MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END EXAMINATION

B.Sc. (Agri.)

Semester	: III (Old)	**Term**	: I	**Academic Year**	: 2018-19
Course No.	: AGRO 235	**Title**	: Field Crops – I (*Kharif* Crops)		
Credits	: 3(2+1)				
Day & Date	: Monday, 12.11.2018	**Time**	: 9.00 to 12.00	**Total Marks**	: 80

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 Describe in detail regarding cultivation of rice on the following points.

a) Economics importance b) Cultivation methods

c) Fertilizer management d) Harvesting and yield

Q.2 Discuss in detail about cultivation of maize on the following aspects.

a) Seed and sowing b) Weed Management

c) Hybrids and varieties d) Harvesting and yield

Q.3 Prepare a leaflet on pigeon pea (Tur) in respect of the following points.

a) Seed and sowing b) Varieties

c) Plant protection d) Harvesting and yield

Q.4 Elaborate the production technology for cotton crop with respect to the following aspects.

a) Climate and soil b) Seed and sowing

c) Irrigation management d) Picking and yield

Q.5 Give the detail information of sorghum crop with respect to the following points.

a) Seed and sowing b) Fertilizer management

c) Plant protection d) Harvesting and yield

Q.6 Explain in detail the cultivation of groundnut on the following points.

a) Climate and soil b) Seed and sowing

c) Intercultivation d) Plant protection

Q.7 Describe in detail about seed, sowing and harvesting of the following crops (Any Two).

a) Hy. Napier grass b) Stylo grass

c) Fodder bajra d) Fodder cowpea

Q.8 Discuss in detail about cultivation of sesamum with reference to the following aspects.

a) Climate and soil b) Seed and sowing

c) Varieties d) Weed management

(P.T.O.)

Q.9 Write short notes. (Any Two).

a) Nutritive value of minor millets

b) Retting in jute

c) Types of green manuring

Q.10 a) Write the importance of pulse crops in Indian agriculture.

b) What are the constraints in oilseed crop production?

SECTION "B"

Q.11 Fill in the blanks.

1) The botanical name of castor is _____.
2) _____ is said to be Golden fibre of India.
3) Sunhemp belongs to _____ family.
4) Pusa phalguni is the popular variety of _____.
5) Oil content of Niger seed is _____.
6) _____is the economical part in ginger.
7) T-9 is the popular variety of _____ crop.
8) Green gram can be grown in all the three seasons due to its_____.

Q.12 Match the following pairs.

"A"	"B"
1) Foxtail millet	a) *Guizotia abyssinica*
2) Proso millet	b) *Corchorus capsularis*
3) Mesta	c) *Hibiscus cannabinnus*
4) Moth bean	d) *Pongamia glabra*
5) Niger	e) *Phaseolus acontifolius*
6) Karanj	f) *Panicum millare L.*
7) Jute	g) *Setaria italica*
8) Marvel grass	h) *Dicanthium annulatum*

✧ ✧ ✧ ✧ ✧ ✧ ✧ ✧ ✧ ✧

MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END EXAMINATION

B.Sc. (Agri.)

Semester	: **III (Old)**	**Term**	: **I**	**Academic Year**	: **2018-19**
Course No.	: BOT 233	**Title**	: **Principles of Plant Breeding**		
Credits	: 3(2+1)				
Day & Date	: Wednesday, 14.11.2018	**Time**	: 9.00 to 12.00	**Total Marks**	: **80**

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) Enlist different breeding methods of self pollinated crops.

b) Explain in detail pure line theory.

Q.2 Define plant breeding. Describe chief objectives and scope of plant breeding.

Q.3 a) Define male sterility. What are different kinds of male sterility found in crops?

b) Narrate briefly the morphological features of male sterility.

Q.4 Define mutation breeding. Describe in detail its application in crop improvement.

Q.5 a) What is hybridization? Describe aims and objectives of hybridization.

b) Distinguish between pedigree method and bulk method.

Q.6 Define pollination and explain different modes of pollination.

Q.7 Define heterosis and explain different types of heterosis.

Q.8 Define wide hybridization. State types of wide hybridization and explain interspecific hybridization.

Q.9 Write short notes.

a) Apomixis b) Significance of pollination

c) Fertilization d) Sporogenesis

Q.10 Define recurrent selection. Enlist types of recurrent selection. Explain in detail simple recurrent selection.

SECTION "B"

Q.11 Define the following terms.

1) Self incompatibility 2) Dichogamy

3) Transgressive breeding 4) Inbreeding

5) Hybrid vigour 6) Hybrid

7) Gene mutation or point mutation 8) Sexual reproduction

(P.T.O.)

4

Q.12 Fill in the blanks.

1) Transfer of pollen grains from the anther to the stigma of same flower is known as_____.
2) Pollination and fertilization occur in unopened flower bud is known as _____.
3) Botanical name of rice is _____.
4) A pure line is the progeny of a single self fertilized_____ plant.
5) _____ is the removal of immature anthers from a bisexual flower.
6) Viable pollen grains fail to fertilize the same flower is known as_____.
7) The phenomenon of reducing vigour by selfing or inbreeding is known as_____.
8) Double cross hybrid is a cross between _____ F_1s.

MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END EXAMINATION

10

B.Sc. (Agri.)

Semester	: **III (Old)**	**Term**	: **I**	**Academic Year**	: **2018-19**
Course No.	: BOT 234	**Title**	: **Crop Physiology**		
Credits	: 3(2+1)				
Day & Date	: Friday, 16.11.2018	**Time**	: 9.00 to 12.00	**Total Marks**	: **80**

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 Crop Physiology. Describe in brief scope and importance of Crop Physiology in Agriculture.

Q.2 Define photosynthesis and describe in detail role of plant pigments in photosynthesis.

Q.3 Define transpiration. Write the different types of transpiration. Explain in detail about factors that affect transpiration.

Q.4 Enlist the criteria for essentiality of elements and write in short deficiency symptoms and function of following elements.

a) Nitrogen b) Copper

Q.5 Describe the reaction of Kreb's cycle.

Q.6 Distinguish between the following.

a) C_3 and C_4 Plant b) Transpiration and Guttation

c) Aerobic respiration and Anaerobic respiration d) Macronutrient and Micronutrient

Q.7 Write short notes.

a) Source - sink relationship b) Hydroponics

c) Photorespiration d) Antitranspirant

Q.8 Write in detail about pathway of water across the root cells and enlist the factors affecting process of absorption

Q.9 Define photoperiodism. Give the classification of plants on the basis of photoperiodism.

Q.10 Give the classification of plant growth substances and write in detail about physiological role of Auxine and Gibberelin in plant.

(P.T.O.)

11

SECTION "B"

Q.11 Fill in the blanks.

1) Guttation takes place through a specialized structure called_____.
2) _____ are called upward conducting tissue.
3) _____ is the most commonly used plant hormone for rooting of cuttings.
4) Deficiency of Mo causes _____disease.
5) Outer wall of the guard cell is _____ than inner wall.
6) For fruit ripening _____ is the important growth substance.
7) The net gain of ATP in aerobic respiration is_____.
8) Ca is _____element.

Q.12 a) Give full forms of the following.

1) CAM
2) PWP
3) R Q
4) CCC

b) State True or False.

1) Light reaction of Photosynthesis takes place in chloroplast.
2) End product of glycolysis is pyruvic acid.
3) R.Q. value of oil seed for eg. groundnut or linseed is one.
4) GA is a growth inhibitor.

✧✧✧✧✧✧✧✧✧✧✧

MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE

SEMESTER END EXAMINATION

B.Sc. (Agri.)

9

Semester	:	**III (Old)**	**Term**	:	**I**	**Academic Year**	: **2018-19**
Course No.	:	ECON 232	**Title**	:	**Production Economics and Farm Management**		
Credits	:	2(1+1)					
Day & Date	:	Wednesday, 21.11.2018	**Time**	:	9.00 to 11.00	**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 Define production economics. Discuss the objective and scope of agricultural production economics.

Q.2 Define iso-cost line. Determine the least cost combination by algebraic and graphic method.

Q.3 What is farm planning? State the characteristics of good farm plan.

Q.4 Define farm budgeting. Differentiate between partial and complete budgeting.

Q.5 What do you mean by production function? Explain different types of production functions.

Q.6 What is farm management? Enlist the principles of farm management and explain the principle of equi-marginal returns.

Q.7 State the different types of farming and explain in detail specialized farming.

Q.8 What is linear programming? Give the assumptions and limitations of LP.

Q.9 What is risk and uncertainty? Explain types of risk and uncertainty.

Q.10 Write short notes (Any Two).

a) Cost concepts
b) Types of enterprise relationships
c) Expansion path

SECTION "B"

Q.11 Define the following terms.

1) Depreciation
2) Farm Inventory
3) Marginal product
4) Iso-quant

Q.12 State True or False.

1) In mixed farming crop enterprise is combined with livestock.
2) When the MP is equal to AP, AP is at its maximum.
3) Product is the result of use of resources or service of resources.
4) Law of increasing returns is applicable to agriculture.

✧ ✧ ✧ ✧ ✧ ✧ ✧ ✧ ✧ ✧

MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END EXAMINATION

B.Sc. (Agri.)

Semester	: III (Old)	**Term**	: I	**Academic Year**	: 2018-19
Course No.	: ENGG 232	**Title**	: Introduction to Computer and Applications		
Credits	: 2(1+1)				
Day & Date	: Saturday, 17.11.2018	**Time**	: 9.00 to 11.00	**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 Draw a block diagram of computer and explain in brief about functions of its units. Enlist characteristics of computer.

Q.2 What is booting of computer? Differentiate between cold and warm booting.

Q.3 Enlist different input devices and write in brief about keyboard and mouse.

Q.4 Differentiate between RAM and ROM. Enlist different secondary storage devices.

Q.5 Write in brief about Disk Operating System and enlist limitations of it.

Q.6 Explain elements of Window with neat diagram.

Q.7 What is spreadsheet? Explain the procedure for creating graphs using MS- Excel.

Q.8 What are the features of word processing packages? Write uses of slide presentation software.

Q.9 What is internet? Explain in brief applications of internet.

Q.10 What is Database? Explain in brief the Database Management System (DBMS).

SECTION "B"

Q.11 Give full forms of the following.

1) DVD 2) ROM

3) ALU 4) LCD

Q.12 Fill in the blanks.

1) _____ printer prints all characters, letters and images as a pattern of dots.

2) QWERTY type of keyboard has _____ keys.

3) One Kilobyte is equivalent to _____ bytes.

4) _____ software is useful for preparation of slide show.

✧ ✧ ✧ ✧ ✧ ✧ ✧ ✧ ✧ ✧

MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END EXAMINATION
B.Sc. (Agri.)

Semester	: III (Old)	**Term**	: I	**Academic Year**	: 2018-19
Course No.	: ENTO 231	**Title**	: **Insect Morphology and Systematics**		
Credits	: 3(2+1)				
Day & Date	: Monday, 19.11.2018	**Time**	: 9.00 to 12.00	**Total Marks**	: 80

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 Describe the typical insect leg with well labeled diagram. Enlist modifications of insect leg with one example each.

Q.2 Describe the female reproductive system of cockroach with well labeled diagram.

Q.3 Enlist mouth parts in insects with examples. Describe chewing and biting type of mouth parts with well labeled diagram.

Q.4 Describe typical insect antenna. Explain types of antenna with examples.

Q.5 a) Write the characters of phylum arthropoda.
b) Describe the factors responsible for insect dominance on earth.

Q.6 Define metamorphosis. Describe types of metamorphosis with suitable examples.

Q.7 Write short notes (Any Two).
a) Insect integument
b) Types of larva
c) Wing coupling apparatus

Q.8 Describe digestive system of cockroach with well labeled diagram.

Q.9 a) Describe the types of pupa.
b) Write about the excretion in insects.

Q.10 Explain the nervous system of insect with well labeled diagram.

SECTION "B"

Q.11 Define the following terms.
1) Spiracle 2) Scelerite 3) Synapse 4) Species
5) Aestivation 6) Paedogenesis 7) Amphineustic 8) Hypognathus

Q.12 Answer in one sentence.
1) State the natural order of dragonfly.
2) Write the head position in red cotton bug.
3) Give exact location of Johnston's organ.
4) What is chorion?
5) What is parthenogenesis?
6) Who is the Father of biological classification?
7) Give the function of Malpighian tubules.
8) State the functions of afferent neurons.

✧ ✧ ✧ ✧ ✧ ✧ ✧ ✧ ✧ ✧

MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END EXAMINATION

B.Sc. (Agri.)

12

Semester	: **III (Old)**	**Term**	: **I**	**Academic Year**	: **2018-19**
Course No.	: **HORT 232**	**Title**	: **Production Technology of Vegetables and Flowers**		
Credits	: 2(1+1)				
Day & Date	: Thursday, 15.11.2018	**Time**	: 9.00 to 11.00	**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 Write in detail importance and scope of vegetables.

Q.2 Enlist the different types of vegetable gardens and describe in detail about kitchen garden.

Q.3 Write cultivation of tomato crop on the following points.

a) Soil and climate
b) Propagation and planting
c) Harvesting and yield
d) Important varieties

Q.4 Describe in detail production technology of cabbage based on the following points.

a) Soil and climate
b) Propagation and planting
c) Improved varieties
d) Harvesting and yield

Q.5 Write short notes. (Any Two).

a) Classification of vegetables based on plant part used.
b) Raising of seedling in chilli.
c) Pruning in rose

Q.6 Describe in detail production technology of okra based on the following points.

a) Soil and climate
b) Propagation and planting
c) Improved varieties
d) Important pests and diseases

Q.7 Complete the following table.

Sr. No.	Name of crop	Botanical name	Seed rate/ha	Varieties	Yield
1)	Ridge gourd				
2)	Cucumber				

Q.8 Describe in detail cultivation of chrysanthemum on the following points.

a) Soil and climate
b) Propagation and planting
c) Pinching or stopping
d) Harvesting and yield

Q.9 Describe in detail production technology of marigold based on the following points.

a) Important uses
b) Propagation and planting
c) Types and improved varieties
d) Harvesting and yield

Q.10 What are the different garden styles and types? Discuss in brief about formal garden.

(P.T.O.)

13

SECTION "B"

Q.11 Fill in the blanks.

1) Botanical name of potato is_____.
2) Tuberose is propagated by _____.
3) All green is a variety_____.
4) Rootstock used in rose is_____.

Q.12 Match the following pairs.

"A"	"B"
1) Brinjal	a) Contender
2) French bean	b) Convolvulaceae
3) Jasmine	c) Oleaceae
4) Sweet potato	d) *Solanum melongena*

✧✧✧✧✧✧✧✧✧✧✧

5

MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END EXAMINATION

B.Sc. (Agri.)

Semester	: **III (Old)**	**Term**	: **I**	**Academic Year**	: **2018-19**
Course No.	: PATH 232	**Title**	: **Principles of Plant Pathology**		
Credits	: 2(1+1)				
Day & Date	: Tuesday, 13.11.2018	**Time**	: 9.00 to 11.00	**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 do you mean by epidemiology? Write in short about the essential conditions required for epidemics.

Q.2 What is dissemination? Describe various agencies involved under continuous dissemination.

Q.3 Describe in short pre- existing structural defense mechanisms in plants.

Q.4 Enlist principles of plant disease management and write a note on eradication of plant diseases.

Q.5 Enlist various methods of application of fungicide? Explain the seed treatment methods.

Q.6 Describe in brief the cultural practices adopted for plant disease management.

Q.7 What is plant quarantine? Write about domestic quarantine with examples.

Q.8 What is biological control? Discuss various mode of action of biological control agents.

Q.9 How is biotechnology useful in management of plant diseases?

Q.10 Write concept and advantages of integrated plant disease management.

SECTION "B"

Q.11 Fill in the blanks.

1) _____ is an important and commonly used fungal bio agent for disease management.
2) A special absorbing structure formed by some parasitic fungi within the cells of the host is termed as_____.
3) _____ is the phenomenon of growth of one organism at the expense of other.
4) AK toxin is also known as_____.

Q.12 Define the following terms.

1) Fungicide
2) Perpetuation
3) Pathogenesis
4) Disease forecasting

✧ ✧ ✧ ✧ ✧ ✧ ✧ ✧ ✧ ✧