PROFORMAFORTHESCHEMEOFSTUDYANDEXAMINATIONOFTHECAREERORIENTED PROGRAMME

CERTIFICATE/DIPLOMA/ADVANCEDDIPLOMACOURSESINHORTICULTURE

Semester	Paperandtitle	Theory Hrs. /Week	Practical Hrs/Week	Duration of theoryexam	Duration of practical exam	Marks fortheoryexam	Marksforpracticalexam	Internal assessment markstheory	Internalassessmentmarkspractical	Totalmarksforeachsubject
I	BasicsofHorticulture	2	2	3	P1-2hrs.	60	20	10	10	100
II	Nursery,Plant Propagation,Medicinal& AromaticPlants	2	2	3	P2-2 hrs.	60	20	10	10	100
III	BranchesOfHorticulture	2	2	3	P3- 2hrs.	60	20	10	10	100
IV	GardeningAnd Landscaping	2	2	3	P4- 2hrs.	60	20	10	10	100
V	HorticulturalExhibitions, Schemes&Subsidies	2	2	3	P5-2 hrs.	60	20	10	10	100
VI	AdvancedHorticulture–II (Dissertation)	70 Dissertation				30 Viva–Voce				100
TOTAL										600

NOTE:

- **Thecandidateshouldproducethe valuedandcertifiedrecordduringthepracticalexamination.**
- **SixthSemester Dissertation isfor 70marksandViva-voce for 30marks,Basedonprojectreport.**

CAREERORIENTEDCOURSEINHORTICULTURE

Aimandobjectives ofthecourse:

1. Toprovidestudentswithabroadeducationalbackground,whichinadditiontoemphasizingagriculturalsciences,givesanappreciationofhorticulture'sroleinaugmentingeconomicgrowth,developmentandimprovementofsociety.
2. To prepare people enrolled in horticultural courses to contribute to public policyformulationthroughtheirownpersonaldevelopmentas informedcitizens.
3. To promote the importance of horticulture in food, medicinal and ornamental plantproduction,providingemployment,improvingtheenvironment,creatingandmanagingsports andrecreation facilities,as oneofthemainleisurepursuits- gardening

Scopeandrelevance:

1. The Horticulture has gained importance in recent years as a significant component ofagriculture. Summarizing the advantages of horticulture, it is stated that, horticulturalcropsprovidebetterfood,higherincome-improvingtheeconomicstatusofthefarmers,alltheyearroundoccupationtothefarmpopulationengagedinproduction,transportation,processingandmarketingoperationsinadditiontotheentrepreneurs.
2. Horticultural farming promotes the development of natural resources, yields higherreturns from land, enhances the land values, creates a better purchasing power amongthepeopleand as aconsequenceaddsto thegeneralprosperity.
3. Horticultural crops play an important role in Commerce, particularly in export tradeandfoodprocessing industry,besides their valueinhumanconsumption.
4. Career opportunities include farm/ estate managers, plantation experts, supervisors,projectco-coordinators,landscapearchitectsandconsultants,floraldesignersandhorticulturaltherapistsetc...
5. Professional qualification, combined with an inclination towards gardening produceefficientfloriculturists, landscapingprofessionals.
6. Horticulture has also played a significant role in women empowerment, providingemployment opportunities to them in mushroom cultivation, floriculture, Horticulturalshows and exhibitions, bonsai, indoor and terrace gardening, rockery, dish and bottlegardening,vegetableseed productionetc...

EligibilityforAdmission:

The students of any Graduate course of our college are eligible

CourseNo.1:CertificatecourseinHorticulture

The students of any Graduate Programme.

CourseNo.2:DiplomainHorticulture

Pass in certificate coursein Horticulture.

CourseNo.3:AdvancedDiplomainHorticulture

Pass in Diploma course in Horticulture.

NOTE:

Thestudenthastoattend75%oftheclassesthatheldineachsemesterwoul dbe eligiblefortaking upthe FinalExams.

CAREERORIENTEDCOURSE

COURSE:HORTICULTURE

CertificateCourse - Oneyear(IandIISemesters)

DiplomaCourse - Two years (I to IV

Semesters)AdvancedDiplomaCourse -

Threeyears(ItoVISemesters)

CERTIFICATECOURSE

I SEMESTER

THEORY

35Hours
2hrs/Week

BasicsofHorticulture

A. UNITI:IntroductiontoHorticulture (3Lectures)

1. Definition,Branches
2. ScopeandImportance .

B. UNITII: Basic requirements of Horticulture: (15Lectures)

a. Soils: Types, Physical characteristics

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

c. Gardenimplementsandtools

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

e. Organic Farming: Organic farming practices – Raising of green manure crops (LeguminousCrops).

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.

UNITIII:Plant growth regulatorsinHorticulture: (10 Lectures) Introduction,induction,breakingofseeddormancy,fastgrowthofseedling,controlofgrowth vigor, plant tissue culture, control of flowering, flower thinning, modificationof sex expression, fruit thinning, induction of parthenocarpy and fruit ripening, controloffruitdrops, weed control, controlofplantgrowth.

UNITIV: Classificationofgardenplants: (7 Lectures) Introduction,annuals,biennials,perennials,shrubs,trees,climbers,succulents, cacti,ferns,gymnosperms, palms,orchids, bulbousornamentals.

CertificateCourse

BasicsofHorticulture

ISemester-Practicals

2hrs/Week

1. Studyofsoil-types,waterholdingcapacity.
2. Identificationofmanures.
3. StudyofmethodsofcompostingandmakingVermicompost.
4. Biofertilizers – *Rhizobium, Azotobacter,* Phosphotisers.

   VAM(VesicularArbuscular Mycorrhizalfungi,Bluegreenalgae–

   Azolla.
5. Systemsofirrigation
6. Classificationofgardenplants
7. ToolsandEquipmentsusedinHorticulture.

ISemesterPracticals

BasicsofHorticulture

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. Performthefollowingexperiment‘C’. **4marks**

(C-Waterholdingcapacity/ArcAuxanometerExperiment)

III. Writecriticalnotes‘D’&‘E’ **2x3=6marks**

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

IV. Commenton‘F’&‘G’ **2x3=6marks**

(F-SystemsofIrrigation-Surface/Drip/SubSoil/OverheadIrrigation
G-GardenPlants-*Aloevera,Opuntia,Cycas,Arecalutescens,Vanda)*

Note:Eachstudentshouldsubmitthe**dulyvaluedand certifiedpracticalrecord**atthetimeofpracticalexamination.

CERTIFICATECOURSE

II Semester-Theory

Nursery,PlantPropagation,Medicinal&AromaticPlants

2 hours/week **35 Hours**

UNITI:Establishment andmanagementofNurseries: 9Lectures)

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

1. **BasicrequirementsforNurseries:**
    a. Agro-climaticconditions
    b. Topography
    c. Selectionofsite
    d. Selectionofsoil
    e. Seedbedpreparation
    f. Watersupplyandirrigation
    g. Partsofnursery-a)Buildingstructures,b)Propagatingstructures-raisingofseedlings
1. **Managementofnursery**
    a. Irrigation
    b. Nutrition
    c. Weed control
    d. Plant protection
    e. Uprooting,packingandtransplantation

UNITII:Plantpropagation: (8 Lectures) Introduction,vegetativepropagation- cutting, layering- Types advantages and disadvantages, grafting, Types - advantages, principles and methods, specializedplantparts,micropropagation,transplanting.

UNITIII: Trainingandpruning,tillage,mulchingand weed management: Introduction to training- principles, methods, training withandwithoutsupport,pruning-thinningout,headingback,uses,specialtechniques and root pruning, ringing, notching, smudging, bending, coppicing,pollarding,lopping,pinching,disbudding,containmentpruning,thinning. **(10Lectures)**

UNITIV:Medicinal andaromaticplants,plantationcrops(8Lectures)

1. **Medicinalandaromaticplants:**Introductionandsignificance.
2. **Plantationcrops:** Introductionandsignificance.

CERTIFICATE COURSE

Nursery,PlantPropagation,Medicinal&Aromatic Plants

IISEMESTER

Practicals 2hrs/Week

1. TypesofNurseries
2. Plantpropagation:
    a. Cuttings
    b. Layering
3. Plant propagation
    a. Grafting
4. Training andpruning-photographs
5. Inorganicandorganicmulching
    a. Tillage-Man,Animalandmachine
    b. Poweredtillages
6. Commonweedsofhorticulture
7. Medicinalandaromaticplants-4each
8. Plantationcrops-4each

CERTIFICATE COURSE –

Scheme of Practical Examination

Nursery,PlantPropagation,MedicinalPlants&AromaticPlants

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

I. Planning,layoutandestablishmentof‘A’ **4marks**

A-CommercialNursery/RuralNursery/UrbanNursery/HomeNursery

II. Perform thefollowingexperiments‘B’&‘C’. **2x2=4marks**

B-Grafting-Wedge/Approach/T-budding

C-Layering-Simple/Compound/Trench/Airlayering

III. Identifywithreasons ‘D’&‘E’ **2x3=6marks**

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

Tillage/Mulching-Organic Mulching/InorganicMulching

E- Common Weeds of Horticulture-

Congressweed/*Tridax*/*Digitaria*/*Amaranthus*

IV. Comment on‘F’& ‘G’

2x3=6marks

F- Medicinal Plants & Aromatic Plants-*Phyllanthus,Tinospora*

/*Ocimum,Mint*

G-PlantationCrops-Coffee/Vanilla/Coconut/Rubber/Tea

Note:Eachstudentshouldsubmitthe**dulyvaluedand certifiedpracticalrecord**atthetimeofpracticalexamination.

DIPLOMACOURSE

III Semester-Theory
BRANCHESOFHORTICULTURE

2 hours/week **35 Hours**

UNITI: (12lectures)

a. **Olericulture:**Introduction,importanceofvegetablecultivation,classificatio nofvegetables(accordingtosourceofplantpartsandseason), current status of vegetables in India, cultivation of vegetables,bottlenecks/limitations invegetable cultivation.
b. **Fruitculture(pomology):**introduction,importanceoffruitsfromsocialpoin t of view, in art and culture, religious importance, general utility,nutritive and economic value, classification of fruits based on climaticadaptability.Pomologyin Indianscenario.
c. **Orchards:** introduction, planning, layout and establishment of orchard.Orchardcultivation.

UNITII: Preservationoffruitsandvegetables:

(06lectures)

Introduction, preservation methods, preparation of jam, jelly, squash, syrups andpickles.

UNITIII:Floriculture: (07lectures)

Introduction, importance of Floriculture from social, economic, health and aestheticpoint of view. Marketing and floristry in Indian scenario. Future and scope ofFloricultureinIndia-employmentopportunities.

UNITIV: (10lectures)

1. **Arboriculture:** introduction, cultivational aspects of trees, common shadetrees,benefits ofarboreta.
2. **Harvesting and handling of horticultural products:** maturity indices,typesofharvesting(manual,mechanical,chemical).Postharvesthandl ing(washing,sorting,grading, waxing,packaging, labeling,storage)

DiplomaCourse

BranchesofHorticulture

IIISEMESTER 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&layoutofOrchards
4. Preservationoffruitsandvegetables
5. Identification and cultivation of flowers- Rose, Tuberose, *Gerbera,Anthurium,Chrysanthemum*, Jasmine
6. Identificationofavenuetrees
7. Postharvesting techniques

Note:Eachstudentshouldsubmitthe**dulyvaluedandcertifiedpracticalrecord** at thetimeofpractical examination.

DiplomaCourse – Scheme of Practical Examination
IIISemester

BranchesofHorticulture

Practicals **Max. Marks:20**

I. PlanninglayoutandestablishmentofOrchard‘A’. **4marks**

II. Cultivationofvegetables andfruits‘B’and‘C’.

2X2=4marks

B- (Onion, tomato, Potato, Lady’sfinger)
C-(Mango,Banana, pomegranate,grapes)

II. **Identifywithreasons ‘D’and‘E’.**

2X2=4marks

D-(flowers-Rose,Tuberose, *Gerbera,Anthurium,Chrysanthemum)*
E-(Avenuetrees(*Cassia,Albizzia,Spathodia,*Raintree).

III. Comment on‘F’and‘G’.

2X2=4marks

F-Jam, jelly,squash, syrupsandpickles
G-Postharvesting techniques**.**

Note:Eachstudentshouldsubmitthe**dulyvaluedandcertifiedpracticalrecord** at thetimeof 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, sunkengarden, watergarden,non livingelements.
2. Gardening:Introduction,Formalstyle,Informalstyle,planningagarden,creating a garden,establishmentof thegarden.
3. Landscaping:Homegarden,Publicgarden.Educationalinstitution,commercialcomplexes,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’ 6 marks
(Kitchengarden/lawnmaking/terracegarden)

II. Identifyandcriticallycomment on‘B’&‘C’. 2x2=4marks
(B-Livingelements&NonLivingelements
C- Hanging baskets, bromeliad tree, terrarium, bottle garden, and dishgarden)

III. Perform minorexperiment‘D’ 5 marks
(D-cultivationofpottedplants/Watergarden/rockery)

IV. Performminorexperiment‘E’ 5 marks(E- Steps in bonsai culture/landscaping of home garden/ landscaping ofpublicgarden/landscapingof educational institutiongarden)

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),krushibhavans.

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 Horticulturecrops	:	UASDharwadandBangaloreHorticul
10.	MedicinalandAromaticplants	:	Farooquicultiva tion
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.