

JSS MAHAVIDYAPEETHA

JSS COLLEGE OF ARTS, COMMERCE AND SCIENCE

(Autonomous, 'A' Grade and 'College with Potential for Excellence')

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DEPARTMENT OF BOTANY (UG)

HORTICULTURE CURRICULUM

Career Oriented Course

W.e.f

2021-2022

**PROFORMA FOR THE SCHEME OF STUDY AND
EXAMINATION OF THE CAREER ORIENTED**

**CERTIFICATE / DIPLOMA / ADVANCED DIPLOMA
COURSES IN HORTICULTURE**

	Semester	Paper and title	Theory Hrs. / Week	Practical Hrs. / Week	Duration of theory Exam	Duration of practical exam	Marks for theory exam	Marks for practical exam	Internal assessment marks theory	Internal assessment marks practical	Total marks for each subject
CERTIFICATE COURSE	I	Basics of Horticulture	2	2	2	2	50	20	20	10	100
	II	Nursery, Plant Propagation, Training, Pruning, Tillage, and Mulching.	2	2	2	2	50	20	20	10	100
DIPLOMA COURSE	III	Branches Of Horticulture	2	2	2	2	50	20	20	10	100
	IV	Gardening And Landscaping	2	2	2	2	50	20	20	10	100
ADVANCED DIPLOMA COURSES	V	Horticultural Exhibitions, Medicinal and Aromatic Plants, Schemes & Subsidies	2	2	2	2	50	20	20	10	100
	VI	Advanced Horticulture – II (Dissertation)	70 Dissertation				30 Viva – Voce				100
TOTAL											600

NOTE:

- The candidate should produce the valued and certified record during the practical examination.
- Sixth Semester Dissertation is for 70 marks and Viva-voce for 30 marks, Based on project report.

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LIST OF APPROVED PANEL OF EXAMINERS:

Sl. No	Name	Designation and DOB	Joining Date	Phone number
Internal Examiners				
1.	Dr.Prathibha S JSS College, Ooty Road, Mysore	Asso. Prof. 28/04/1964	28/08/1986	9243707241
2.	Gayathri Devi N Jss College, Ooty Road, Mysore	Asst. Prof.	01-01-2005	8050684736
3.	Kiran B L JSS College, Ooty Road, Mysore	Asst. Prof.	23-09-2015	9638219347
4.	Pooja N JSS College, Ooty Road, Mysore	Asst. Prof.	30-08-2017	9844210414
External Examiners				
5.	Dr. Ravikumar B S AVK College For Women, Hassan	Asso. Prof. 13/07/1962	16/07/1987	8861716456
6.	Mallikarjunamiah M N Maharani`s Science college For Women, Mysore	Asso. Prof. 05/11/1963	14/08/1992	9880006223
7.	Dr. Hemavathi C Govt. First grade college, Vijayanagar, Mysuru	Asso. Prof. 05/04/1966	17/08/1992	9980748813
8.	Dr. Vijay C R Maharani`s Science College For Women, Mysore	Asso. Prof. 01/10/1962	29/12/1992	9448028585
9.	Dr. Shivalingaiah Maharani`s Science College for Women, Mysore	Asst. Prof. 01/06/1968	08/01/1996	9036766869
10.	Dr. Purushotham S P Maharani`s Science College for Women, Mysore	Asst. Prof. 15/05/1967	02/08/1996	9448115524
11.	Dr. Lingaraju D P AVK College for Women, Hassan	Asst. Prof. 26/02/1965	23/10/2002	9108585024
12.	Dr. Basavaraju G L Govt College for Women, Mandya	Asst. Prof. 21/07/1976	30/01/2004	
13.	Dr. Devika M Saradavilas College, Mysore	Asst. Prof. 14/03/1970	14/12/2005	9880024483
14.	Dr. Pruthviraj Sri Mahadeshwara Govt. First grade college	Asso. Prof.		9448925262
15.	Dr. Nataraju Maharani`s Science College for Women, Mysore	Asso. Prof.		9448033901
16.	Dr. Suresh N S Maharani`s Science College for Women, Mysore	Asst. Prof. 25/02/1975	02/05/2006	9242243601
17.	Dr. Jayalakshmi B Maharani`s Science College for Women, Mysore	Asst. Prof. 18/11/1974	14/07/2006	9482640645
18.	Sowmya H K Govt Science College,Hassan	Asst. Prof. 18/06/1970	22/12/2007	7338466887
19.	Dr. Thoyajaksha Govt Science College, Hassan	Asst. Prof. 20/07/1970	24/12/2007	9743779983
20.	Sandhya Rani D Maharani`s Science College for Women, Mysore	Asst. Prof. 24/08/1972	24/12/2007	9448602597
21.	Dr. Pushpalatha H G Maharani`s Science College for Women, Mysore	Asst. Prof. 23/12/1979	26/12/2007	9480442844
22.	Dr. Ashok N Pyati Maharani`s Science College for Women, Mysore	Asst. Prof. 22/04/1970	28/12/2007	7204661365
23.	Dr. Deepa Hebbar Maharani`s Science College for Women, Mysore	Asso. Prof.		9632869690
24.	Indushree	Asst. Prof.		8151917465

	PES College, Mandya			
25.	Dr. Lalitha V Maharani`s Science College for Women, Mysore	Asst. Prof.		8105004148
26.	Revanamaba B Maharani`s Science College for Women, Mysore	Asst. Prof.		9448528471
27.	Dr. Sharvani, K.A Yuvarajas college, Mysore.	Asst. Prof.		9845885896
28.	Dr. Krishna Yuvarajas college, Mysore.	Asst. Prof.		
29.	Dr. Krishnamurthy Yuvarajas college, Mysore.	Asst. Prof.		
30.	Kalpashree Yuvarajas college, Mysore	Asst. Prof.		8088413446
31.	Dr. Anil Kumar Yuvaraja College, Mysuru	Asst. Prof.		8970945497
32.	Dr. Girijamba Maharani`s Science College for Women, Mysore	Asst. Prof.		9945616792
33.	Dr. Netra Maharani`s Science College for Women, Mysore	Asst. Prof.		9620782198
34.	Dr. Poornima Yuvaraja College, Mysuru	Asst. Prof.		8217642534
35.	Nayana, K. N. Yuvaraja College, Mysuru	Asst. Prof.		9964041544
36.	Dr. Shamala Maharani`s Science College for Women, Mysore	Asst. Prof.		7019453250

UGC SPONSERED CAREER ORIENTED COURSE IN HORTICULTURE

Aim and objectives of the course:

1. To provide students with a broad educational background, which in addition to emphasizing agricultural sciences, gives an appreciation of horticulture's role in augmenting economic growth, development and improvement of society.
2. To prepare people enrolled in horticultural courses to contribute to public policy formulation through their own personal development as informed citizens.
3. To promote the importance of horticulture in food, medicinal and ornamental plant production, providing employment, improving the environment, creating and managing sports and recreation facilities, as one of the main leisure pursuits-gardening

Scope and relevance:

1. The Horticulture has gained importance in recent years as a significant component of agriculture. Summarizing the advantages of horticulture, it is stated that, horticultural crops provide better food, higher income- improving the economic status of the farmers, all the year round occupation to the farm population engaged in production, transportation, processing and marketing operations in addition to the entrepreneurs.
2. Horticultural farming promotes the development of natural resources, yields higher returns from land, enhances the land values, creates a better purchasing power among the people and as a consequence adds to the general prosperity.
3. Horticultural crops play an important role in Commerce, particularly in export trade and food processing industry, besides their value in human consumption.
4. Career opportunities include farm/ estate managers, plantation experts, supervisors, project coordinators, landscape architects and consultants, floral designers and horticultural therapists etc...
5. Professional qualification, combined with an inclination towards gardening produce efficient floriculturists, landscaping professionals.
6. Horticulture has also played a significant role in women empowerment, providing employment opportunities to them in mushroom cultivation, floriculture & self employment. Horticultural shows and exhibitions, bonsai, indoor and terrace gardening, rockery, dish and bottle gardening, vegetable seed production etc.
7. Help to face PG CET exams
8. Enlighten the society regarding plants & their importance.

Eligibility Criteria for Admission:

STUDENTS OF SCIENCE STREAM

Course No. 1: Certificate course in Horticulture

Those who complete I and II Semesters successfully are eligible.

Course No. 2: Diploma in Horticulture

With certificate in Horticulture, those who complete III & IV semester successfully are eligible.

Course No. 3: Advanced Diploma in Horticulture

With Diploma in Horticulture, those who complete V and VI Semesters successfully are eligible.

NOTE: The student has to attend 75% of the classes that held in each semester would be eligible for taking up the Final Exams.

CAREER ORIENTED COURSE

COURSE: HORTICULTURE

Certificate Course	- One year (I and II Semesters)
Diploma Course	- Two years (I to IV Semesters)
Advanced Diploma Course	- Three years (I to VI Semesters)

CERTIFICATE COURSE

I SEMESTER THEORY

Paper code: HRA010

30 Hours
2 hrs/Week

Basics of Horticulture

Total Marks 70: 50(Theory) +20 (Internal Assessment-Test)

- CO1: Scope and importance of horticulture, branches of horticulture,
CO2: Basic requirements like soil, Manure, fertilizer. Management for horticultural crops. Organic farming practices Irrigation - methods and water management.
CO3: Application of growth regulators in horticultural crops.
CO4: Knowledge about types of Garden plants.

UNIT I- Introduction to Horticulture (2 Hours)

Definition, Branches, Scope and Importance .

UNIT II- Basic requirements of Horticulture: (14 Hours)

- 1) **Soils:** Types, Physical characteristics
- 2) **Climate:** Types Humid, Arid and Semiarid. Temperature, Relative humidity and Rainfall,
- 3) **Garden implements and tools**
- 4) **Manures, Fertilizers & improvement of soil fertility:** introduction, important organic manures, chemical fertilizers, methods of application, nutrient requirements of vegetable crops, time of application.
- 5) **Organic Farming:** Organic farming practices – Raising of green manure crops (Leguminous Crops).
- 6) **Irrigation and water management:** introduction, factors determining irrigation, annual precipitation, period of moisture depletion, stages of the crops, types of the crops, soil types, rate of absorption by plants, nature of crops, system of irrigation, surface irrigation, sub soil irrigation, overhead system of irrigation.

UNIT III- Plant growth regulators in Horticulture: (8 Hours)

Introduction, induction, breaking of seed dormancy, fast growth of seedling, control of growth vigor, plant tissue culture, control of flowering, flower thinning, modification of sex expression, fruit thinning, induction of parthenocarpy and fruit ripening, control of fruit drops, weed control, control of plant growth.

UNIT IV- Classification of garden plants: (6 Hours)

Introduction, Annuals, Biennials, Perennials, Shrubs, Trees, Climbers, Succulents, Cacti, Ferns, Gymnosperms, Palms, Orchids, Bulbous Ornamentals.

Paper code: HRA010

**Certificate Course
Basics of Horticulture
I Semester - Practicals**

2 hrs/Week

Total Marks 30: 20(Theory) + 10 (Internal Assessment-Test)

1. Study of soil-types, water holding capacity.
2. Tools and Equipments used in Horticulture.
3. Identification of manures.
4. Study of methods of composting and making Vermicompost.
5. Biofertilizers – *Rhizobium*, *Azotobacter*, Phosphotisers. VAM
(Vesicular Arbuscular Mycorrhizal fungi, Blue green algae– Azolla.
6. Systems of irrigation
7. Classification of garden plants

I COC., I Semester
Basics of Horticulture
Blue print of theory question paper

Time: 2:00 Hours

Max. Marks: 50

Units	Hours Allotted	No. of questions from each category			Total Marks 50
		2marks (5/8)=10	5marks (4/6)=20	10marks (2/4)=20	
UNIT I: Introduction to Horticulture	02	2×1=2	5×1=5	--	07
UNIT II: Basic requirements of Horticulture	14	2×4=8	5×2=10	10×2=20	38
UNIT III: Plant growth regulators in Horticulture	08	2×2=4	5×2=10	10×1=10	24
UNIT IV: Classification of garden plants	06	2×1=2	5×1=5	10×1=10	17
Total	30	2×8=16	5×6=30	10×4=40	86

Paper code: HRA010

**I Semester Practicals
Scheme of Practical exam
Basics of Horticulture**

Time: 2 Hours

Max. Marks: 20

I. Identify 'A' and 'B'

2x2= 4 marks

(A-Soil Types- Sandy, Loamy, Black Soil,
B-Manures- Compost, *Rhizobium*, Urea)

II. Perform the following experiment 'C'.

4 marks

(C- Water holding capacity/ Arc Auxanometer Experiment)

III. Write critical notes 'D', 'E' & 'F'

2x3=6 marks

(D, E & F- Tools and Equipments-Pruning Shear, Hedge Shear, Digging Fork, Pick
Axe, Spade, Rose Can)

IV. Comment on 'G', 'H' & 'I'

2x3=6 marks

(G- Systems of Irrigation-Surface/Drip/Sub Soil/Overhead Irrigation
H & I - Garden Plants- *Aloe vera*, *Opuntia*, *Cycas*, *Areca lutescens*, *Vanda*)

Note: Each student should submit the **duly valued and certified practical record/manual/submissions** at the time of practical examination.

Paper code: HRB010

CERTIFICATE COURSE

II Semester- Theory

Nursery, Plant Propagation, Medicinal & Aromatic Plants

30 Hours

2 hours/week

CO1: Nursery: Establishment & requirements

CO2: Management of Nursery

CO3: Plant Propagation methods

CO4: Knowledge about types, purpose of Training, pruning, Tillage and Mulching,
Weed management.

UNIT I: Establishment of Nurseries:

(8 Hours)

Definition, importance of nurseries, classification of nurseries, and management of nurseries

Basic requirements for Nurseries:

- 1) Agro-climatic conditions
- 2) Topography
- 3) Selection of site
- 4) Selection of soil
- 5) Seed bed preparation
- 6) Water supply and irrigation
- 7) Parts of nursery- a) Building structures, b) Propagating structures- raising of seedlings.

UNIT II: Management of nursery

(6 Hours)

- 1) Irrigation
- 2) Nutrition
- 3) Weed control
- 4) Plant protection
- 5) Uprooting, packing and transplantation

UNIT III: Plant propagation:

(6 Hours)

Introduction, sexual propagation- advantages, disadvantages, vegetative propagation- advantages and disadvantages, cuttage, layerage- ground layering,

air layering, budding, graftage- principles and methods, micro propagation, transplanting.

UNIT IV: Training and pruning, tillage, mulching and (10 Hours)

weed management: Introduction to training- principles, methods, training with and without support, pruning- thinning out, heading back, uses, special techniques and root pruning, ringing, notching, smudging, bending, coppicing, pollarding, lopping, pinching, disbudding, containment pruning, thinning.

Paper code: HRB010

**CERTIFICATE COURSE
II SEMESTER- Practicals**

Nursery, Plant Propagation, Medicinal & Aromatic Plants

2 hrs/Week

Total Marks 30: 20(Theory) + 10 (Internal Assessment-Test)

1. Types of Nurseries
2. Plant propagation:
 - a. Cuttage
 - b. Layering
3. Plant propagation
 - a. Grafting
4. Training and pruning- photographs
5. Inorganic and organic mulching
 - a. Tillage- Man, Animal and machine
 - b. Powered tillages
6. Common weeds of horticulture

**I COC., II Semester
Nursery, Plant Propagation, Medicinal & Aromatic Plants**

Blue print of theory question paper

Time: 2:00 Hours

Max. Marks: 50

Units	Hours Allotted	No. of questions from each category			Total Marks 50
		2marks (5/8)=10	5marks (4/6)=20	10marks (2/4)=20	
UNIT I: Establishment of Nurseries	08	2×2=4	5×2=10	10×1=10	24
UNIT II: Management of Nurseries	06	2×2=4	5×1=5	10×1=10	19
UNIT III: Plant propagation	06	2×1=2	5×1=5	10×1=10	17
UNIT IV: Training and pruning, tillage, mulching and weed management	10	2×3=6	5×2=10	10×1=10	26
Total	30	2×8=16	5×6=30	10×4=40	86

Paper code: HRB010

**Certificate Course
Scheme of Practical Exam
II Semester Practicals**

Nursery, Plant Propagation, Medicinal Plants & Aromatic Plants

Time: 2 Hours

Max. Marks: 20

- I. Planning, layout and establishment of 'A'** **4 marks**
A- Nursery
- II. Perform the following experiments 'B', 'C' & 'D'** **2x3=6marks**
B- Grafting- Wedge /Approach
C- Layering- Simple/Compound/Trench/Air layering
D- Budding- T- budding/Patch budding
Cutting- Leaf/ Root/ Stem
- III. Identify with reasons 'E' & 'F'** **2x2=4marks**
E- Tillage- Animal driven/Machine Driven/Man Driven Tillage
Mulching- Organic Mulching/ Inorganic Mulching
F- Common Weeds of Horticulture- Congress weed/Tridax/Digitaria/
Amaranthus
- IV. Comment on 'G', 'H' & 'I'** **2x3=6 marks**
G & H- Pruning (Types as mentioned in theory)
I- Training (Open/ modified/ central)

Note: Each student should submit the **duly valued and certified practical record/manual/submissions** at the time of practical examination.

DIPLOMA COURSE

III SEMESTER THEORY

Paper code: HRC010

30 Hours
2 hrs/Week

BRANCHES OF HORTICULTURE

CO1: Importance, nutritive value, economic value and Cultivation of Fruits and vegetables.

CO2: Preservation methods of vegetables and fruits.

CO3: knowledge about Scope and importance of commercial floriculture in India

CO4: Knowledge about cultivation of trees and arboreta

Knowledge about Harvesting and handling of horticultural products.

UNIT I:

(10 Hours)

- 1) **Olericulture:** Introduction, importance of vegetable cultivation, classification of vegetables (according to source of plant parts and season), current status of vegetables in India, cultivation of vegetables, bottlenecks/ limitations in vegetable cultivation. Cultivation of Tomato & Onion.
- 2) **Fruit culture (Pomology):** Introduction, importance of fruits from social point of view, in art and culture, religious importance, general utility, nutritive and economic value, classification of fruits based on climatic adaptability. Pomology in Indian scenario. Cultivation of Mango & Banana.
- 3) **Orchards:** introduction, planning, layout and establishment of orchard. Orchard cultivation.

UNIT II: Preservation of fruits and vegetables:

(05 Hours)

Introduction, preservation methods, preparation of jam, jelly, squash, syrups and pickles.

UNIT III: Floriculture:

(05 Hours)

Introduction, importance of Floriculture from social, economic, health and aesthetic point of view. Marketing and floristry in Indian scenario. Future and scope of Floriculture in India- employment opportunities. Cultivation of Rose & *Chrysanthemum*.

UNIT IV:

(10 Hours)

- 1) **Arboriculture:** introduction, cultivational aspects of trees, common shade trees, benefits of arboreta.
- 2) **Harvesting and handling of horticultural products:** maturity indices, types of harvesting (manual, mechanical, chemical). Post harvest handling (washing, sorting, grading, waxing, packaging, labeling, storage)

Diploma Course
Branches of Horticulture

III SEMESTER

Paper code: HRC010

Practicals

2 hrs/Week

Total Marks 30: 20(Theory) + 10 (Internal Assessment-Test)

1. Introduction & cultivation of vegetables- Onion, Tomato, Potato, Lady's finger
2. Introduction & cultivation of fruits- Mango, Banana, Pomegranate, Grapes & Guava.
3. Planning & layout of Orchards
4. Preservation of fruits and vegetables
5. Identification and cultivation of flowers- Rose, Tuberose, *Gerbera*, *Anthurium*, *Chrysanthemum*, Jasmine
6. Identification of avenue trees
7. Post harvesting techniques

Note: Each student should submit the **duly valued and certified practical record/manual/submissions** at the time of practical examination.

Diploma Course
II COC., III Semester
Branches of Horticulture
Blue print of theory question paper

Time: 2:00 Hours

Max. Marks: 50

Units	Hours Allotted	No. of questions from each category			Total Marks 50
		2marks (5/8)=10	5marks (4/6)=20	10marks (2/4)=20	
UNIT I: Olericulture, Fruit culture & Orchard	10	2×3=6	5×2=10	10×1=10	26
UNIT II: Preservation of fruits and vegetables	05	2×1=2	5×1=5	10×1=10	17
UNIT III: Floriculture	05	2×1=2	5×1=5	10×1=10	17
UNIT IV: Arboriculture	10	2×3=6	5×2=10	10×1=10	26
Total	30	2×8=16	5×6=30	10×4=40	86

Paper code HRC010

**Diploma Course
II COC., III Semester
Branches of Horticulture
Scheme of Practical exam**

Max. Marks: 20

I. Planning layout and establishment of Orchard 'A'. 6marks

II. Cultivation of vegetables and fruits 'B' and 'C'. 2X2=4marks

B- (Onion, Tomato, Potato, Lady's Finger)

C- (Mango, Banana, Pomegranate, Grapes & Guava)

III. Identify and comment on 'D' and 'E'. 2X2=4marks

D- (flowers- Rose, Tuberose, *Gerbera*, *Anthurium*, *Chrysanthemum*)

E- (Avenue trees- *Cassia*, *Albizia*, *Spathodia*, Rain tree).

IV. Comment on 'F', 'G' & 'H' 2X3=6marks

F- Jam, Jelly, Squash, Syrups and Pickles

G- Post harvesting techniques.

H- Preservation methods- Drying, Canning, Pickling, Fermenting, Freezing, Salting

Note: Each student should submit the **duly valued and certified practical record/manual/submissions** at the time of practical examination.

Paper code: HRD010

Diploma Course

IV SEMESTER

Theory

30 Hours

2 hrs/Week

Gardening and Landscaping

CO1: knowledge about components, types, styles of Gardening and Landscaping.

CO2: Awareness about water, terrace gardens, Rockery.

CO3: knowledge about indoor gardening methods and bonsai.

CO4: Awareness about Kitchen gardening and lawn making.

UNIT I: Garden and its parts: (12 Hours)

- 1) Introduction, living elements, hedges, edges, trees, flower beds, lawn, shrubs, climbers and creepers, paths, arches, pergola, rockery, carpet beds, topiary, trophy, sunken garden, water garden, non living elements.
- 2) Gardening: Introduction, Formal style, Informal style, planning a garden, creating a garden, establishment of the garden.
- 3) Landscaping: Home garden, Public garden. Educational institution, commercial complexes, companies.

UNIT II: Water gardens, terrace gardens (roof garden) rockery:

(08 Hours)

- 1) **Water gardens:** Introduction, lily pool, Formal and Informal pools.
- 2) **Terrace gardens (roof garden):** Introduction, components of roof garden.
- 3) **Rockery:** Introduction, components of rock garden, importance.

UNIT III: Indoor gardening and Bonsai: (04 Hours)

Introduction, potted plants, hanging baskets, bonsai, bromeliad tree, terrarium, bottle garden, and dish garden.

UNIT IV: Kitchen garden and lawn making: (06 Hours)

- 1) **Kitchen garden:** Introduction, layout and establishment of Kitchen garden.
- 2) **Lawn making:** Introduction, grasses useful for lawns, Astroturf.

Diploma Course

IV SEMESTER

Paper code: HRD010

Practicals

2 hrs/Week

Total Marks 30: 20(Theory) + 10 (Internal Assessment-Test)

- 1) Study of Garden and its parts
 - a) Living Elements- hedges, edges, trees, flower beds, lawn, shrubs, climbers
- 2) a. Living Elements- creepers, paths, arches, pergola, rockery, carpet beds, topiary, trophy, sunken garden, water garden
 - b. Non Living Elements.
- 3) Landscaping
- 4) Study of Water gardens
- 5) Study of Terrace gardens & Rockery
- 6) Cultivation of potted plants
- 7) Bonsai culture
- 8) Hanging Baskets, Bromeliad Tree, Terrarium, Bottle Garden, And Dish Garden
- 9) Kitchen Garden & Lawn

Diploma Course
II B.Sc., IV Semester

Gardening and Landscaping
Blue print of theory question paper

Time: 2:00 Hours

Max. Marks: 50

Units	Hours Allotted	No. of questions from each category			Total Marks 50
		2marks (5/8)=10	5marks (4/6)=20	10marks (2/4)=20	
UNIT I: Garden and its parts	12	2×3=6	5×2=10	10×2=20	36
UNIT II: Water gardens, terrace gardens (roof garden) rockery	08	2×2=4	5×2=10	10×1=10	24
UNIT III: Indoor gardening and Bonsai	04	2×1=2	5×1=5	--	07
UNIT IV: Kitchen garden and lawn making	06	2×2=4	5×1=5	10×1=10	19
Total	30	2×8=16	5×6=30	10×4=40	86

Paper code: HRD010

**Diploma Course
II COC., IV Semester
Gardening and Landscaping
Scheme of practical exam**

Max. Marks: 20

- I. Planning layout and establishment of ‘A’** **6marks**
(Kitchen garden/lawn making/terrace garden)
- II. Identify and critically comment on ‘B’, ‘C’ & ‘D’** **2x3=6marks**
B- Living elements
C- Non Living elements
D- Hanging baskets, bromeliad tree, terrarium, bottle garden, and dish garden
- III. Perform minor experiment ‘E’** **4 marks**
(Cultivation of Potted Plants/Water Garden/Rockery)
- IV. Perform minor experiment ‘F’** **4 marks**
(Steps in bonsai culture/landscaping of home garden/ landscaping of public garden/ landscaping of educational institution garden)

Note: Each student should submit the **duly valued and certified practical record/manual/submissions** at the time of practical examination.

Paper code: HRE010

Advanced Diploma Course
V Semester- Theory
Horticultural Exhibitions, Schemes & Subsidies

30 Hours

2 hrs/Week

CO1: Knowledge about Green house, Hydroponics and Industrial green belt plants.

CO2: Awareness about different styles of flower display and horticultural shows

CO3: Study of Medicinal and Aromatic Plants Classification of Medicinal plants and it's application in diseases

CO4: Knowledge about schemes, Subsidies and extension programs related to Horticulture.

UNIT I: Green House and Hydroponics: (04 Hours)

1) Green House: Introduction, types and significance.

2) Hydroponics (soil-less culture): Introduction, types- water culture, sand culture, gravel culture, aeroponics, and scope.

3) Plants for industrial green belt

UNIT II: Display of flowers & Horticultural show (14 Hours)

Display of flowers: Introduction, flower arrangement, types, western style, eastern style, components of flower arrangements, conditioning of flowers, arranging the flowers in the container, ikebana, dry decoration, preservation methods, dried arrangement, cut flowers, and bouquets.

Horticultural show: Introduction, eligibility of gardens, exhibition of roots, vegetables, cut flowers, pot plants. Exhibition of flower arrangement, vegetable carving and rangoli.

UNIT III: Medicinal And Aromatic Plants: (06 Hours)

Definition: medicinal plants, aromatic plants, introduction & historical account of medicinal and aromatic plants, benefits of herbal medicines. Constituents of medicinal & aromatic plants, Classification of medicinal plants

according to the primary effect on the human body; medicinal plants for Diseases of Central nervous system, Cardiovascular system, Gastrointestinal system, Liver, gall bladder, kidney & urinary tract, Dermatological diseases, Cancer, Rheumatoid arthritis, Inflammatory diseases, Spasmolytics & analgesics, Respiratory diseases, Alcohol addiction, Anthelminthic, antiseptic, antimicrobial, astringents

UNIT IV: Schemes, Subsidies and extension programmes: (06 Hours)

- 1. Schemes:** Available from banks, Departments and Private organizations for developing entrepreneurships in Horticulture. (Nurseries/ Agriclinics/ Hopcoms/ NABARD/ National Horticulture Board (NHB).
- 2. Extension programmes:** Agro Horticultural Societies, Krushi Vignan Kendras (KVK), Krushi Bhavans.

Paper code: HRE010

Advanced Diploma Course

V Semester- Practicals

Horticultural Exhibitions, Schemes & Subsidies

Total Marks 30: 20(Theory) + 10 (Internal Assessment-Test)

2 hrs/Week

1. Study of Green House
2. Hydroponics
3. Types of flower arrangement
4. Ikebana
5. Vegetable carving and Horticultural exhibition through photographs
6. Study Of Vegetable, Fruit, Flower Rangoli And Mixed Rangoli
7. Medicinal Plants & Aromatic plants
8. Entrepreneurships in Horticulture

Advanced Diploma Course
III COC., V Semester
Horticultural Exhibitions, Schemes & Subsidies
Blue print of theory question paper

Time: 2:00 Hours

Max. Marks: 50

Units	Hours Allotted	No. of questions from each category			Total Marks 50
		2marks (5/8)=10	5marks (4/6)=20	10marks (2/4)=20	
UNIT I: Green House and Hydroponics	04	2×1=2	5×1=5	--	07
UNIT II: Display of flowers & Horticultural show	14	2×4=8	5×2=10	10×2=20	38
UNIT III: Medicinal And Aromatic Plants	06	2×2=4	5×1=5	10×1=10	19
UNIT IV: Schemes, Subsidies and extension programmes	06	2×1=2	5×2=10	10×1=10	22
Total	30	2×8=16	5×6=30	10×4=40	86

Paper code HRE010 Advanced Diploma Course
Horticultural Exhibitions, Schemes & Subsidies
V Semester
Scheme of Practical exam

Max. Marks: 20

- | | |
|---|---------------------|
| I. Perform the major experiment ‘A’
(Fruits/ Vegetables/ Grains/Flower/ Mixed Rangoli) | 5marks |
| II. Planning layout and establishment of green house ‘B’. | 4marks |
| III. Identify and critically comment on ‘C’- hydroponics. | 2marks |
| IV. Perform the experiment ‘D’
(D- Vegetable carving) | 4marks |
| V. Medicinal Plants & Aromatic plants ‘E’ & ‘F’
E- Medicinal plants
F- Aromatic plants | 2×1.5=3marks |
| VI. Viva-Voce | 2 marks |

Advanced Diploma Course

VI Semester

Paper code: HRF010

Max.Marks:70 + 30

Advanced Horticulture – II

CO: Student activities - related to field study, Seed companies, good purchasing units, storage units, Horticulture marketing etc. and submission of a report.

These students have to study activities of different areas like field study / seed

Companies / food processing units / nursery management / storage units / horticulture marketing areas / on job training in different institutions/ or any other aspects pertaining to Horticulture.

Each student has to **submit a project report** on allotted Field of study He should also go to the field, study, collect data, analyze, compile and prepare a report.

He/ she have to prepare project report for Horticulture crops to take financial aid from the bank and other such agencies.

1. Namadhari seed company, Bangalore.
2. Lab. Land Biotech, Mysore.
3. B.V. Pandit, Nanjangud (Ayurvedic Park)
4. Local Nurseries
 - (a) Bhudevi Nursery
 - (b) N. S. Nursery
 - (c) Deccan Nursery
 - (d) Nurserymen co-operative society
 - (e) Swadeshi Biotech, Mysore
 - (f) Visit to land scaping garden spots at different private and public institutions.

**SCHEME OF THEORY EXAMINATION FOR UGC CAREER
ORIENTED COURSE IN HORTICULTURE
(Applicable to Semester I to V)**

Time: 02 Hours

Max. Marks: 50

**I. Answer any FIVE of the following:
(08 questions to be given and 05 to be answered)**

2 x 5 = 10

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.

**II. Answer any FOUR of the following
(6 questions to be given and 4 to be answered) – Short answer type**

5 x 4 = 20

- 9.
- 10.
- 11.
- 12.
- 13.
- 14

**III. Answer any TWO of the following
(4 questions to be given and 2 to be answered) – Long answer type**

10 x 2 = 20

- 15.
- 16.
- 17.
- 18.

REFERENCES

- 1) Complete gardening in India : Gopalaswamy Iyengar
- 2) Progressive Floriculture : I.S. Yadav & M.L. Choudhary
- 3) Floriculture in India : G.S. Randhwa
- 4) Text book of Horticulture : ICAR Publications
- 5) Vegetable for the tropical region : Premnath
- 6) Ornamental Horticulture : J.B. Edmond
- 7) Hand book of Medicinal Plants : S.K. Battacharjee
- 8) Hand book of Aromatic and plantation : S.K. Battacharjee
crops
- 9) Improved packages of practices in : UAS Dharwad and Bangalore
Horticulture crops
- 10) Medicinal and Aromatic plants : Farooqui
cultivation
- 11) ICAR 1969 Hand book of Agriculture New Delhi
- 12) Textbook of Economic Botany : Robert Hill
- 13) Propagation of Horticultural Plants : Adriane and Brisin
- 14) Plant propagation-principles & practices : Hartman. H.T. & D.E. Kester
- 15) Handbook of Mushrooms : Nita Bahl
- 16) Exotica pictorial cyclopedia of : Dr. Alfred Byrd Graf
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