

**SECTION – A****Answer ALL Questions :** (10 × 1 = 10)

- Psilotum* comes under _____ class.
a) Psilotopsida b) Psilophytopsida c) Lycopsida d) Ligulopsida
- The plant body of *Lycopodium* is _____.
a) gametophyte b) sporophyte c) thallus d) mycelium
- Intercalary meristem is seen in _____.
a) *Marsilea* b) *Lycopodium* c) *Psilotum* d) *Equisetum*
- In *Marsilea*, each sorus bears
a) both mega and microsporangia b) only megasporangia
c) only microsporangia d) only sporangiophore
- The vegetative reproduction in *Cycas* takes place by means of
a) cutting b) layering c) bulbils d) tubers
- Which of the following species of *Gnetum* is a woody climber?
a) *G.contractum* b) *G.gnemone* c) *G.ula* d) *G.montanum*
- The most common mode of preservation is _____.
a) impression b) petrification c) mould d) compression
- Which of the following era in geological time scale is known as the 'age of Cycads'?
a) Mesozoic b) Palaeozoic c) Pre Cambrian d) Coenozoic
- Rhynia* was discovered by _____.
a) William Dawson b) Kidston and Lang
c) Balbach d) Jongmans
- 'Seed ferns' refer to _____.
a) *Rhynia* b) *Lyginopteris* c) *Marsilea* d) *Cycas*

SECTION – B**Answer ALL Questions :** (5 × 7 = 35)

- a) How are pteridophytes classified by Smith?
(OR)
b) Discuss the sporophytic generation in *Psilotum*.
- a) Describe the anatomy of stem of *Equisetum* with labeled diagram.
(OR)
b) Explain the internal structure of rhizome of *Marsilea*.
- a) Explain the structure and function of coralloid root of *Cycas*.
(OR)
b) Briefly describe the male and female cone of *Gnetum*.
- a) Discuss the various types of fossils.
(OR)
b) Give an account on the formation of fossils and add a note on important strata in which fossils were found.
- a) Discuss the internal structure of stem of *Rhynia*.
(OR)
b) Discuss the classification, geological era and internal structure of the stem of *Lyginopteris*.

SECTION – C**Answer any THREE Questions :** (3 × 10 = 30)

- Discuss the various types of gametophytes found in *Lycopodium*.
- Describe the structure of sporocarp of *Marsilea*.
- Write an essay on sexual reproduction in *Cycas*.
- Give an account on geological era.
- Enumerate the salient features of sphenopsida with reference to *Calamities*.


VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST

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[Affiliated to Madurai Kamaraj University]

B.Sc. Botany Degree (Semester) Examinations, April 2016

Part – III : Core Subject : Second Semester : Paper – II

PLANT ANATOMY AND MICROTECHNIQUES

Under CBCS – Credit 4

 Time: **3** Hours

 Max. Marks: **75**
SECTION – A
Answer ALL Questions : (10 × 1 = 10)

- The basic unit of cell wall is _____.
 a) cellulose b) microfibrils c) glucose d) micelle
- The pit cavity surrounded by pit membrane on either side is called _____.
 a) half bordered pit b) bordered pit c) simple pit d) blind pit
- Which one of these is a complex tissue?
 a) parenchyma b) trichomes c) sclerenchyma d) xylem
- The vascular bundle in monocot root is always
 a) polyarch b) tetrarch c) diarch d) triarch
- Dendrochronology is the study of _____.
 a) vascular bundles b) bark c) season d) annual rings
- If xylem and phloem are arranged along the same radius, such vascular bundles are called _____.
 a) radial b) collateral c) exarch d) endarch
- In dicot leaf, guard cells are _____.
 a) kidney shaped b) dumbel shaped
 c) cone shaped d) both a and b
- The intervening parenchymatous area of vascular cylinder at the nodal region is _____.
 a) leaf trace b) leaf gap
 c) branch trace d) intermediate tissue
- A chemical agent for fixation is
 a) safranin b) paraffin c) glycerine d) formaldehyde
- Sudden stoppage of life processes of tissues is called _____.
 a) killing b) fixation c) freezing d) staining

SECTION – B
Answer ALL Questions :

(5 × 7 = 35)

11. a) Explain the ultra structure of cell wall.
 (OR)
 b) Classify meristem based on plane of cell division.
12. a) Explain the structure of young dicot stem.
 (OR)
 b) Enumerate the structure of young dicot root with diagram.
13. a) Write a brief account on anomalous secondary thickening in *Dracaena*.
 (OR)
 b) Write critical notes on
 a) annual rings b) lenticels c) heart wood and sap wood
14. a) Discuss the different types of nodes seen in flowering plants.
 (OR)
 b) Write the internal structure of dicot leaf.
15. a) Write notes on fixation.
 (OR)
 b) Explain the process of staining and mounting.

SECTION – C
Answer any THREE Questions :

(3 × 10 = 30)

16. Write an essay on complex tissue.
17. Discuss the internal structure of monocot stem and monocot root.
18. What is anomalous secondary thickening? How does anomalous secondary growth take place in stem of *Boerhaavia*?
19. Write the differences between the anatomy of dicot and monocot leaf.
20. What are whole mounts? How will you prepare whole mounts of plant materials such as algae, Pteridophytes and angiospermic woods?

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B.Sc. Botany Degree (Semester) Examinations, April 2016

Part – III : Core Subject : Fourth Semester : Paper – I

BIOINFORMATICS

Under CBCS – Credit 4

 Time: **3** Hours

 Max. Marks: **75**
SECTION – A
Answer ALL Questions : (10 × 1 = 10)

- Windows are
 - Hardware
 - operating system
 - statistical package
 - peripheral device
- Short-cut key for saving the document is
 - Ctrl + Z
 - Shift + Z
 - Ctrl + S
 - Shift + S
- NCBI refers to
 - National Center for Biotechnology Information
 - National Council of Biological Information
 - National Centre for Biological Information
 - National Council for Biotechnological Information
- URL refers to
 - Website address
 - Webpage
 - Search Engine
 - Email
- The comparison of two sequences across their length by searching the matching pairs of residues is called
 - Global alignment
 - Sequence analogy
 - Pairwise alignment
 - Multiple sequence alignment
- BLAST is
 - Broad Local Arrangement Search Tool
 - Basic Local Alignment Search Tool
 - Basic Local Arrangement Search Tool
 - Basic Logic Arrangement Search Tool
- Multiple copies of DNA can be produced by _____ technique.
 - Agarose Gel Electrophoresis
 - PCR
 - Electroporation
 - Particle bombardment
- Human Genome organization was started in
 - 1986
 - 1987
 - 1988
 - 1989

- Swiss –Prot is a
 - Nucleic acid database
 - Protein database
 - Sequencing tool
 - Hard link
- Protein structures can be compared by
 - PCR
 - Western Blotting
 - Homology Modelling
 - Gel Electrophoresis

SECTION – B
Answer ALL Questions : (5 × 7 = 35)

- a) Give the basic components of computers. (OR)
b) Briefly explain the steps used to construct graph using Excel.
- a) Give the applications of bioinformatics. (OR)
b) Comment on Gen Bank.
- a) Distinguish between Global and local alignment. (OR)
b) What is meant by sequence analysis? Explain.
- a) Discuss the role of bioinformatics in genomics study. (OR)
b) Differentiate between Prokaryotic and Eukaryotic genome organization.
- a) Explain any one method of proteome analysis. (OR)
b) Comment on Ligand-Protein interaction.

SECTION – C
Answer any THREE Questions : (3 × 10 = 30)

- Explain the components, working method and uses of MS word.
- Describe Search engine, Web page and Email of Internet.
Add a note on internet applications.
- Discuss the mode of operation of BLAST and FASTA.
- Explain the techniques used in genomic studies.
- Discuss the mode of operation of bioinformatics in proteomics.

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B.Sc. Botany Degree (Semester) Examinations, April 2016

Part – III : Core Subject : Fourth Semester : Paper – II

PLANT ECOLOGY

Under CBCS – Credit 3

 Time: **3 Hours**

 Max. Marks: **75**
SECTION – A
Answer ALL Questions :
(10 × 1 = 10)

- Edaphic factor is due to
 - Man
 - Temperature
 - Soil
 - Herbivorous animals
- The study on interaction between living organisms and environment is called
 - Ecosystem
 - Phytogeography
 - Ecology
 - Phytosociology
- The plants are growing on saline soils are called
 - Mesophytes
 - Xerophytes
 - Halophytes
 - Hydrophytes
- Name the plant succession takes place in drier area
 - Hydrach
 - Xerach
 - Mesorach
 - Halorach
- The sampling technique can be determined by line that is called
 - Belt transect
 - line transect
 - Bisects
 - Chart quadrat
- The season of North east monsoon from mid December to the end of February is called
 - Hot season
 - Cool season
 - Wet season
 - Retreating monsoon
- Name the chemicals used to kill pests
 - Insecticides
 - Fungicides
 - Herbicides
 - Pesticides
- Pesticides pass through food chains and are transferred from lower organisms to higher organisms ie called
 - Bioconversion
 - Biomagnifications
 - Biotransformation
 - Bio augmentation

- Name the branches of botany that deals with the origins, special relationship and distribution of plants
 - Biogeography
 - Phytogeography
 - Biography
 - Geography
- The description of the vegetation of different botanical regions of the world is known as
 - Static phytogeography
 - Dynamic phytogeography
 - Climate phytogeography
 - None of these

SECTION – B
Answer ALL Questions :
(5 × 7 = 35)

- Discuss the role of biotic factors in ecological studies. **(OR)**
 - Explain the structure of soil profile.
- Give the characteristic adaptations of Xerophytes. **(OR)**
 - Discuss the process of ecological succession.
- Explain the climatic regions in India. **(OR)**
 - Describe the flora and vegetation of India.
- Give an account on effect of pesticide in animal life. **(OR)**
 - Explain the role of pesticide in human life.
- Compare and contrast continuous and discontinuous distribution of plants. **(OR)**
 - Give an account on Endemism.

SECTION – C
Answer any THREE Questions :
(3 × 10 = 30)

- Explain the importance of climatic factors in determining the nature of the plant communities.
- Give an account on Hydrosere.
- Describe the vegetation of India.
- Give an account on impact of pesticides in eco-toxicology.
- Give an account on age and age hypothesis.

**GENETICS**

Under CBCS – Credit 4

Time: **3** HoursMax. Marks: **75****SECTION – A****Answer ALL Questions :****(10 × 1 = 10)**

- Mendel used a seven pairs of characters in his hybridization crosses in Pea plants, of this the colour of the cotyledons are _____.
 - Grey : White
 - Yellow : Green
 - Red : White
 - Blue : Yellow
- Which one is the Mendel's first law of inheritance?
 - Law of segregation
 - Law of independent assortment
 - Law of hybridization
 - Law of inheritance
- A, B, O blood groups belongs to _____ in Genetics.
 - Complementary genes
 - Dominant epistasis
 - Multiple alleles
 - Recessive epistasis
- Who proposed break and exchange theory of crossing over?
 - Muller
 - Laderberg
 - Darlington
 - Belling
- In sex linked inheritance, the genes which remain confined to differential region "X" chromosome only is called _____.
 - Holandric gene
 - Sex linked gene
 - Somatic gene
 - All the above
- Which is the target of regulator protein?
 - Regulator
 - Operator
 - Repressor
 - Suppressor
- Who discovered male sterility in Maize?
 - Rhodes
 - Garner
 - Correns
 - Teissier

8. What are the three genes functioning in lac operon?
a) lac A, B, C b) lac M, N, O c) lac Z, Y, A d) lac X, Y, Z
9. In chromosome aberration, extra chromosome segment is otherwise known as _____.
a) Addition b) Deletion c) Inversion d) Translocation
10. Which one is the mutagen in the following?
a) Mercury chloride b) Ammonium sulphate
c) Ethyl methane sulphonate d) Urea

SECTION – B

Answer ALL Questions : (5 × 7 = 35)

11. a) Explain the Mendel's law of independent assortment with reference to dihybrid cross.
(OR)
b) What is recessive epistasis? Explain with suitable example.
12. a) Define linkage. Mention the significance of crossing over.
(OR)
b) Briefly illustrate any two theories of crossing over.
13. a) Discuss the male sterility in Maize.
(OR)
b) What is plastid inheritance? Explain with suitable example.
14. a) How inversion occurred in chromosomal aberrations? What are the types of inversion?
(OR)
b) Write short note on translocation, types and significance.

15. a) What are the two major categories of gene regulation in *E. coli*?
(OR)
b) Explain the lac operon model with schematic diagram.

SECTION – C

Answer any THREE Questions : (3 × 10 = 30)

16. What is complementary genes? Explain with suitable example.
17. Write the characteristics of multiple alleles. Discuss with A, B, O blood group.
18. What is meant by sex linked inheritance? Illustrate with suitable example.
19. Describe the different types of physical and chemical mutagens.
20. What is Human Genome Project? Summarise the important contributions in Human Genome Project.

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**BIOTECHNOLOGY**

Under CBCS – Credit 4

Time: 3 Hours

Max. Marks: 75

SECTION – A**Answer ALL Questions :** (10 × 1 = 10)

- Escherichia coli* is a _____ bacteria.
 - Gram negative rod shape
 - Gram positive rod shape
 - Gram negative cocci shape
 - Gram positive cocci shape
- Which one is the first micro organisms isolated restriction enzyme?
 - Haemophilus aegypticus*
 - E. coli*
 - Haemophilus influenza*
 - Proteus vulgaris*
- _____ organisms are used for commercial production of citric acid.
 - Aspergillus clavatus*
 - Aspergillus wentii*
 - Penicillium luteum*
 - Aspergillus niger*
- Name a byproduct, which is commonly used today as an ethanol source
 - Molasses
 - Bagasse
 - Sulfite waste
 - Root starch
- The nif gene is roughly about the size of _____.
 - 20kb
 - 22 kb
 - 24 kb
 - 26 kb
- In the symbiotic association _____ are the site of N₂ fixation.
 - root nodules
 - flavonoid inducer
 - Nod factor
 - infection thread
- Trickling filter is an example for ____ treatment of sewage disposal.
 - Primary
 - Secondary
 - Tertiary
 - Quaternary
- Use of pollutant accumulating plants to remove metals or organics from soil by concentrating them in the harvestable plant parts is called as _____.
 - Phytoextraction
 - Phytodegradation
 - Phytostabilization
 - Phytovolatilization
- Which one is the human growth hormone?
 - Insulin
 - Epinephrin
 - Somatostatin
 - Calcitonin

10. Insulin was composed of _____ amino acids.
 a) 41 b) 51 c) 31 d) 21

SECTION – B**Answer ALL Questions :** (5 × 7 = 35)

- a) What are the fundamental steps involved in gene cloning in *Saccharomyces*?
(OR)
b) Write short note on ligases.
- a) Explain the industrial production of citric acid with flow chart?
(OR)
b) What are single cell proteins? Mention the characteristics of single cell protein.
- a) Give a brief account on biopesticides.
(OR)
b) How nif genes are regulated in nitrogen fixation?
- a) What is phytoremediation? Explain with an example.
(OR)
b) Briefly explain about the biogas production.
- a) Describe the principle and technique of ELISA.
(OR)
b) Give short account on stem cell therapy.

SECTION – C**Answer any THREE Questions :** (3 × 10 = 30)

- Describe the characteristics of any two artificial cloning vectors you have studied.
- Describe the industrial production of ethyl alcohol.
- Discuss the mechanism of nitrogen fixation with reference to *Rhizobium*.
- Give an account on biological treatment of sewage.
- What is monoclonal antibody? Who discovered it? Explain the production of monoclonal antibody.

** ** ** ** **

**TISSUE CULTURE**

Under CBCS – Credit 5

Time: 3 Hours

Max. Marks: 75

SECTION – A**Answer ALL Questions :** (10 × 1 = 10)

- The commonly used medium in tissue culture is
 - Nutrient agar
 - Rose Bengal
 - MS
 - Chu10
- The idea of tissue culture was conceived by
 - Haberlandt
 - Guha
 - Maheswari
 - Murashige
- Undifferentiated mass of cells is called
 - suspension
 - embryo
 - callus
 - plantlet
- Embryos developed from vegetative cells are called
 - Somatic embryos
 - Anomalous embryos
 - Artificial embryos
 - Callus
- Protoplasmic fusion is induced by
 - Ethylene
 - Auxin
 - Cytokinin
 - PEG
- Anther culture is used for the establishment of
 - Somaclonal variation
 - Embryos
 - Haploid plants
 - Cell culture
- Production of cell culture in small reactor with definite interval is called
 - Batch culture
 - Continuous culture
 - Microculture
 - Macroculture
- Cryopreservation refers to maintenance of culture at
 - high temperature
 - low temperature
 - high light intensity
 - room temperature

- Vincristine is obtained from
 - Daucas carota*
 - Catharanthus roseus*
 - Coffea Arabica*
 - Papaver somniferum*
- Bt gene is resistant to
 - Pests
 - Fungi
 - Weeds
 - Salt content

SECTION – B**Answer ALL Questions :** (5 × 7 = 35)

- a) List the important milestones in plant tissue culture. (OR)
b) Bring out the basic requirements of tissue culture technique.
- a) Comment on artificial seeds. (OR)
b) Give the role of tissue culture in germplasm conservation.
- a) Briefly explain about haploid plant generation method. (OR)
b) Explain somatic embryogenesis.
- a) Briefly explain about Nurse Culture technique. (OR)
b) Write a note on Secondary metabolites.
- a) Explain the role of tissue culture in horticulture. (OR)
b) List some endangered and rare species conserved through tissue culture.

SECTION – C**Answer any THREE Questions :** (3 × 10 = 30)

- Explain the components, preparation and sterilization of tissue culture medium. Add a note on the role of components.
- Describe Organogenesis in detail with suitable illustration.
- Give an account on isolation and purification of protoplasts. Add a note on the applications of protoplast culture.
- Discuss the role of tissue culture in secondary metabolite production with suitable examples.
- Describe the production of herbicide resistance plants and their multiplication through tissue culture.


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B.Sc. Botany Degree (Semester) Examinations, April 2016

Part – III : Elective Subject : Sixth Semester : Paper – II

REMOTE SENSING AND GIS

Under CBCS – Credit 4

 Time: **3** Hours

 Max. Marks: **75**
SECTION – A
Answer ALL Questions :
(10 × 1 = 10)

- Earth orbiting satellites are
 - Geostationary
 - Sun orbiting
 - Sunsynchronous
 - Moon Stationary
- Radiowaves are used by
 - SONAR
 - RADAR
 - Satellites
 - Hot air balloons
- LIDAR is a kind of _____ remote sensing.
 - active
 - passive
 - satellite
 - space based
- NDVI refers to
 - Normalized Differential Vegetation Index
 - National Defense Vitality Index
 - Normal Defense Vegetation Indices
 - National Differential Vitality Index
- NRSA is located in
 - Lucknow
 - Cuttack
 - Bhopal
 - Dehradun
- NNRMS is involved in
 - National Financial Development
 - Global Financial Development
 - Funding & Welfare
 - Resource Management
- Cell-based representation of map features is called
 - Line
 - Raster
 - Polygon
 - Vector
- GIS was introduced by
 - Raster Binny
 - Roger Tamlinson
 - Smith
 - Wolfman

- The conversion of addresses into geographic coordinates is called
 - Projection
 - Elevation
 - Binary Coding
 - Geocoding
- Any kind of spatial data analysis is possible with
 - GUI
 - GPS
 - GIS
 - Coordinate system

SECTION – B
Answer ALL Questions :
(5 × 7 = 35)

- a) Bring out the significances of different platforms used in remote sensing technique. **(OR)**
 b) Explain the types of electromagnetic radiation in remote sensing.
- a) Briefly explain the working mechanism of RADAR. **(OR)**
 b) Describe the methods to retrieve information from remote sensing instruments.
- a) Explain the scopes of remote sensing. **(OR)**
 b) Comment on IRS.
- a) List the uses of GIS. **(OR)**
 b) Bring out the relationship between GIS in remote sensing technique.
- a) How does GIS serve in problem solving? **(OR)**
 b) Discuss the method to create model using GIS.

SECTION – C
Answer any THREE Questions :
(3 × 10 = 30)

- Describe the basic principle and working mechanism of remote sensing.
- Discuss the differences between active and passive remote sensing with suitable example.
- Explain in detail the thematic and integrated applications of remote sensing.
- Describe the components of GIS.
- Discuss how GIS is used in project management with suitable example.


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B.A. / B.Sc. Degree (Semester) Examinations, April 2016

Part – IV : Non-Major Elective Subject : Second Semester : Paper – I

GARDENING

Under CBCS – Credit 2

Time: 2 Hours

Max. Marks: 75

SECTION – A
Answer ALL Questions :
(10 × 1 = 10)

1. The art of growing ornamental plants is
 - a) Gardening b) Floriculture c) Bonsai d) Horticulture
2. Cultivation of Flowering plants is called
 - a) Gardening b) Floriculture c) Bonsai d) Horticulture
3. Leaf cutting is practiced in
 - a) *Bryophyllum* b) Mango c) Coleus d) *Tectona*
4. Gootee is otherwise called as
 - a) Simple b) compound c) Trench d) Air
5. The upper part of the grafted plant is called as
 - a) Stock b) Scion c) Cleft d) Whip
6. Kitchen garden is otherwise called as garden of
 - a) Home b) Veranda c) Terrace d) All
7. Supply of Nutrients to Plant is called
 - a) Manuring b) Irrigation c) Pruning d) All
8. Drip irrigation method is a
 - a) Pitcher b) Surface c) Overhead d) All
9. An area completely covered in the grass is called
 - a) Lawn b) Pond c) Aquarium d) Bonsai
10. The Japanese art of growing plant is
 - a) Lawn b) Bonsai c) Rockery d) Trophy

SECTION – B
Answer ALL Questions :
(4 × 10 = 40)

11. a) What is the difference between indoor and outdoor garden?
(OR)
b) Write short notes on advantages of Garden.
12. a) Define Graftage? Explain any one method.
(OR)
b) What is Vegetative Propagation. Write its types.
13. a) What is irrigation? Give short notes on surface irrigation.
(OR)
b) What is Manuring? List out the name of manures.
14. a) Give a brief account on Rockery.
(OR)
b) What is Bonsai? How to develop a typical bonsai.

SECTION – C
Answer any TWO Questions :
(2 × 12½ = 25)

15. Describe Cutting? Explain its types.
16. How can you establish and maintain a Lawn.
17. Write an essay on Drip irrigation.

** ** ** ** ** ** **

**HORTICULTURE**

Under CBCS – Credit 2

Time: 2 Hours

Max. Marks: 75

SECTION – A**Answer ALL Questions :** (10 × 1 = 10)

- Indian institute of Horticultural research (IIHR) is located in
 - Karnataka
 - Tamil Nadu
 - Kerala
 - Delhi
- King of Flower is
 - Rose
 - Lotus
 - Jasmine
 - Gloriosa*
- Marcottage is known as
 - Layering
 - Ground Layering
 - Air Layering
 - Both b & c
- Grafting is best suitable for
 - Herbs
 - Tress
 - Shrubs
 - Climber
- Supply of water to plant is called
 - Irrigation
 - Manuring
 - Propagation
 - All
- Rhizobium* is a
 - Microbes
 - Biofertilizer
 - Bacteria
 - All
- Physical techniques that control shape, size and direction of plant growth is known as
 - Training
 - Thinning
 - Pruning
 - Topiary
- Removal of Narrow strip of bud is called
 - Ringing
 - Notching
 - Pruning
 - Topiary
- Which one of the following climber is used for indoor decoration?
 - Asparagus*
 - Pepper*
 - Clitoria*
 - All
- The Japanese art of growing plant is
 - Lawn
 - Bonsai
 - Rockery
 - Trophy

SECTION – B**Answer ALL Questions :** (4 × 10 = 40)

- Define horticulture. Mention the different branches of Horticulture.

(OR)

 - Write short notes on
 - Rockey
 - Bonsai
- Describe Layering? Explain different methods.

(OR)

 - What is cutting. Give its types with suitable illustrations.
- Write short notes on
 - Potting
 - Repotting

(OR)

 - What is green Manuring? Give examples.
- What is Lawn? List the important grasses being grown in lawns.

(OR)

 - Define Pruning. Give short notes on Pruning.

SECTION – C**Answer any TWO Questions :** (2 × 12½ = 25)

- Give a detailed account of cultivation of Jasmine.
- Write an essay on Irrigation.
- Write an essay on a model kitchen garden.

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B.Sc. Botany Degree (Semester) Examinations, April 2016

Part – IV : Skill Based Subject : Sixth Semester : Paper – I

PLANT BREEDING

Under CBCS – Credit 2

Time: 2 Hours

Max. Marks: 75

SECTION – A
Answer ALL Questions :
(10 × 1 = 10)

- Objective of plant breeding
 - Better yield
 - Better quality
 - diseases resistant
 - All the above
- The quickest method of plant breeding
 - Introduction
 - Selection
 - Hybridization
 - Mutation Breeding
- Emasculated flowers are bagged to prevent
 - Microbial infection
 - Pollution
 - Attack by insects
 - Pollination
- Who is the pioneer of Indian plant breeding?
 - T.S. Venkataraman
 - M.S. Swaminathan
 - K. Ramaiah
 - C.T. Patel
- Crosses between the plants of different species
 - Inter specific
 - Intra specific
 - Intra varietal
 - Inter varietal
- NBPGR is located at
 - Delhi
 - Pune
 - Kolkata
 - Mumbai
- Who is produced artificial interspecific Hybrid
 - Thomas Fairchild
 - Joseph Koerauter
 - Muller
 - All
- 40% of world food is obtained from
 - Rice & Wheat
 - Rice & Rye
 - Wheat & Corn
 - Corn & Barley

9. ICAR stands for

- Indian council of agricultural research
- Indian council of agriculture research
- International council of agricultural research
- Both a & b

10. Polyploids are artificially produced by

- Colchicine
- Tissue culture
- Crossing over
- All of the above

SECTION – B
Answer ALL Questions :
(4 × 10 = 40)

- Give an account of aims and objective of Plant breeding.
(OR)
b) Write about the history of Plant Breeding?
- What is pure line? Write about its procedure.
(OR)
b) Write about Types of Hybridization?
- Define selection. Discuss types of selection.
(OR)
b) Write short notes on pedigree methods.
- Define Ploidy. Add its achievements in plant breeding.
(OR)
b) Define heterosis. Write its achievements.

SECTION – C
Answer any TWO Questions :
(2 × 12½ = 25)

- Define Emasculation. Briefly write the various methods of emasculation.
- Describe in detail the procedure for plant introduction.
- Write a brief essay on mutation breeding.

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B.Sc. Botany Degree (Semester) Examinations, April 2016

Part – IV : Skill Based Subject : Sixth Semester : Paper – II

BIODIVERSITY CONSERVATION AND MANAGEMENT

Under CBCS – Credit 2

Time: 2 Hours

Max. Marks: 75

SECTION – A
Answer ALL Questions :
(10 × 1 = 10)

- MAB program stands for
 - Man and Biotechnology
 - Material and Biology
 - Man and Biology
 - Man and Biosphere
- Red date book contains data of
 - All plant species
 - all animal species
 - economically important species
 - threatened species
- IUCN is also called as
 - Man and Biosphere program
 - World Conservation Union
 - World Conservation Consortium
 - World Wide Conservation Union
- Which of the following region has maximum diversity
 - Mangroves
 - temperate rainforest
 - taiga
 - coral reefs
- The most important reason for decrease in biodiversity is
 - Habitat pollution
 - introduction of exotic species
 - over – exploitation
 - habitat destruction
- Conservation with in the natural habitat is
 - In situ conservation
 - ex situ conservation
 - in vivo conservation
 - ex vivo conservation
- The type of diversity including all the different kinds of living things found in a certain habitat is called as :
 - Species diversity
 - Genetic diversity
 - Ecosystem diversity
 - Population diversity

- In which of the following boundaries are not circumscribed :
 - Biosphere reserve
 - Sanctuary
 - National parks
 - Colony parks
- One of the endangered species of Indian medicinal plants is that of
 - Ocimum
 - Nependenthes
 - Garlic
 - Podophyllum
- Which is the most appropriate method for conservation of wild life?
 - Vaccination
 - Hybridization
 - Conservation in natural habitat
 - Killing of predator

SECTION – B
Answer ALL Questions :
(4 × 10 = 40)

- a) Describe the study about biodiversity conservation and management.
(OR)
b) Write a short on major causes for the loss of biodiversity.
- a) Write a short note on uses of biodiversity.
(OR)
b) Give an account of importance of biodiversity conservation.
- a) What is biosphere e reserve? Describe the biosphere reserve.
(OR)
b) Give an account of “Hot Spots of Biodiversity”.
- a) Write a sort note on important role of IUCN.
(OR)
b) Describe the various act of biodiversity conservation.

SECTION – C
Answer any TWO Questions :
(2 × 12½ = 25)

- Detail account on various levels of biodiversity.
- Describe the of threatened diversity.
- Write an essay on
 - in situ conservation
 - ex situ conservation

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**SECTION – A****Answer ALL Questions :****(10 × 1 = 10)**

- The system of classification proposed by Bentham and Hooker is
 - Artificial
 - Natural
 - Phylogenetic
 - Numerical
- Which of the following families belong to inferae
 - Cucurbitaceae
 - Leguminosae
 - Compositae
 - Liliaceae
- Hood like connective tissue is found in
 - Stamen
 - Ovary
 - Gynoecium
 - Pistil
- Which of the following is the largest family in the Indian flora
 - Compositae
 - Leguminosae
 - Gramineae
 - Orchidaceae
- Transpiration occurs from
 - Leaves
 - Stems
 - All of the aerial parts
 - Roots
- The process of the escape of liquid from the tip of uninjured leaf is called
 - Evaporation
 - Transpiration
 - Guttation
 - Evapo-transpiration
- The most important reaction/phenomenon in the universe is
 - Photosynthesis
 - Cation –exchange
 - Reduction
 - Carbonation
- Calvin cycle takes place in
 - Chloroplast grana
 - Chloroplast envelope
 - Chloroplast stroma
 - Mitochondira
- Effect of day length on plant development is called
 - Phototropism
 - Photoperiodism
 - Chemotropism
 - Photosynthesis
- Name the hormone is responsible for vernalisation
 - Florigen
 - Caulocaline
 - Abscission
 - Vernalin

SECTION – B**Answer ALL Questions :****(5 × 7 = 35)**

- Mention the merits and demerits of Bentham and Hooker's classifications.

(OR)
 - Write notes on natural system.
- Write key characters of Annonaceae.

(OR)

 - State the floral characters of Asclepiadaceae.
- Explain the significance of Osmosis in plants.

(OR)
 - Compare and contrast Transpiration and Guttation.
- Describe the ultra structure of Chloroplast.

(OR)

 - Explain C₃ cycle.
- Write short notes on Photoperiodism.

(OR)

 - Explain the importance of vernalisation in plants.

SECTION – C**Answer any THREE Questions :****(3 × 10 = 30)**

- Give the frame work in Bentham and Hooker's system of classification.
- Enumerate the economic importance of Poaceae.
- Describe the different kinds of transpiration.
- Discuss the mechanism of light reaction in photosynthesis.
- What are Auxins? Give their physiological roles in higher plants.