

**SWAMI RAMANAND TEERTH MARATHWADA
UNIVERSITY, NANDED.**

**B.Sc. GENERAL (SEMESTER PATTERN)
B.Sc. FIRST YEAR
HORTICULTURE - CURRICULUM**

With Effect from June - 2009

INTRODUCTION

Revising and updating of the curricula is the continuous process to provide an updated education to the students at large. Up till now there was wide diversity in the curricula of different Indian Universities which inhibited mobility of students in other universities or states. To ensure and have uniform curricula at UG levels in different Indian Universities, the UGC developed a model curriculum and forwarded the same to all the universities in the country to serve as a base in updating their respective curricula.

For developing the final draft of curriculum, the BOS in Horticulture took into account total number of teaching days available in a year and the guidelines given by the faculty of science of the S.R.T.M.U Nanded. The BOS in Horticulture held a couple of meetings in which there were thorough and critical discussions.

S.R.T.M.U. Nanded is having B.Sc. (General) Horticulture course. The course content has been designed on semester pattern.

The course content of each theory paper is divided into units and subunits by giving appropriate titles and subtitles. For each unit, total number of periods required and weightage of maximum marks is mentioned. At the end of each theory paper the list of selected reading material is provided. A list of practical exercises to be completed in the academic year is also given. Paper wise skeleton question paper is provided as a guideline to teachers, students and paper setters.

OBJECTIVES

1. To evolve uniform curricula in all the universities of the country and to provide mobility to students from one university or state to other.
2. To update curricula by introducing recent advances in the subject and enable the students to face NET, MPSC, UPSC and other competitive examinations successfully.
3. To create awareness among the students about the Horticulture and train them in the subject.
4. To improve the quality of laboratory and field work, for which study tours and excursions have been made compulsory so that the students can become familiar with the flora and ecosystems of that area.
5. To prepare such a dynamic curricula by incorporating innovative concepts and a multidisciplinary approach which can attract and develop interest among the students for selecting plant science as their career.

**B. Sc. HORTICULTURE (GENERAL)
(SEMESTER PATTERN)**

HORTICULTURE CURRICULUM – AN OUTLINE

Class	Paper No.	Title of Paper	Period s/ Practi cals	Time duratio n of Examin --ation	Maxim um Marks
B.Sc.I Semester-I	I (Theory)	Fundamentals of Horticulture.	45	3 Hrs.	50+10
	II (Theory)	Propagation and Nursery Management.	45	3 Hrs.	50+10
B.Sc.I Semester- II	III (Theory)	Production Technology of Tropical and Sub-tropical Fruit Crops.	45	3 Hrs.	50+10
	IV (Theory)	Production Technology of Arid, Minor and Plantation Fruit Crops.	45	3 Hrs.	50+10
B.Sc.I	V (Practical) Annual pattern	Practical based on theory papers of semester-I&II	20+4	4 Hrs.	60
B.Sc.II Semester- III	VI (Theory)	Production Technology of Tropical and Sub-tropical Vegetable Crops.	45	3 Hrs.	50+25
B.Sc.II Semester- III	VII (Theory)	Production Technology of Temperate Vegetable Crops.	45	3 Hrs.	50+25
B.Sc.II Semester- IV	VIII (Theory)	Ornamental and Landscape Gardening.	45	3 Hrs.	50+25
B.Sc.II Semester- IV	IX (Theory)	Commercial Floriculture.	45	3 Hrs.	50+25
B.Sc.II	X (Practical) Annual pattern	Practical based on theory papers VI and VII of semester-III	20+4	4 Hrs.	50

B.Sc.II	XI (Practical) Annual pattern	Practical based on theory papers VIII and IX of semester-IV	20+4	4 Hrs.	50
B.Sc.III Semester- V	XII (Theory)	Production Technology of Spices and Condiments Crops.	45	3 Hrs.	50+25
B.Sc.III Semester- V	XIII (Theory)	Production Technology of Medicinal and Aromatic Plants.	45	3 Hrs.	50+25
B.Sc.III Semester- VI	XIV (Theory)	Post Harvest Handling of Horticultural Crops.	45	3 Hrs.	50+25
B.Sc.III Semester- VI	XV (Theory)	Processing of Horticultural Crops.	45	3 Hrs.	50+25
B.Sc.III	XVI (Practical) Annual pattern	Practical based on theory papers of semester-I	20+4	4 Hrs.	50
B.Sc.III	XVII (Practical) Annual pattern	Practical based on theory papers of semester-II	20+4	4 Hrs.	50

**B. Sc. HORTICULTURE (GENERAL)
(SEMESTER PATTERN)**

(Paper wise weekly workload distribution)

Class	Paper No.	Theory periods per week	Practical periods per week
B.Sc.I Semester-I	I (Theory)	03	–
B.Sc.I Semester-I	II (Theory)	03	–
B.Sc.I Semester-II	III (Theory)	03	–
B.Sc.I Semester-II	IV (Theory)	03	-
B.Sc.I	V (Practical) Annual pattern	–	04
B.Sc.II Semester-III	VI (Theory)	03	–
B.Sc.II Semester-III	VII (Theory)	03	–
B.Sc.II Semester-IV	VIII (Theory)	03	–
B.Sc.II Semester-IV	IX (Theory)	03	-
B.Sc.II	X (Practical) Annual pattern	–	04
B.Sc.II	XI (Practical) Annual pattern	–	04
B.Sc.III Semester-V	XII (Theory)	03	–
B.Sc.III Semester-V	XIII (Theory)	03	–
B.Sc.III Semester-VI	XIV (Theory)	03	–
B.Sc.III Semester- VI	XV (Theory)	03	–
B.Sc.III	XVI (Practical) Annual pattern	–	04
B.Sc.III	XVII (Practical) Annual pattern	–	04

**B. Sc. Ist year HORTICULTURE CURRICULUM
(SEMESTER PATTERN)**

Class	Paper No.	Title of Paper	Periods/ Practicals	Time duration of Examination	Maximum Marks
B.Sc.I Semester-I	I (Th.)	Fundamentals of Horticulture.	45	3 Hrs.	50+10
B.Sc.I Semester-I	II (Th.)	Propagation and Nursery Management.	45	3 Hrs.	50+10
B.Sc.I Semester-II	III (Th.)	Production Technology of Tropical and Sub-tropical Fruit Crops.	45	3 Hrs.	50+10
B.Sc.I Semester-II	IV (Th.)	Production Technology of Arid, Minor and Plantation Fruit Crops.	45	3 Hrs.	50+10
B.Sc.I	V (Practical) Annual pattern	Practical based on theory papers of semester-I&II	20+4	4 Hrs.	60

Workload:

1. **Theory:** Per paper per week three periods
2. **Practical:** Per batch per week one practical (Three periods)

B. Sc. FIRST YEAR (HORTICULTURE)

**SEMESTER - I
THEORY PAPER – I**

FUNDAMENTALS OF HORTICULTURE

Periods – 45

Maximum Marks – 60

UNIT – I: Introduction to Horticulture

10 periods

1. Definition, branches, scope and economic importance of horticultural crops
2. Nutritive value of fruits and vegetables
3. Classification of horticultural crops based on
 - a. Climatic requirements
 - b. Season of growth
 - c. Plant parts used for consumption
 - d. Botanical classification
4. Horticultural zones of India and Maharashtra

UNIT – II: Principles of Horticulture

13 periods

1. Soil and climatic requirements of horticultural crops
2. Selection of site for establishment of orchard
3. Planning, layout and planting of orchard
4. Bearing habit, fruit bud differentiation and flower and fruit drop
5. Training and pruning
6. Fruitfulness and unfruitfulness
7. Cropping system

UNIT – III: Management Horticulture

12 periods

1. Orchard management
2. Nutrition management
3. Water management
4. Weed management
5. Plant protection

UNIT – IV: Applied Horticulture

10 periods

1. Mechanism of action and biological effect of following plant growth regulators:

- a. Auxins
- b. Gibberellins
- c. Cytokinins
- d. Ethylene

2. Special horticultural practices in:

Fruit crops:

- a. Bahar treatment
- b. Girdling
- c. Notching
- d. Ringing
- e. Bending

Vegetable crops:

- a. Earthing up
- b. Staking
- c. Blanching

Flower crops:

- a. Pinching
- b. Disbudding
- c. Deshooting

SELECTED READINGS (PAPER – I)

Sr.No.	Author/s	Title	Publication
1.	Chadha K. L. (2008)	Handbook of Horticulture	I.C.A.R., New Delhi.
2.	Kumar N.	Introductory Horticulture	Rajalaxmi Publications, veepamodu, T.N. 629 002.
3.	Edmond <i>et al</i>	Fundamentals of Horticulture	McGraw Hill Book Co., New York.
4.	Jules Janick	Horticultural Science	Surgeet Publications, Kernala Nagar, Delhi 7.
5.	Gopalswamy Iyengar, K. S. (1970)	Complete Gardening in India.	G. Kasturi Rangan, Banglore 18.
6.	Kunte, Y. H. and K. S. Yawalkar. (1970).	Complete Gardening in India.	G. Kasturi Rangan, Banglore 18.
7.	Jitendra Singh	Basic Horticulture	Kalyani Publications.
8.	A. S. Salaria	Horticulture at a Glance	Jain Brothers Publications.

**B. Sc. FIRST YEAR
HORTICULTURE
SEMESTER FIRST
THEORY PAPER - IST
FUNDAMENTALS OF HORTICULTURE**

Total periods: 45

Maximum marks: 60

Time duration of examination: 3 Hrs.

Unit wise distribution of periods and marks:

Unit	Periods	Maximum Marks
I	10	20
II	13	26
III	12	24
IV	10	20
Total	45	90

SKELETON OF QUESTION PAPER

**B.Sc. FIRST YEAR, HORTICULTURE
SEMESTER-I**

THEORY PAPER – I

FUNDAMENTALS OF HORTICULTURE

Date:-----/-----/200-----

Time:-----to-----

Time: Three hours

Maximum Marks: 50

- Note: -**
- (i) Attempt all questions
 - (ii) All questions carry equal marks
 - (iii) Draw neat and well labeled diagrams wherever necessary

Q.1. (Unit –I :)	Long Answer type	10
	Or	
	a. Short answer type	05
	b. Short answer type	05
Q.2. (Unit –II :)	Long Answer type	10
	Or	
	a. Short answer type	05
	b. Short answer type	05
Q.3. (Unit –III :)	Long Answer type	10
	Or	
	a. Short answer type	05
	b. Short answer type	05
Q.4. (Unit –IV :)	Long Answer type	10
	Or	
	a. Short answer type	05
	b. Short answer type	05
Q.5. Ten MCQ (Unit – I to IV)		10

**B.Sc. FIRST YEAR, HORTICULTURE
SEMESTER-I**

**THEORY PAPER – II
PROPAGATION AND NURSERY MANAGEMENT**

Periods – 45

Marks – 60

UNIT – I: PROPAGATION.

13 periods

1. Basic concept, types of plant propagation along with merits and demerits
2. Seed treatment, seed germination and seed dormancy
3. Polyembryony and apomixis
4. Stock - scion relationship
5. Factors affecting Budding and grafting

UNIT – II: Common origin method

13 periods

1. Cutting
 - a. Root cutting
 - b. Stem cutting
 - b. Leaf cutting
2. Layering
 - a. Simple layering.
 - b. Air layering.
 - c. Mound layering.
3. Specialized structures
 - a. Bulbs
 - b. Tubers
 - c. Rhizomes

UNIT – III: Separate origin method

10 periods

1. Budding
 - a. Shield budding
 - b. Patch budding
 - c. Ring budding
2. Grafting
 - a. Simple grafting

- b. Tongue grafting
- c. Veneer grafting

UNIT – IV: Nursery Management

9 periods

1. Definition, importance, scope and types
2. Site selection, components and layout of nursery
3. Media containers and propagation structures
4. After care in nursery
5. Nursery Act

SELECTED READINGS

- | | | | |
|----|--|---|--|
| 1. | Hartman, H. T. and D. E. Kester (1989). | Plant propagation principles and practices. | Prentice Hall of India, New Delhi. |
| 2. | Bose, T. K., B. S. Mitra and M. K. Sadhu (1986). | Propagation of tropical and sub-tropical crops. | Naya Prokash, Calcutta 6. |
| 3. | Garner, R. J., Chaudhri, S. A. (1976). | The propagation of tropical fruit trees. | FAO and CAB. |
| 4. | Venkatraman, L | Fruit nursery practices in India. | Directorate of extension, Ministry of food and agriculture, New Delhi. |
| 5. | Gopalswamiengar, K. S. | Complete gardening in India. | |
| 6. | Patil, A. V., (2000). | Ropvatika sangopan. | |

**B. Sc. FIRST YEAR
HORTICULTURE
SEMESTER FIRST
THEORY PAPER – IInd**

PROPAGATION AND NURSERY MANAGEMENT

Total periods: 45

Maximum marks: 60

Time duration of examination: 3 Hrs.

Unit wise distribution of periods and marks:

Unit	Periods	Maximum Marks
I	13	26
II	13	26
III	10	20
IV	09	18
Total	45	90

SKELETON OF QUESTION PAPER

**B.Sc. FIRST YEAR, HORTICULTURE
SEMESTER-I**

**THEORY PAPER – II
PLANT PROPAGATION AND NURSERY MANAGEMENT**

Date:-----/-----/200-----

Time:-----to-----

Time: Three hours

Maximum Marks: 50

- Note: -**
- (i) Attempt all questions.
 - (ii) All questions carry equal marks.
 - (iii) Draw neat and well labeled diagrams wherever necessary.

Q.1. (Unit –I :)	Long Answer type	10
	Or	
	a. Short answer type	05
	b. Short answer type	05
Q.2. (Unit –II :)	Long Answer type	10
	Or	
	a. Short answer type	05
	b. Short answer type	05
Q.3. (Unit –III :)	Long Answer type	10
	Or	
	a. Short answer type	05
	b. Short answer type	05
Q.4. (Unit –IV :)	Long Answer type	10
	Or	
	a. Short answer type	05
	b. Short answer type	05
Q.5. Ten MCQ (Unit – I to IV)		10

B. Sc. FIRST YEAR, HORTICULTURE

SEMESTER - II

THEORY PAPER – III

PRODUCTION TECHNOLOGY OF TROPICAL AND SUB-TROPICAL FRUIT CROPS

Periods – 45

Maximum Marks – 60

UNIT – I: Introduction to tropical and sub-tropical fruit crops **10 periods**

1. Importance of fruit growing in India and Maharashtra
2. Nutritive value of fruits
3. Area and production of India and Maharashtra
4. Exports and imports of fruits in India
5. Constraints in fruit production and remedies to overcome them

UNIT – II: Cultivation practices of tropical fruit crops **10 periods**

Origin, history, distribution, area and production, uses and composition, varieties, soil and climatic requirements, propagation, planting, training and pruning, manuring and fertilizer application, irrigation, intercropping, harvesting and yield disease and pests of tropical fruit crops mentioned below:

1. Banana
2. Guava
3. Papaya
4. Sapota

UNIT – III: Cultivation practices of sub-tropical fruit crops **12 periods**

Origin, history, distribution, area and production, uses and composition, varieties, soil and climatic requirements, propagation, planting, training and pruning, manuring and fertilizer application, irrigation, intercropping, harvesting and yield disease and pests of sub-tropical fruit crops mentioned below:

1. Citrus fruits:
 - a. Kagzi lime
 - b. Sweet orange
 - c. Mandarin
2. Grapes
3. Mango
4. Pomegranate

UNIT – IV: Major physiological disorders of following fruit crops 13 periods

1. Mango
 - a. Alternate bearing.
 - b. Spongy tissue
2. Citrus
 - a. Granulation
 - b. Gummosis
3. Bareness in grapes
4. Fruit cracking in pomegranate

SELECTED READINGS (PAPER – III)

1.	Bose, T. K. (1985)	Fruits of India – tropical and sub-tropical	Naya Prokash, Calcutta 6.
2.	Shnmughavelu, K.G. (1989)	Production technology of fruit crops.	Oxford and IBH, New Delhi.
3.	Cheema, G. S., S. S. Bhatt and K. C. Naik (1954)	Commercial fruits of india	McMillan and Co., Calcutta.
4.	Singh Sham, S. Krishmnamurthy and S. L. Katyal (1963)	Fruit culture in India	ICAR, New Delhi.
5.	Singh Ranji. (1969)	Fruits	National Book Trust, Delhi.
6.	Puri P. (1980)	Bryophyta	Atmaram & Sons. New Delhi.

**B. Sc. FIRST YEAR
HORTICULTURE
SEMESTER SECOND
THEORY PAPER – III**

PRODUCTION TECHNOLOGY OF TROPICAL AND SUB-TROPICAL FRUIT CROPS

Total periods: 45

Maximum marks: 60

Time duration of examination: 3 Hrs.

Unit wise distribution of periods and marks:

Unit	Periods	Maximum Marks
I	10	20
II	10	20
III	12	24
IV	13	26
Total	45	90

SKELETON OF QUESTION PAPER

B. Sc. FIRST YEAR, HORTICULTURE

SEMESTER - II

THEORY PAPER – III

PRODUCTION TECHNOLOGY OF TROPICAL AND SUB-TROPICAL FRUIT CROPS

Date:-----/-----/200-----

Time:-----to-----

Time: Three hours

Maximum Marks: 50

- Note: -**
- (i) Attempt all questions
 - (ii) All questions carry equal marks
 - (iii) Draw neat and well labeled diagrams wherever necessary

Q.1. (Unit –I :)	Long Answer type	10
	Or	
	a. Short answer type	05
	b. Short answer type	05
Q.2. (Unit –II :)	Long Answer type	10
	Or	
	a. Short answer type	05
	b. Short answer type	05
Q.3. (Unit –III :)	Long Answer type	10
	Or	
	a. Short answer type	05
	b. Short answer type	05
Q.4. (Unit –IV :)	Long Answer type	10
	Or	
	a. Short answer type	05
	b. Short answer type	05
Q.5. Ten MCQ (Unit – I to IV)		10

**B.SC. FIRST YEAR, HORTICULTURE
SEMESTER-II**

THEORY PAPER – IV

PRODUCTION TECHNOLOGY OF ARID, MINOR AND PLANTATION CROPS

Periods – 45

Marks – 60

UNIT – I: Introduction to arid, minor and plantation crops

10 periods

1. Importance of fruit growing in India and Maharashtra
2. Nutritive value of fruits
3. Area and production of India and Maharashtra
4. Exports and imports of fruits in India
5. Constraints in fruit production and remedies to overcome them

UNIT – II: Cultivation practices of arid fruit crops

10 periods

Origin, history, distribution, area and production, uses and composition, varieties, soil and climatic requirements, propagation, planting, training and pruning, manuring and fertilizer application, irrigation, intercropping, harvesting and yield disease and pests of arid fruit crops mentioned below:

1. Aonla
2. Ber
3. Custard Apple
4. Fig
5. Tamarind

UNIT – III: Cultivation practices of minor fruit crops

13 periods

Origin, history, distribution, area and production, uses and composition, varieties, soil and climatic requirements, propagation, planting, training and pruning, manuring and fertilizer application, irrigation, intercropping, harvesting and yield disease and pests of minor fruit crops mentioned below:

1. Jamun
2. Bael
3. Wood apple

UNIT – IV: Cultivation practices of plantation crops

12 periods

Origin, history, distribution, area and production, uses and composition, varieties, soil and climatic requirements, propagation, planting, training and pruning, manuring and fertilizer application, irrigation, intercropping, harvesting and yield disease and pests and processing of plantation crops mentioned below:

1. Coconut
2. Cashewnut
3. Tea
4. Coffee

SELECTED READINGS (PAPER – IV)

- | | | | |
|----|--|--|--|
| 1. | Singh Sham, S.
Krishnamurthy and S. L.
Katyal (1972) | Fruit culture in India | ICAR, New Delhi. |
| 2. | Hayes, W. B. (1970) | Fruit growing in India | Kitabistan, Allahabad. |
| 3. | Chundawat, B. S. (1989) | Arid fruit culture. | Oxford and IBH, New Delhi |
| 4. | Bose, T. K. (1995) | Fruits of India tropical and sub-tropical. | Naya Prokash, Calcutta 6. |
| 5. | Patil, A. V. and D. P. Bhore, (1986) | Koradwahoo Phalzaadachi Laagwad. | Continental Prakashan, vijaya nagar, Pune 30. |
| 6. | Shnmugavelu, K. G. and V. N. Madhaorao. | Spices and plantation crops | Madras popular Depot, Sterling Road, Nungambakkam. |
| 7. | Pillai, K. H. (1984) | Textbook of plantation crops | Vikas Publication, New Delhi |
| 8. | | Handbook of agriculture (1980) | ICAR, New Delhi. |
| 9. | | Cultivation practices of plantation crops | UAS, Bangalore. |

**B. Sc. FIRST YEAR
HORTICULTURE
SEMESTER SECOND
THEORY PAPER – IV**

PRODUCTION TECHNOLOGY OF ARID, MINOR AND PLANTATION CROPS

Total periods: 45

Maximum marks: 60

Time duration of examination: 3 Hrs.

Unit wise distribution of periods and marks:

Unit	Periods	Maximum Marks
I	10	20
II	10	20
III	13	26
IV	12	24
Total	45	90

SKELETON OF QUESTION PAPER

**B.Sc. FIRST YEAR, HORTICULTURE
SEMESTER-II**

THEORY PAPER – IV

PRODUCTION TECHNOLOGY OF ARID, MINOR AND PLANTATION CROPS

Date:-----/-----/200-----

Time:-----to-----

Time: Three hours

Maximum Marks: 50

- Note: -**
- (i) Attempt all questions
 - (ii) All questions carry equal marks
 - (iii) Draw neat and well labeled diagrams wherever necessary
-

Q.1. (Unit –I :)	Long Answer type	10
	Or	
	a. Short answer type	05
	b. Short answer type	05
Q.2. (Unit –II :)	Long Answer type	10
	Or	
	a. Short answer type	05
	b. Short answer type	05
Q.3. (Unit –III :)	Long Answer type	10
	Or	
	a. Short answer type	05
	b. Short answer type	05
Q.4. (Unit –IV :)	Long Answer type	10
	Or	
	a. Short answer type	05
	b. Short answer type	05
Q.5. Ten MCQ (Unit – I to IV)		10

B.Sc. FIRST YEAR, HORTICULTURE
PRACTICAL PAPER – V (Annual)
BASED ON THEORY PAPERS OF SEMESTER-I & II

Practical –24(20+4)

Maximum Marks – 60

Practical 1: Introduction to fruit crops

Practical 2: Study of garden tools and implements

Practical 3: Study of different media, containers and potting and repotting

Practical 4: Preparation of nursery beds and raising of nursery seedlings

Practical 5: Layout of square system of planting

Practical 6: Layout of diagonal system of planting

Practical 7: Layout of rectangular system of planting

Practical 8: Layout of hexagonal system of planting

Practical 9: Layout of triangular system of planting

Practical 10: Study of different methods of cutting

Practical 11: Study of different methods of layering

Practical 12: Study of different methods of budding

Practical 13: Study of different methods of grafting

Practical 14: Study of different methods of training

Practical 15: Study of different methods of pruning

Practical 16: Study of application of plant growth regulators in horticultural crops

Practical 17: Study of manures and fertilizer application methods followed in
horticultural crops

Practical 18: Study of irrigation methods followed in horticultural crops

Practical 19: Study of special horticultural practices followed in fruit crops

Practical 20: Identification and collection of important pests and diseases in fruit crops

Practical 21: Visit to a nursery unit

Practical 22-23: Visit to commercial orchards

Practical 24: Visit to a fruit market

SKELETON OF QUESTION PAPER
B.Sc. FIRST YEAR, HORTICULTURE
PRACTICAL PAPER – V
BASED ON THEORY PAPERS OF SEMESTER-I & II

Date: -----/-----/200----- **Batch No.** ----- **Time:** -----to-----

Time: *Four hours*

Maximum Marks: *60*

Note: -

- (i) *Attempt all questions*
- (ii) *All questions carry equal marks*
- (iii) *Draw neat and well labeled diagrams wherever necessary*

- | | | |
|-----|--|----|
| Q1. | Identify and describe the given specimen A and B. | 08 |
| | (Tropical fruit crops / Sub-Tropical fruit crops). | |
| Q2. | Identify, and describe the given specimen C and D. | 08 |
| | (Arid fruit crops / Minor fruit crops / Plantation crops). | |
| Q3. | Demonstrate the method of vegetative propagation of given specimen E. | 08 |
| | (Cutting/ layering/ grafting/ budding) | |
| Q4. | Draw a layout plan for planting in an orchard of given specimen F. | 06 |
| Q5. | Describe the method of irrigation in an orchard of given specimen G. | 06 |
| Q6. | Describe the method of application of Manures / Fertilizers in an orchard | 06 |
| | of given specimen H. | |
| Q7. | Identify and describe given spots I, J, K and L. | 08 |
| | (Garden tools and implements) | |
| Q8. | i. Record book | 05 |
| | ii. Submission | 05 |