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

CERTIFICATE/DIPLOMA/ADVANCEDDIPLOMACOURSESINHORTICULTURE

Semester	Paperandtitle	Theory Hrs. /Week	Practical Hrs/Week	Duration of theory exam	Durationof practicale xam	Marks for theory exam	Marks for practical exam	Internal assessment marks theory	Internal Assessment marks practical	Totalmarksfor eachsubject
I	Basics of Horticulture	2	2	2	P1-2hrs.	50	20	15	15	100
II	Nursery, Plant Propagation, Medicinal& Aromatic Plants	2	2	2	P2-2 hrs.	50	20	15	15	100
III	Branches Of Horticulture	2	2	2	P3- 2hrs.	50	20	15	15	100
IV	Gardening And Landscaping	2	2	2	P4- 2hrs.	50	20	15	15	100
V	Horticultural Exhibitions, Schemes & Subsidies	2	2	2	P5-2 hrs.	50	20	10	15	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 30marks, Based on project report.**

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 co- 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, Horticultural shows and exhibitions, bonsai, indoor and terrace gardening, rockery, dish and bottle gardening, vegetable seed production etc...

Eligibility for Admission:

The students of any Graduate course of our college are eligible

Course No.1: Certificate course in Horticulture
The students of any Graduate Programme.

CourseNo.2: Diploma in Horticulture
Pass in certificate course in Horticulture.

CourseNo.3: Advanced Diploma in Horticulture
Pass in Diploma course in Horticulture.

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 toVI Semesters)

CERTIFICATECOURSE
I SEMESTER
THEORY

35Hours **2hrs/Week**

BASICS OF HORTICULTURE

UNIT I:Introduction to Horticulture (3Lectures)

1. Definition, Branches
2. Scope and Importance .

UNIT II: Basic requirements of Horticulture: (15 Lectures)

a. Soils: Types, Physical characteristics

b. Climate: Types Humid, Arid and Semiarid. Temperature, Relative humidity and Rainfall,

c. Garden implements and tools

d. Manures, Fertilizers & improvement of soil fertility: introduction, important organic manures, chemical fertilizers, methods of application, nutrient requirements of vegetable crops, time of application.

e. Organic Farming: Organic farming practices - Raising of green manure crops (Leguminous Crops).

f. 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, subsoil irrigation, over head system of irrigation.

UNIT III: Plant growth regulators in Horticulture: (10 Lectures)

Introduction,induction,breakingofseeddormancy,fastgrowthofseedling,controlofgrowth vigor, plant tissue culture, control of flowering, flower thinning, modification of sex expression, fruit thinning, induction of parthenocarpy and fruit ripening, control of fruitdrops, weed control, control of plant growth.

UNIT IV: Classification of garden plants: (7 Lectures)

Introduction,annuals,biennials,perennials,shrubs,trees,climbers,succulents,cacti,ferns,gymn osperms, palms, orchids, bulbous ornamentals.

Certificate Course
Basics of Horticulture
I Semester-Practicals

2hrs/Week

1. Study of soil-types, waterholding capacity.

2. Identification of manures.

3. Study of methods of composting and makingVermicompost.

4. Biofertilizers – *Rhizobium, Azotobacter,* Phosphotisers. VAM (Vesicular Arbuscular Mycorrhizal) fungi, Blue green algae –*Azolla.*

5. Systems of irrigation

6. Classification of garden plants

7. Tools and Equipments used in Horticulture.

I Semester Practicals

Basics of Horticulture

Scheme of Practical Examination

Time: 2 Hours **Max.Marks:20**

I. Identify 'A' and 'B' **2x2=4marks**

(A - SoilTypes-Sandy, Loamy, BlackSoil,
B-Manures-Compost, *Rhizobium*, Urea)

II. Perform the following experiment 'C'. **4marks**

(C-Water holding capacity/Arc Auxanometer Experiment)

III. Write critical notes 'D' & 'E' **2x3=6marks**

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

IV. Comment on 'F' & 'G' **2x3=6marks**

(F-Systems of Irrigation - Surface/ Drip/ SubSoil/ Overhead Irrigation
G-Garden Plants-*Aloe vera, Opuntia, Cycas, Areca lutescens, Vanda)*

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

CERTIFICATECOURSE
II Semester-Theory
Nursery, Plant Propagation, Medicinal & Aromatic Plants

2 hours/week **35 Hours**

UNIT I. Establishment and management of Nurseries: (9 Lectures)
Definition, importance of nurseries, classification of nurseries, and management of nurseries

1. **Basic requirements for Nurseries:**
    a. Agro-climatic conditions
    b. Topography
    c. Selection of site
    d. Selection of soil
    e. Seed bed preparation
    f. Water supply and irrigation
    g. Parts of nursery - a) Building structures, b) Propagating structures-raising of seedlings
2. **Management of nursery**
    a. Irrigation
    b. Nutrition
    c. Weed control
    d. Plant protection
    e. Uprooting, packing and transplantation

UNIT II: Plant propagation: (8 Lectures)
Introduction, vegetative propagation- cutting, layering- Types advantages and disadvantages, grafting, Types - advantages, principles and methods, specialized plant parts, micropropagation, transplanting.

UNIT III: Training and pruning, tillage, mulching and weed management: (10 Lectures)
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.

UNIT IV: Medicinal and aromatic plants, plantation crops (8Lectures)

1. **Medicinal and aromatic plants:** Introduction and significance.
2. **Plantation crops:** Introduction and significance.

CERTIFICATE COURSE
Nursery, Plant Propagation, Medicinal &Aromatic Plants
II SEMESTER
Practicals **2hrs/Week**

1. Types of Nurseries
2. Plant propagation:
    a. Cuttings
    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
7. Medicinal and aromatic plants - 4each
8. Plantation crops - 4each

CERTIFICATE COURSE

Scheme of Practical Examination

Nursery, Plant Propagation, Medicinal Plants &AromaticPlants

Time:2 Hours **Max.Marks:20**

I. Planning, layout and establishment of 'A' **4marks**

A- Commercial Nursery/ Rural Nursery/ Urban Nursery/ Home Nursery

II. Perform the following experiments 'B' & 'C'. **2x2=4marks**

B - Grafting-Wedge / Approach/ T-budding

C - Layering-Simple / Compound / Trench/ Air layering

III. Identify with reasons 'D'&'E' **2x3=6marks**

D-Tillage - Animal driven/ Machine Driven / Man Driven Tillage/

Mulching – Organic Mulching / Inorganic Mulching

E- Common Weeds of Horticulture- Congress weed / *Tridax* / *Digitaria* / *Amaranthus*

IV. Comment on 'F'& 'G' **2x3=6marks**F-

Medicinal Plants & Aromatic Plants-*Phyllanthus, Tinospora* / *Ocimum, Mint*

G – Plantation Crops – Coffee / Vanilla/ Coconut/ Rubber/ Tea

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

DIPLOMACOURSE
III Semester-Theory
BRANCHES OF HORTICULTURE

2 hours/week **35 Hours**

UNITI: **(12lectures)**

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.

Fruitculture (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.

Orchards: introduction, planning, layout and establishment of orchard. Orchard cultivation.

UNITII: Preservation of fruits and vegetables: **(06 lectures)**

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

UNIT III: Floriculture: **(07 lectures)**

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.

UNIT IV: **(10 lectures)**

1. **Arboriculture:** introduction, cultivational aspects of trees, common shadetrees, 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 PRACTICALS

2 hrs/Week

1. Introduction & cultivation of vegetables- Onion, Tomato, Potato, Lady'sfinger
2. Introduction & cultivation of fruits- Mango, Banana, Pomegranate, Grapes
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** at the time of practical examination.

DiplomaCourse – Scheme of Practical Examination
III Semester
Branches of Horticulture
Practicals **Max. Marks:20**

I. Planning layout and establishment of Orchard 'A'. **4marks**

II. Cultivation of vegetables and fruits 'B' and 'C'. **2X2=4marks**
B- (Onion, tomato, Potato, Lady's finger)
C-(Mango, Banana, pomegranate, grapes)

III. Identify with reasons 'D' and 'E'. **2X2=4marks**
D-(flowers-Rose, Tuberose, *Gerbera*, *Anthurium*,*Chrysanthemum)*
E-(Avenuetrees(*Cassia,Albizzia,Spathodia*,Raintree).

IV. Comment on'F'and'G'. **2X2=4marks**
F-Jam, jelly, squash, syrups and pickles
G-Post harvesting techniques**.**

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

DiplomaCourse
IVSEMESTER
Theory **35Hours**
2hrs/Week

GardeningandLandscaping

UNITI:Gardenanditsparts: (12lectures)

1. Introduction, living elements, hedges, edges, trees, flower beds, lawn,shrubs, climbers and creepers, paths, arches, pergola, rockery, carpetbeds, topiary, trophy, sunken garden, watergarden, non living elements.
2. Gardening: Introduction, Formalstyle, Informalstyle, planning a garden, creating a garden, establishment of the garden.
3. Landscaping: Homegarden, Publicgarden. Educational institution, commercial complexes, companies.

UNITII:Watergardens, terrace gardens(roofgarden)rockery: (10 lectures)

1. **Watergardens:**Introduction,lilypool,FormalandInformal pools.
2. **Terracegardens (roofgarden):** Introduction,components ofroofgarden.
3. **Rockery:**Introduction,componentsofrockgarden,importance.

UNITIII:IndoorgardeningandBonsai: (06 lectures) Introduction, potted plants, hanging baskets, bonsai, bromeliad tree, terrarium,bottlegarden, and dishgarden.

UNITIV:Kitchen garden andlawn making: (07lectures)

1. **Kitchen garden:** Introduction, layout and establishment of Kitchengarden.
2. **Lawnmaking:**Introduction,grassesusefulforlawns,Astroturf.

DiplomaCourse
IVSEMESTER
Practicals

2hrs/Week

1) Studyof Garden anditsparts

   a) livingelements-hedges,edges,trees,flowerbeds,lawn,shrubs,climbers

2) a. living elements- creepers, paths, arches, pergola, rockery, carpet beds,topiary,trophy, sunken garden, water garden
   b.non livingelements.
3) Landscaping
4) Studyof Watergardens
5) Studyof Terrace gardens&Rockery
6) Cultivationofpottedplants
7) Bonsaiculture
8) hangingbaskets,bromeliadtree,terrarium,bottlegarden,anddishgarden
9) Kitchen garden&lawn

DiplomaCourse
IV Semester
GardeningandLandscaping

Max.Marks:20

I.	**Planninglayoutandestablishmentof'A'** (Kitchengarden/lawnmaking/terracegarden)	**6 marks**
II.	**Identifyandcriticallycomment on'B'&'C'.** (B-Livingelements&NonLivingelements C- Hanging baskets, bromeliad tree, terrarium, bottle garden, and dishgarden)	**2x2=4marks**
III.	**Perform minorexperiment'D'** (D-cultivationofpottedplants/Watergarden/rockery)	**5 marks**
IV.	**Performminorexperiment'E'** **marks**(E- Steps in bonsai culture/landscaping of home garden/ landscaping ofpublicgarden/landscapingof educational institutiongarden)	**5**

Note:Eachstudentshouldsubmitthe**dulyvaluedand certifiedpracticalrecord**atthetimeofpracticalexamination.

AdvancedDiplomaCourse

VSemester- Theory

HorticulturalExhibitions,Schemes& Subsidies

35Hours

2hrs/Week

UNITI:GreenHouseandHydroponics: (06lectures)

1. GreenHouse: Introduction,typesandsignificance.

2. Hydroponics (soil-less culture): Introduction, types- water culture,sandculture, gravelculture,aeroponics, andscope.

UNITII:Displayofflowers: (12 lectures) Introduction, flower arrangement, types, western style, eastern style,components of flower arrangements, conditioning of flowers, arranging theflowers in the container, ikebana, dry decoration, preservation methods, driedarrangement,cutflowers, and bouquets.

UNITIII:Horticulturalshow:

(08lectures)

Introduction, eligibility of gardens, exhibition of roots, vegetables, cut flowers,potplants. Exhibitionofflowerarrangement,vegetablecarving andrangoli.

UNITIV:Schemes, Subsidiesandextensionprogrammes: (09lectures)

1. **Schemes:**Availablefrombanks,DepartmentsandPrivateorganizationsfordeveloping entrepreneurships in Horticulture. (Nurseries / Agriclinics / Hopcoms /NABARD/NationalHorticulture Board(NHB).
2. **Extensionprogrammes:**Agrohorticulturalsocieties,krushivignankendras(KVK),kr ushibhavans.

Paper code:HRE010 **AdvancedDiplomaCourse**

VSemester-Practicals

HorticulturalExhibitions,Schemes& Subsidies

2hrs/Week

1. Studyof GreenHouse
2. Hydroponics
3. Typesofflowerarrangement
4. Ikebana
5. VegetablecarvingandHorticulturalexhibitionthroughphotographs
6. Studyof vegetable,fruit,flowerrangoli andmixedrangoli
7. EntrepreneurshipsinHorticulture

Advanced Diploma Course
HorticulturalExhibitions,Schemes&Subsidies
Scheme of Practical Examination
VSemesterPracticals

Max. Marks:20

I. Performthemajorexperiment‘A’ **6marks**

(fruits/ vegetables/ grains/flower/mixedrangoli)

II. Planninglayoutandestablishment of greenhouse‘B’. **5marks**

III. Identifyandcriticallycomment on‘C’-hydroponics. **5marks**

IV. Identifyandcommenton‘D’and‘E’ **2X2=4marks**

(D-cutflowervegetable**,E-**fruitshow**)**

AdvancedDiplomaCourse

VISemester

Max.Marks:70+30

AdvancedHorticulture– II

Thesestudentsshouldstudyactivitiesofdifferentareas likefieldstudy/seed companies/foodprocessingunits/nurserymanagement/storageunits/horticulturemarketingareas/onjob trainingindifferentinstitutions.

Each student has to **submit a project report** on allotted Field of study Heshouldalsogotothefield,study,collectdata,analyze,compileandpreparea report.

He has to prepare project report for Horticulture crops to take financial aidfromthe bank and othersuchagencies.

1. Namadhariseedcompany,Bangalore.
2. Lab.LandBiotech,Mysore.
3. B.V.Pandit,Nanjangud(AyurvedicPark)
4. LocalNurseries
    (a) BhudeviNursery
    (b) N.S.Nursery
    (c) DeccanNursery
    (d) Nurserymenco-operativesociety
    (e) SwadeshiBiotech,Mysore
    (f) Visit tolandscapinggardenspotsatdifferentprivateandpublicinstitutions.

HORTICULTURE

THEORY QUESTION PAPER PATTERN For I TO V SEMESTER

Time: 3 hours **Max.marks=60**

I. Explain or define the following: **1X5=5**

1.

2.

3.

4.

5.

II. Write short notes on any FIVE (out of six): **3X5=15**

6.

7.

8.

9.

10.

11.

III Write critical notes on any FOUR (out of Five): 5X4=20

12.

13.

14.

15

16.

IV Write a detailed account of any TWO (out of three): 10X2=20

17.

18.

19.

REFERENCES

1. CompletegardeninginIndia : Gopalaswamy Iyengar
2. ProgressiveFloriculture : I.S.Yadav&M.L.Choudhary
3. FloricultureinIndia : G.S.Randhwa
4. TextbookofHorticulture : ICARPublications
5. Vegetablefor thetropicalregion : Premnath
6. OrnamentalHorticulture : J.B.Edmond
7. HandbookofMedicinalPlants : S.K.Battacharjee
8. HandbookofAromaticandplantation crops : S.K. Battacharjee
9. Improvedpackagesofpracticesin turecrops : UASDharwadandBangaloreHorticul
10. MedicinalandAromaticplants tion : Farooquicultiva
11. ICAR 1969Hand bookofAgricultureNewDelhi
12. TextbookofEconomicBotany : RobertHill
13. PropagationofHorticulturalPlants : AdrianeandBrisin
14. Plantpropagation-principles&practices: Hartman.H.T.&D.E.Kester
15. HandbookofMushrooms : NitaBahl
16. Exoticapictorialcyclopediaof exoticplants–Volume1to6. : Dr.AlfredByrdGraf RochrsCompanyPublishers P.O. Box.125EastRu therford New Jersey – 7073U.S.A.