.sp.cubense* is soil borne and mainly survive in the form of _____. (Fill in the blank).
- 5) Name one phytotoxin produced by the fungus causing brown spot of paddy.
- 6) Paddy bacterial blight resistant gene *Xa21* is isolated from _____. (Fill in the blank)
- 7) Enlist name of the virus causing mosaic disease in soybean.
- 8) Bunchy top of banana is transmitted by _____. (Fill in the blank)

