

+ 2 BIO-BOTANY

2,3,5 Marks Important Questions (MLM)

2 MARKS:-

Chapter: 1

1. What are clones?
2. "Tissue culture is the best method for propagation rare and endangered plant species" Discuss.
3. What is endothelium?
4. What is endosperm?
5. Microsporogenesis?
6. Pollinium
7. Tapetum
8. Parthenocarpy fruits
9. What is stomium?
10. Double fertilization
11. What is reproduction
12. What is Cantharophily?

Chapter: 2

1. Mutiple alleles?
2. What is meant by true breeding or pure breeding lines strain?
3. What is meant by gene interaction?
4. Co-dominance
5. Lethal genes
6. Pleiotrophy
7. Polygenic inheritance
8. Define genetics

Chapter: 3

1. Synapsis or Syndesis
2. Crossing Over
3. Chromosomal theory of inheritance
4. Multiple alleles
5. Nullisomy
6. Ploidy
7. Define linkage

Chapter: 4

1. What are the materials used to grow microorganism like spirulina?
2. Name the chemicals used in gene transfer
3. What is bioremediation?
4. Single Cell Protein(SCP)
5. What are called Metabolites?
6. Genome
7. DNA probes
8. Uses of Cladogram
9. Applications of Bioremediation
10. What is Ti plasmid Bacteria ?
11. Polymerase Chain Reaction(PCR)

Chapter: 5

1. What do you mean Embryoids?
2. Totipotency
3. Cybrid
4. Cell suspension culture
5. Artificial seeds
6. Uses of cell suspension culture
7. Germplasm conservation
8. Hardening
9. Give the examples for micro propagation performed plants

Chapter: 6

1. What is Phytoremediation?
2. Sandy soil is not suitable for cultivation. Explain why?
3. How does an orchid ophrys ensures its pollination by trees?
4. What is vivipary?
5. What is Seed ball?
6. Co-evolution
7. Ecological Niche
8. Haustorial roots
9. Cladode
10. Phylloclade
11. Phyllode
12. Green algae are not likely to be found in the deepest strata of the ocean. Give at least one Reason.

Chapter: 7

1. The productivity of profundal zone will be low Why?
2. Ten percent law
3. Ecological pyramids
4. Plant succession
5. Construct the food chain with the following data. (Hawk, plants, frog, snake, grasshopper)

Chapter: 8

1. Ozone hole
2. Give four examples of plants cultivated in commercial agroforestry
3. Benefits of agroforestry
4. What is meant by Green House effect?
5. Global warming
6. Dobson Units
7. Agroforestry
8. Carbon sequestration
9. What is Remote sensing?

Chapter: 9

1. What is meant by plant breeding?
2. Plant Introduction
3. Acclimatization
4. Pureline selection
5. Heterosis or Hybrid vigour
6. Green manuring
7. Main objectives of the green manuring

Chapter: 10

1. What is pseudo cereal? Give an example
2. Give definitions for Organic farming
3. Define Biomedicines
4. How is wood pulp and paper manufacture?
5. Define Entrepreneurial Botany
6. What are Psychoactive drugs?

3 MARKSChapter: 1

1. A detached leaf of Bryophyllum produces new plants. How?
2. Differentiate Grafting and Layering
3. Functions of tapetum
4. Write short note on Pollen kitt.
5. Name the three types of endosperm
6. Scutellum
7. What is polyembryony. How it can commercially exploited?
8. Geitonogamy
9. "The endosperm of angiosperm is different from gymnosperm". Do you agree, Justify
10. Draw and label the structure of Embryo sac.

Chapter: 2

1. What is back cross? Write its types
2. What is cytoplasmic inheritance?
3. Atavism
4. Define Dominant Epistasis
5. Define Plasmogones
6. Give the names of the scientists who rediscovered Mendelism

Chapter: 3

1. What is the difference between missense and Nonsense mutation
2. What is gene mapping? write its uses
3. Three types of synapsis
4. What is comutagens? Write examples
5. Chiasmata
6. Write short note on Colchicine
7. Significance of Ploidy
8. Sonaro 64

Chapter: 4

1. pBR332
2. Advantages of herbicide tolerant crops
3. Advantages of Bt cotton
4. Plasmid
5. Biopiracy
6. What is ELISA? write it use
7. Applications of single cell protein
8. Name the enzymes using in Biotechnology or Recombinant DNA technology
9. EcoRI

Chapter: 5

1. Write the various steps involved in cell suspension culture
2. Embryoids. Write its applications
3. Cell suspension culture
4. Cryopreservation
5. Virus-free plant

Chapter: 6

1. Distinguish habitat and niche
2. Why are organisms called as eurythermals and some others as stenohaline?
3. What is Albedo effect and write their effects?
4. Lichen is considered as a good example of obligate mutualism. Explain
5. What is thermal stratification? Mention their types
6. Myrmecophily?
7. Co-evolution. write examples
8. Breathing roots
9. Velamen tissue
10. What are Censor mechanisms? Give an example
11. Draw T.S of host along with Cuscuta
12. Draw and label the diagram of thermal stratification of pond
13. What are ecological equivalents? Give one examples
14. Ecotone and Edge effect
15. Write any three Ecologically important days
16. How does an orchid ophrys ensures its pollination by bees? What is floral mimicry?
17. What is myrmecophily?

Chapter: 7

1. Pyramid of energy is always upright. Give reasons
2. What will happen if all producers are removed from ecosystem
3. Name of the food chain which is generally present in all type of ecosystems. Explain and write their significance
4. Significance of food web
5. Name the three zones of pond ecosystem
6. Name the three types of plant succession
7. Define Ecosystem management

Chapter: 8

1. Expand CCS
2. How do forests help in maintaining the climate?
3. Benefits of agroforestry
4. What is invasive species?
5. What are demerits of Alien invasive species?
6. Sacred groves
7. Eutrophication
8. What are plant indicators?
9. Effects of Global Warming
10. Define Silvopasture system

Chapter: 9

1. Differentiate primary introduction from secondary introduction
2. How are microbial inoculants used to increase the soil fertility
3. What are the different types of hybridization?
4. Biofertilizers
5. Seaweed Liquid Fertilizer
6. Uses of Seaweed Liquid Fertilizer
7. Objectives of plant breeding

Chapter: 10

1. Write the cosmetic uses of Aloe
2. Differentiate bio-medicines and botanical medicines
3. Discuss which wood is better for making furniture
4. Uses of turmeric
5. Write the uses of nuts you have studied
6. Uses of Curcumin (OR) Why do we use turmeric in food which has no taste and aroma?
7. What is Capsaicin? What is its uses?
8. Uses of Biofertilizer

5 MARKSChapter: 1

1. List out the functions of tapetum
2. Explain the structure of an ovule with a suitable diagram
3. Differentiate the structure of Dicot and Monocot seed

4. Give a detailed account on parthenocopy. Add a note on its significance
5. What is endosperm? Explain the types
6. Enumerate the characteristic features of Entomophilous flowers

Chapter: 2

1. Explain the law of dominance in monohybrid cross
2. Describe Dominant epistasis with an example
3. Differentiate continuous variation with discontinuous variation
4. Bring out the inheritance of chloroplast gene with an example
5. Reason of Gregor Johann Mendel successful
6. Back cross
7. Incomplete dominance-No blending of genes

Chapter: 3

1. Explain the mechanism of crossing over
2. What is gene mapping? Write its uses
3. Significance of ploidy

Chapter:4

1. What do you know about the word pBR322? (or) Draw and label pBR322
2. Mention the application of Biotechnology
3. Write the advantages of herbicide tolerant crops
4. Write the advantages and disadvantages of Bt cotton
5. You are working in a biotechnology lab with a bacterium namely E.Coli. How will you cut the nucleotide sequence? Explain it
6. Application of Single Cell Protein(SCP)
7. Explain the steps involved in Recombinant DNA Technology.

Chapter: 5

1. What do you mean Embryoids? write its application
2. Explain the basic concepts involved in plant tissue culture
3. Give an account on Cryopreservation
4. Based on the material used, how will you classify the culture technology? Explain it.
5. Application of Plant Tissue Culture
6. Advantages of artificial seeds

Chapter: 6

1. What is thermal stratification? Mention their types with diagram
2. Give an account of various types of parasitism with examples
3. Enumerate the anatomical adaptations of xerophytes
4. List out any five morphological adaptations of halophytes
5. What are the advantages of seed dispersal
6. Write short note on Epiphytes with suitable diagram

Chapter: 7

1. Generally human activities are against to the ecosystem, where as you a student how will you help to protect ecosystem
2. Write is food web? Write its significance
3. Characteristics of ecological succession
4. Significance of plant Succession

Chapter: 8

1. How do sacred groves help in the conservation of biodiversity?
2. Which one gas is most abundant out of the four commonest greenhouse gases? Discuss the effect of this gas on the growth of plants?
3. What are the effects of deforestation and benefits of agro forestry? Effects of deforestation
4. Effects of ozone depletion
5. Achievements of Afforestation

Chapter: 9

1. List out the new breeding techniques involved in developing new traits in plant breeding
2. Objectives of Plant Breeding
3. Plant introduction and its types
4. What are the different types of hybridization?

Chapter: 10

1. Give an account of active principle and medicinal values of any two plants you have studied
2. What are the King and Queen of species? Explain about them and their uses
3. How will you prepare an organic pesticide for your home garden with the vegetables available from your kitchen?
4. Write short note on Organic farming
5. Write about the preparation of Bio-pest repellent
6. Write about the attributes for prominence of cereals as food plants.

+2 BIO-ZOOLOGY

(2, 3,5 Marks Important Questions (MLM))

2 MARKS

Chapter: 1

1. What is parthenogenesis? Give two examples from animals?
2. Differentiate Regeneration in lizard and Regeneration in planaria
3. Difference between syngamy and fertilization
4. Name an organism where cell division is itself a mode of reproduction
5. Gemmules
6. Paedogamy
7. What is regeneration? Write its types with examples
8. Amoebulae or Pseudopodiospore
4. Amniocentesis, the foetal sex determination test, is banned in our country, Is it necessary?
5. What is Saheli?
6. Vasectomy
7. Tubectomy
8. What is Chorionic villus sampling(CVS)
9. Which vitamin is known as anti-sterility vitamin? Why?

Chapter: 4

1. What is criss-cross inheritance?
2. What are holandric genes?
3. Mention the symptoms of phenylketonuria
4. What is Karyotyping?
5. Agglutination
6. Pedigree analysis

Chapter: 2

1. Difference between Spermiogenesis and Spermatogenesis
2. What is inhibin? State its functions
3. What is Leydig cells? Name the hormone secreted by Leydig cells.
4. Isthmus
5. Ovulation
6. Corpus luteum
7. Corpus albicans
8. Ectopic pregnancy
9. What is relaxin? Write its function
10. "Let-down reflex"
11. Braxter-Hicks contractions

Chapter: 5

1. Differentiate –Leading strand and Lagging strand
2. Mention any two ways in which single nucleotide polymorphism(SNPs) identified in human Genome can bring revolutionary change in biologist and medical science
3. Name the anticodon required to recognize the following codons: AAU, CGA, UAU and GCA
4. Differentiate Nucleoside and Nucleotide
5. What is Kornberg enzyme?
6. Transcription
7. Operons
8. Okazaki fragments
9. What is TATA box? State its function
10. One gene-one enzyme hypothesis

Chapter: 3

1. What is amniocentesis? Why a statutory ban is imposed on this technique?
2. Expand the following: a) ZIFT b) ICSI
3. Differentiate foeticide and infanticide

Chapter: 6

1. List out major gases seems to be found in the primitive earth
2. Rearrange the descent in human evolution
Australopithecus-Homo erectus-Homo sapiens-Ramapithecus-Homo habilis
3. Abiogenesis or Theory of spontaneous generation
4. Coacervates
5. Geological time scale
6. Homologous structure
7. Analogous structure
8. Vestigial organs
9. Connecting links
10. Micro evolution
11. Genetic drift or Sewall wright effect

Chapter: 7

1. What are interferons? Mention their role
2. What is vaccine? What are its types?
3. Why do you think it is not possible to produce vaccine against 'Common cold'?
4. Define health by WHO
5. Antigen
6. Lymphoid organs
7. What are Haptens?
8. Antibodies
9. Name the two test to diagnose HIV
10. Define metastasis
11. What is zoonotic virus?
12. Haematopoiesis
13. Auto immune diseases.

Chapter: 8

1. List the advantages of biogas plants in rural areas
2. When does antibiotic resistance develop?
3. What is Bioremediation?
4. What is bacteriocidal and bacteriostatic
5. Super bug
6. What is Zymology?
7. Microbial fuel cell(MFC)
8. What is Biogas or Gobar gas
9. Ethanol is a industrial alcohol-Justify

Chapter: 9

1. What is genetically engineered Insulin?
2. What are DNA vaccines?
3. Explain why cloning of Dolly, the sheep was such a major scientific break through?
4. Interferon
5. Pluripotency
6. Totipotency
7. Stem cell banks
8. Polymerase Chain Reaction(PCR)
9. Define animal cloning

Chapter: 10

1. Define ecological niche
2. What is Acclimatisation?
3. What is Pedogenesis?
4. What is Soil permeability
5. Ecosphere
6. Guilds
7. Ecological equivalents
8. Allen's rule
9. Bergmann's rule
10. Jordan's rule
11. Van't hof's rule
12. Coriolis effect
13. Population density
14. Name the physiological adaptations seen in animals

Chapter: 11

1. Define endemism
2. How many hotspots are there in India? Name them
3. Name the active chemical found in the medicinal plant Rauwolfia vomitoria. What type of Diversity it belongs to?
4. What are called endangered species?
5. Define Biodiversity
6. Taxonomic impediment
7. What is Mean Sea Level(MSL)?
8. Hotspots
9. What is meant by Extinction?

Chapter: 12

1. What is SMOG and how it is harmful for us?
2. Eutrophication
3. Algal Bloom
4. How does recycling help reduce pollution?
5. Catalytic convertors
6. Ecological sanitation(Ecosan)
7. What are the major cause of acid rain?
8. What is smog?
9. What is 4'R'?
10. Agrochemicals
11. What is AQI?
12. What is meant by accelerated eutrophication?

3 MARKSChapter: 1

1. Differentiate Binary fission in amoeba and Multiple fission in plasmodium
2. Name the phenomenon where the female gamete directly develops into a new organism with an example.
3. Which type of reproduction is effective- Asexual or Sexual and why?

4. Encystment

5. Apolysis

6. Hologamy

7. Define: Merogamy. Isogamy, Anisogamy

8. In Honey bees, how the queen bees, Worker bee and Drones develop?

Chapter: 2

1. How polyspermy avoided in humans?
2. What is colostrums? Write its significance
3. Draw a labeled sketch of a spermatozoan
4. Name the hormones produced from the placenta during pregnancy
5. What is sertoli cells? What is its function?
6. Epididymis
7. Name the three layers of uterus
8. Morula
9. Differentiate Monozygotic twins and Dizygotic twins
10. Name the Extra embryonic membranes
11. Placenta
12. Capacitation
13. Differentiate Hyaluronic acid and Hyaluronidase
14. Acrosome and its functions
15. Nebenkern(mitochondrial spiral)

Chapter: 3

1. How are STDs transmitted?
2. Write the preventive measures of STDs
3. What is IUDs? Write its role.
4. Define surrogacy
5. GIFT
6. Write the main causes infertility
7. What is known as Assisted Reproductive Technology(ART)

Chapter: 4

1. What is haplodiploidy?
2. What is Lyonisation?
3. Mention the symptoms of Down's syndrome
4. Brief about female heterogamety
5. Applications of karyotyping

Chapter: 5

1. Give the reasons: Genetic code is 'Universal'
2. Differentiate –Template strand and Coding strand
3. State any three goal of the genome project
4. Why tRNA is called an adapter molecule
5. What are the three structural differences between RNA and DNA
6. Base pair rule or Chargaff law
7. Genetic code
8. Distinguish Transcription and Translation or How is the two stage process of protein synthesis advantages?

Chapter: 6

1. Differentiate divergent evolution and convergent evolution
2. Define Hardy Weinberg law
3. Who disproved lamarck's theory of acquired characters?How?
4. Relative dating and absolute dating
5. Use and disuse theory
6. Founder's effect

Chapter: 7

1. Name and explain the type of barriers which involve macrophages
2. What are the cells involved innate immune system?
3. A patient was hospitalized with fever and chills.Merozoites were observed in her blood.what Is your diagnosis/

4. What is signet ring?
5. What is lymph? Write it functions.
6. Differentiate Epitope and Paratope
7. Anaphylaxis
8. Draw and label the male and female ascaris
9. What is meant by withdrawal symptoms?
10. What is haemozoin?
11. Nipah virus

Chapter: 8

1. How is milk converted into curd? Explain the process of curd formation
2. Define: a)Antibiotic b) Zymology c) Superbug
3. When does antibiotic resistance deveop?
4. Bioremediation
5. Single Cell Protein(SCP)
6. What are statins?
7. Write about pseudomonas putida and its use
8. "Clot buster"

Chapter: 9

1. How was Insulin obtained before the advent of rDNA technology? What were the problems Encountered?
2. What are transgenic animals? Give examples.
3. Differentiate somatic cell gene therapy and Germ line gene therapy
4. What are stem cells? Explain its role in the field of medicine.
5. Genetic engineering
6. Recombinant DNA and Recombinant DNA technology
7. ELISA
8. SCID

Chapter:10

1. Differentiate Eurytherms and Stenotherms with examples
2. Explain hibernation and aestivation with examples
3. Classify the aquatic biomes of earth
4. Natality and Mortality
5. What is Amensalism?
6. What is Q10 value? How it is calculated?

Chapter: 11

1. Red data book. Mention its purposes
2. Protected areas
3. Wild life sanctuaries
4. Name the three levels of biodiversity
5. What is Coextinctions? Write an example
6. What are most important causes for biodiversity loss?
7. Sacred Groves

Chapter: 12

1. Expand a)CFC b) AQI c) PAN
2. What effect can fertilizer runoff have on an aquatic ecosystem
3. Effects of Ozone depletion
4. Effects of global warming
5. Bio-magnification of DDT

5 MARKSChapter: 1

1. Explain parthenogenesis
2. Explain the different kinds of Syngamy in living organisms
3. Write short notes regeneration
4. Write various phases of the cycle in organisms

Chapter: 2

1. Describe the structure of the human ovum with a neat labeled diagram
2. Describe the structure of the human sperm
3. Differentiate spermatogenesis and oogenesis
4. Write short note on extra embryonic membranes
5. Explain the role of oxytocin and relaxin in parturition and lactation

Chapter: 3

1. What are strategies to be implemented in India to attain total reproductive health?
2. Explain In Vitro Fertilization(IVF)
3. Write about surgical sterilization methods

Chapter: 4

1. Tabulate the genetic basis of ABO blood grouping man
2. How is sex determined in human beings?
3. Applications of Karyotyping
4. Explain marriage between colour blind man and normal visioned women
5. How Erythroblastosis foetalis can be prevented?
6. Autosomal aneuploidy in human beings
7. Explain Autosomal abnormalities in human beings

Chapter: 5

1. Goals of the genome project
2. Properties of gene
3. Explain the structure of the Lac operon in E.coli
4. What are the applications of DNA fingerprinting
5. What are five salient features of genetic code?

Chapter: 6

1. Mention the main objections to Darwinism
2. Industrial melanism
3. Hardy Weinberg's assumptions
4. Explain vestigial organs

Chapter: 7

1. Explain the structure of Immunoglobulin with suitable diagram
2. Amoebiasis
3. Differentiate Active immunity and passive immunity
4. Structure HIV

Chapter: 8

1. What is referred to as industrial alcohol? Briefly describe its preparation
2. Microbes in the production of biogas
3. Explain Microbial Fuel Cell(MFC)

Chapter: 9

1. How is the amplification of a gene sample of interest carried out using PCR?
2. Explain how ADA deficiency can be corrected?
3. Explain how recombinant Insulin can be produced.
4. Explain the creation of dolly
5. Advantages and disadvantages of cloning animals

Chapter: 10

1. Give an account of population regulation
2. Give an account of the properties of soil
3. Describe Growth models/Curves
4. List the applications seen in terrestrial animals.
5. Differences of r-selected and k-selected species
6. List the essential properties of water

Chapter: 11

1. What are the factors that drive habitat loss?
2. List out the various causes for biodiversity losses.
3. How can we contribute to promote biodiversity conservation?
4. Write short note on Global climate changes
5. List some of the importance of IUCN

Chapter: 12

1. Discuss the role of an individual to reduce environmental pollution
2. Effects of air pollution
3. Medical waste
4. List out some control and preventive measures to remove pollutants in the atmosphere
5. Effects of water pollution