

DR.KANAILAL BHATTACHARYYA COLLEGE

Mid-term-2015

Part-I (HONS) First Paper

BOTANY

Time 2hr

FM-50

1. Answer the following questions

[10]

- (a) Name one gram positive and gram negative bacteria. 1
- (b) What is R-Plasmid? 1
- (c) What is necrosis? Give an example 1
- (d) What is difference between filaments and trichome? 1
- (e) What is triphasic life cycle? 1
- (f) What are whiplash and tinsel flagella? 1
- (g) What do you mean by holocarpic fungus? Give an example. 2
- (h) What is dolipore septum? 1
- (i) What is mycoprotein? Give an example. 1

[2X5]

2. Answer any two:

- (a) Physicochemical properties of TMV.
- (b) Distinguish between gram positive bacteria and gram negative bacteria
- (c) Describe asexual reproduction of *Synchytrium* with label diagram.
- (d) Characterizes Mastigomycotina and Zygomycotina.
- (e) Describe the ultrastructure of algal flagella.
- (f) Describe the ultrastructure of Cyanophycean cell.

[3X10]

3. Answer any three

- (a) Describe the structure of cell wall of bacteria. What is the full form of ICNV? Give an example of ssRNA virus. 8+1+1
- (b) How plant viruses are transmitted? Distinguish between lytic and lysogenic cycle. Describe the lytic cycle of T4-phage. 3+3+4

Module-II(Marks-50)

4. Answer the following questions:

(a)Distinguish between pathogenecity and pathogenesis.(b)Define pandemic disease.(c)What is mycoprotein?(d)Name one biocontrol agent(e)What are anamorphic fungi?(f)What is biotroph?
(2+2+2+1+1+2)

5. (a) What is fruticose lichen? State the ecological and economic importance lichen (1+4)

Or, Sexual cycle differs from parasexual cycle justify 5

(b)Write notes on Koch's postulation 5

Or, discuss the role of quarantine in plant disease management. 5

6.(a)(i)Discuss in brief the sexual reproduction process in *Rhizopus*. 5

(ii)Characterizes the different types of mycorrhiza with example. 5

(iii)Give an outline of industrial production of ethanol. 5

Or,(i)Give a brief account of life cycle of *Synchytrium*. 5

(ii)Comment on cultivation and food value of *Pleurotus*. 5

(ii)Write notes on mycotoxin.

(b)Describe the symptoms, disease cycle and control measures of Black stem rust of wheat.
Mention the name of pathogen for late blight disease of potato and brown spot of rice.
3+6+4+2

Or, Differentiate between prophylactic and therapeutic treatment of plant disease. Briefly discuss the techniques followed in control of plant disease. What is its advantage over chemical control?
4+9+2

DR.KANAILAL BHATTACHARYYA COLLEGE

Test Examination-2015
BOTANY
Part-II (HONS) Third Paper

Module-V (50Marks)

Time-4hr

FM-100

1. Answer the following:

(a)What are parichnos strands and where they found?(b)What are carinal canals.coment on their origin.(c)Name a pteridophyte used as pesticide.(d)Name two species of *Gnetum* of two different habitats.(e)Differentiate between manoxyle and pyscnoxylic wood.(f)The name cordaites was originally used for which organ.
2+2+1+2+2+1

2. (a)Explain the morphological nature of rhiophore. 5

OR

State the land adaptive features in *Rhynia*.Mention the fern characters of *Psilotum*. 3+2

(b)Draw and describe the internal morphology of *Pinus* needle. 5

OR

Draw and describe the ovule of *Cycas* in longitudinal section. 5

3. (a) Define heterospory. Mention binomial heterosporous ligulate pteridophyte from eastern India. Discuss the phenomenon of origin and evolution of seed habit. How far has the *Selaginella* reached the level of seed habit?
2+1+8+4

OR

Name the different organs of reconstructed plant *Calamities*. Give an illustrated account of its reproductive structures. What is incipient heterospory? 4+8+3

(b)What is teleome mention the different elementary process associated with the teleome concept. Explain with the help of teleome concept, the origin and reproductive structure of *Psilopsodia* and *Sphenopsida*. 2+5+4+4

OR

State the economic importance of gymnosperms with reference to wood resins, essential oils, fatty acids and drugs with one example in each case. Mention the salient features of Pteridospermophyta. Describe the development of female gametophyte of *Cycas* with suitable diagrams. 5+5+5

Dr.KANAILAL BHATTACHARYYA COLLEGE

Test Examination-2015

B.Sc (Gen)-Part-II (2nd Year)

Botany-General Paper-II

Time-2hrs

F.M-50

Module-III (Marks-25)

1. Answer any five

5X1

a) What is phragmoplast?(b)Write the names of mechanical tissues.(c)Define secondary growth.(d)What is diffuse centromere.(e)Write one difference between nucleotide and nucleoside.(f)What is TATA box.(g)Write the name of initiating codon and terminating codon.(h)Define intron and exon?(i)What is periderm?(j)Write the name of one physical and one chemical mutagen.(k)What is linkage group?(l)What is transposon?(m)What is nonsense mutation?

2 Answer any two:

5X2

(a) Tunica corpus theory of shoot apex. (b)Brief idea about nucleosome concept. (c)Explain genetic code is a triplicate. (d)Write a note about chromosomal aberration.

3. Answer any one

10

- (a)Describe different types of stele with example. Mention the evolution of stele. **7+3**
- (b)Write a note about stomatal types of dicot.Briefly describes the anomalous secondary growth of Tecoma. **5+5**
- (c)Briefly describe different types of allopolyploidy and aneuploidy. **5+5**
- (d)Define central dogma. Briefly describe DNA replication mechanism in prokaryote. **2+8**

Module –IV (Marks-25)

4. Answer any five

1X5

(a)What is guttation?(b)Write a name of non-symbiotic N₂fixing bacteria.(c)Write the chemical formula of chlorophyll-a(d)Write the scientific name of Neem.(e)Define apoenzyme.(f)What is Kranz anatomy?(g)What is red drop?(h)Define autoecology.(i)Define ecotone.(j)Write the scientific name of a sugar yielding plant.(k)Define Primary protein.(l)What do you mean by endangered plant species.(m)What is RUBISCO?

5. Answer any two:

5X2

- (a) Write the role of potassium ion in stomatal movement.
- (b) Classify plants depending on photoperiodic response with example. (c) Briefly describe physiological adaptation of halophytes with examples. (d) Write a note about hydrosere.

6. Answer any one:

10

- (a) What do you mean by C3 and C4 plant? Briefly describe the C3 cycle with mentioning enzymes. 2+8
- (b) What do you mean by natural and synthetic hormone? Give example briefly describe the physiological roles of auxin. 3+7
- (c) What do you mean by in-situ and ex-situ conservation? Describe morphological, anatomical and physiological adaptation of hydrophytes. 3+7
- (d) Write the scientific name, family, parts used and importance of the following plants 2.5X4
- (i) Ground nut.
- (ii) Teak.
- (iii) Cumin.
- (iv) Coffee.
- (e) Write a note about 4+3+3
- (i) Vernalization.
- (ii) Importance of Krebs cycle.
- (iii) Phytoremediation.

Dr.KANAILAL BHATTACHARYYA COLLEGE

Test Examination-2015

B.Sc (Gen)-Part-II (1st Year)

2nd

Botany-General Paper-II

Time-2hrs

F.M-50

Module-III (Marks-25)

1. Answer any five

5X1

a) What is phragmoplast?(b)Write the names of mechanical tissues.(c)Define secondary growth.(d)What is diffuse centromere.(e)Write one difference between nucleotide and nucleoside.(f)What is TATA box.(g)Write the name of initiating codon and terminating codon.(h)Define intron and exon?(i)What is periderm?(j)Write the name of one physical and one chemical mutagen.(k)What is linkage group?(l)What is transposon?(m)What is nonsense mutation?

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5X2

(a) Tunica corpus theory of shoot apex. (b)Brief idea about nucleosome concept. (c)Explain genetic code is a triplicate. (d)Write a note about chromosomal aberration.

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- (a)Describe different types of stele with example. Mention the evolution of stele. 7+3
- (b)Write a note about stomatal types of dicot.Briefly describes the anomalous secondary growth of Tecoma. 5+5
- (c)Briefly describe different types of allopolyploidy and aneuploidy. 5+5
- (d)Define central dogma. Briefly describe DNA replication mechanism in prokaryote. 2+8

Module -IV (Marks-25)

4. Answer any five

1X5

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5. Answer any two:

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(a) Write the role of potassium ion in stomatal movement.

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6. Answer any one:

10

(a) What do you mean by C₃ and C₄ plant? Briefly describe the C₃ cycle with mentioning enzymes. 2+8

(b) What do you mean by natural and synthetic hormone? Give example briefly describe the physiological roles of auxin. 3+7

(c) What do you mean by in-situ and ex-situ conservation? Describe morphological, anatomical and physiological adaptation of hydrophytes. 3+7

(d) Write the scientific name, family, parts used and importance of the following plants 2.5X4

(i) Ground nut.

(ii) Teak.

(iii) Cumin.

(iv) Coffee.

(e) Write a note about 4+3+3

(i) Vernalization.

(ii) Importance of Krebs cycle.

(iii) Phytoremediation.

DR.KANAILAL BHATTACHARYYA COLLEGE

Mid-term-2016

Part-I (HONS) First Paper

Module-I (25Marks)

BOTANY

Time-2hr

FM-50

1. Answer the following questions:

(1X5)

- (a) What is Gaidukov phenomenon?
- (b) What is caregeenan?
- (c) Name one coralline alga.
- (d) Name a plant virus with DNA.
- (e) What is "Flagellar root"?

2. Answer any one:

1X5

- (a) Comment on the ultrastructure of algal plastids.
- (b) Discuss the brief modes of transmission and translocation of plant viruses.
- (c) Give an account of structure and function of heterocyst of Cyanobacteria.

3. Answer any one:

1X15

- (a) (i) What is oogamous type of reproduction? Describe the nanndrous type of sexual reproduction found in *Oedogonium*. (3+6)
- (ii) Give an account on culture of microalgae for production of single cell protein. Name the potential algae. (4+2)
- (b) Distinguish between Archaea and Bacteria. Differentiate between chemical composition of Gram (+Ve) and Gram (-Ve) bacterial cell wall. Give a brief account of the structure of bacteria' flagella. (5+5+5)
- (c) What is triphasic alteration of generation? Describe sexual reproductive process of *Polysiphonia*. Stae post fertilization changes in it with suitable diagrams. (2+6+7)

Module-II (25 Marks)

4. Answer the followings:

1X5

- (a) What is "Herting-Net"?
- (b) Distinguish between Pathogenecity and Pathogenesis.
- (c) What is Biotroph?
- (d) What is mycoprotein?
- (e) What is populospore?

5. Answer any one:

1X5

- (a) Write a short note on Koch's postulation.
- (b) Write a short note on Reproductive process of *Rhizopus*.
- (c) Write a brief account on Disease triangle.

6. Answer any one:

1X15

- (a) Describe the symptoms disease cycle and control measures of stem rot of Jute. Give the key diagnostic features of the causal organism. (3+6+4+2)
- (b) Give an outline of Anis worth's (1973) classification of fungi. Discuss different types of heterothallism found in fungi. (7+8)
- (c)(i) Describe the structure and development of fruit body of coprophilous fungus.
- (ii) Give a schematic outline of cultivation procedure. (7+8)

DR.KANAILAL BHATTACHARYYA COLLEGE

Test examination-2016

Part- I (HONS) 1st Paper

BOTANY

Module-I (Marks-50)

1. Answer the following questions:

T-4hr

(a)What is Gaidukov phenomenon? (b)What is the difference between raphe and pseudoraphe?(c)Name one potential algal genus used for beta-carotene production(d)Define parasexuality.(e)What is prion?(f)What is pseudomurein?(2+2+1+2+1+2)

2. (a) Give an account of structure and function of heterocyst of Cyanobacteria 5.

Or, Write notes on auxspore formation in centric diatoms. 5

(b)Give an outline of industrial production of streptomycin. 5

Or, Discuss in brief the modes of transmission and translocation of plant virus. 5

3. (a) Compare the reproductive structure and mode of reproduction of two algal genera having oogamous type of reproduction. 8+7

Or,What is triphasic alteration of generation? Describe the sexual reproductive process of *Polysiphonia*.State the post-fertilization changes in it with suitable diagrams. 2+6+7

(b)Describe the nature and function of glycocalyx.Give an outline of industrial production of vinegar. Discuss in brief different steps of TMV multiplication. 5+5+5

Or, Distinguish between archaea and bacteria. Differentiate between the chemical compositions of gram negative and gram positive bacterial cell wall. Give a brief note on the structure of bacterial flagella. 5+5+5

Module-II(Marks-50)

4. Answer the following questions:

(a)Distinguish between pathogenecity and pathogenesis.(b)Define pandemic disease.(c)What is mycoprotein?(d)Name one biocontrol agent(e)What are anamorphic fungi?(f)What is biotroph?

(2+2+2+1+1+2)

5. (a) What is fruticose lichen? State the ecological and economic importance lichen (1+4)

Or, Sexual cycle differs from parasexual cycle justify 5

(b)Write notes on Koch's postulation 5

Or, discuss the role of quarantine in plant disease management. 5

6.(a)(i)Discuss in brief the sexual reproduction process in *Rhizopus*. 5

(ii)Characterizes the different types of mycorrhiza with example. 5

(iii)Give an outline of industrial production of ethanol. 5

Or,(i)Give a brief account of life cycle of *Synchytrium*. 5

(ii)Comment on cultivation and food value of *Pleurotus*. 5

(ii)Write notes on mycotoxin. 5

(b)Describe the symptoms, disease cycle and control measures of Black stem rust of wheat. Mention the name of pathogen for late blight disease of potato and brown spot of rice.

3+6+4+2

Or, Differentiate between prophylactic and therapeutic treatment of plant disease. Briefly discuss the techniques followed in control of plant disease. What is its advantage over chemical control?

4+9+2

Module-II(Marks-50)

4. Answer the following questions:

(a)Distinguish between pathogenecity and pathogenesis.(b)Define pandemic disease.(c)What is mycoprotein?(d)Name one biocontrol agent(e)What are anamorphic fungi?(f)What is biotroph?

(2+2+2+1+1+2)

5. (a) What is fruticose lichen? State the ecological and economic importance lichen (1+4)

Or, Sexual cycle differs from parasexual cycle justify 5

(b)Write notes on Koch's postulation 5

Or, discuss the role of quarantine in plant disease management. 5

6.(a)(i)Discuss in brief the sexual reproduction process in *Rhizopus*. 5

(ii)Characterizes the different types of mycorrhiza with example. 5

(iii)Give an outline of industrial production of ethanol. 5

Or,(i)Give a brief account of life cycle of *Synchytrium*. 5

(ii)Comment on cultivation and food value of *Pleurotus*. 5

(ii)Write notes on mycotoxin. 5

(b)Describe the symptoms, disease cycle and control measures of Black stem rust of wheat. Mention the name of pathogen for late blight disease of potato and brown spot of rice.

3+6+4+2

Or, Differentiate between prophylactic and therapeutic treatment of plant disease. Briefly discuss the techniques followed in control of plant disease. What is its advantage over chemical control?

4+9+2

DR.KANAILAL BHATTACHARYYA COLLEGE

Test examination-2016

Part-II (HONS) 3rd Paper

BOTANY

Module-V (Marks-50)

Time 4hr

F.M -100

1. Answer the following questions:

- (a) Name the pteridophyte used in agriculture and why? 2
- (b) Give the geological age and geographical distribution of *Rhynia* 2
- (c) Give the morphological nature of elaters in *Equisetum* 1
- (d) Mention any two fern characters of *Cycas* 2
- (e) Name the source plant of Canada balsam 1
- (f) Mention reconstructed fossil plant from India by Prof. Birbal Sahni and mention its age of occurrence. 2

2(a) Explain the morphological nature of rhizophore 5

Or, State the land adaptive features of *Rhynia*. Mention the fern characters of *Psilotum* (3+2)

(b) Discuss in brief the early events in relation to the colonization of land plants. 5

Or, Describe the phylogenetic importance of *Archaeopteris* 5

3(a) Define heterospory. Mention the binomial heterosporous ligulate pteridophyte from Eastern India. Discuss the phenomenon and origin and evolution of seed habit. How far has *Selaginella* reached the level of seed habit? 2+1+8+4

Or, Name the different organs of reconstructed plant *Calamites*. Give an illustration of its reproductive structures. What is incipient heterospory? 4+8+3

(b) Draw and describe the male fructifications of *Cycas* and *Gnetum*. Describe the angiospermic features of *Gnetum*. 5+5+5

Module-VI (Marks-50)

4. Answer the following questions briefly:

- (a) Name two metallophytes. 2
- (b) What is core habitat? 2

- (c) What is alpha-diversity 1
- (d) Distinguish between leaf trace and leaf gap 2
- (e) Define quiescent centre 2
- (f) What is callus pad? 1
5. (a) Describe the characteristics features of plant community 5
- Or, Explain phytoremediation with examples. 5
- (b) Discuss anatomical adaptations of xerophytes. 5
- Or, Describe different types of stomata in dicotyledonous plant 5
6. (a) What is sere? Describe the various serial stages of hydrosere. What are the differences between autogenic and allogenic successions? 2+10+3

Or

Enumerate the role of seed bank and cryopreservation in the conservation of plant diversity. Discuss the different levels of biodiversity. What are the hot spots? Name one hot-spot in India. 3+3+6+2+1

(b) Define stele. Describe the different types of stele found in plants with example. Comment on probable evolutionary sequences of plant steles. 2+10+3

Or, (i) Explain the principles governing the distribution of mechanical tissues in plants. 8

(ii) Describe the extrastelar secondary growth in plants with suitable diagrams. 7

DR.KANAILAL BHATTACHARYYA COLLEGE

• Test examination-2016

Part-II (HONS) Fourth Paper

BOTANY

T-2h

FM-50

1. Answer the following questions:

- | | |
|---|-----|
| (a) Define parietal placentations | 2 |
| (b) State any two importance of herbarium | 2 |
| (c) Write the scientific name of medicinal plant of Acanthaceae. Write the name of economically important plant of Lamiaceae. | 1+1 |
| (d) What is beta-Taxonomy? Define holotype. | 1+1 |
| (e) What do you mean by diadelphous stamen? | 1 |
| (f) Who is the father of taxonomy? | 1 |

2. Briefly answer the questions (Any two)

5X2

- | | |
|--|-----|
| (a) Describe different kind of aestivations found in angiosperm. | 5 |
| (b) What are the main identifying characters of Lamiaceae? What do you mean by artificial system of classifications? | 3+2 |
| (c) State the important roles of botanical garden. Write the full name of CNH. | 4+1 |
| (d) Cyathium inflorescence. | 5 |

3. Answer the followings

15X1

- | | |
|--|---------|
| (a) Give an outline of the system of classifications presented by Benthum and Hooker. States its two merits and demerits. Write the name of their book. What is valid publication? | 8+4+1+2 |
|--|---------|

Or

DR.KANAILAL BHATTACHARYYA COLLEGE

Mid-term-2017

Part-I (HONS)

Paper-1st & 2nd (Combined)

BOTANY

Time: 2Hr

F.M-50

1. Answer the following questions (any five):

1X5

(a) What is phycobilisome? (b) What is hologamy? (c) What is carageenan? (d) Name one coralline alga. (e) Name one Indian species of *Anthoceros*. (f) Define chemical fossils with example. (g) Distinguish between pollen grains and spore. (g) What is mycoprotein? (h) Distinguish between monocyclic and polycyclic disease.

2. Answer the followings (any three)

3X5

(a) Write down short note on bacterial endospores. (b) Write down brief note on quarantine in plant disease management. (c) Write a short note on disease triangle. (d) short note on vegetative propagation in bryophytes.

3. Answer any two questions from the following:

2X15

(a) Describe the nature and functions of glycocalyx. Describe the chemical structure of bacterial cell wall. Distinguish between gram positive and gram negative bacteria. 2+8+5

(b) Describe the ultra structure of cyanobacterial cell. Justify the remaining of blue green algae as cyanobacteria. What is the function of akinet? 8+5+2

(c) Describe the symptoms, disease cycle and control measure of late blight disease of potato. Name the causal organism. 4+6+4+1

(d) What is transformation? State the process with special emphasis on natural and induced competence and DNA uptake. Distinguish between flagella and pilli. 2+9+4

BOT/HONS/TE/17

DR.KANAILAL BHATTACHARYYA COLLEGE

Part-I (HONS) Test Exam-2017

Botany (First Paper)

Module-I (50)

F.M-100

Time-4hr

1. Answer the following question:

(a) What is tripartite mastigonemes? (b) What is the difference between raphe and Pseudoraphe?
(c) Name one potential algal genus used for β - carotene production. (d) What is Prion? (e) What
are actinobacteria? (f) Name one dextran producing bacterium (2+2+1+2+2+1)

2. (a) Write a short note on algal toxins. 5

Or, Write a note on auxospore formation in centric diatoms. 5

(b) Discuss in brief the stages of endospore formation and their function. 5

Or, Describe the mechanism of generalized transduction. 5

3. (a) (i) Discuss briefly the Frustule structure and auxospore formation in Pinnate diatoms with
suitable illustrations. 4+5

(ii) Comment on the evolution of sex in algae. 6

Or, What is isomorphic alternation of generation? Enumerate the life cycle pattern of
Ectocarpus with suitable diagrams. Mention the source and importance of algin. 3+8+4

(b) (i) Distinguish between the chemical nature of Gram positive and gram negative bacterial cell
wall. 10

(ii) Give a brief account of the structure of bacterial flagella. 5

Or, What is transformation? State the process with special emphasis on natural and induced
competence and DNA uptake. Distinguish between Flagella and Pilli. 2+9+4

Dr.KLBC

Module-II (50)

4. Answer the following question:

(a) What is holocarpic fungi? (b) What are an amorphic fungi? (c) What is 'Hartig-net'? (d) Why is *Puccinia graminis tritici* called macrocyclic and heterocious rust? (e) Distinguish between primary and secondary inoculum. (f) Name one polycyclic plant disease. 2+2+1+2+2+1

5. (a) Describe the specialized structures associated with lichen thallus. 5

Or, Write in brief the process of sexual degeneration in fungi. 5

(b) Define Pathotoxin. Describe the characteristic feature of Pathotoxin with example. 5

Or, Differentiate between acquired and induced systemic resistance in plants. 5

6. (a) (i) Describe in brief the sexual reproduction process in *Rhizopus*. 5

(ii) Characterize different types of mycorrhiza with examples. 5

(iii) Give an outline of industrial production of ethanol. 5

Or, (i) Briefly outline the industrial production of cheese. 5

(ii) Comment on Food value of *Pleurotus*. 5

(iii) Mention the fungal sources and uses of Tryptophan and riboflavin. 5

(b) Describe the symptoms, disease cycle and control measures of stem rot of jute. Name the causal organism. 4+6+4+1

Or, Define phytoalexin. Give an explanatory note on biochemical defense mechanism of plants. 3+12

BOT/HONS/TE/17

DR.KANAILAL BHATTACHARYYA COLLEGE

Part-I (HONS) Test Exam-2017

Botany (Second Paper)

Group-A (50)

F.M-50

Time: 2hr

1. Answer the following questions briefly:

(a) Mention the functional difference between amphithecium and endothecium. (b) What are epicranoid peristome teeth? (c) Name one Indian Bryologist. (d) Explain duripartic Preservation with example. (e) Name the index fossil of Indian Middle Gondwana. (f) State the chemical nature of sporopollenin.

2+2+1+2+1+2

2. Write short notes on the following:

(a) Important of bryophytes in pollution monitoring. (b) Spore dispersal method in Funaria. (c) Homologous theory of alternation of generation.

5+5+5

Or, Give an illustrated account of the morphology of the mature sporophytes of Anthoceros. Briefly describe the spore dispersal mechanism in Anthoceros. Add a note on its evolutionary significance.

8+4+3

3. Give an account of the principles of naming fossil plant with example. Discuss the conditions necessary for fossilization of plants.

7+8

Or, Distinguish between spores and pollen grains. Give an illustrated account of exine ornamentation patterns in spore and pollen grains with examples. Schematically represent NPC classification as proposed by Erdtman.

3+7+5

4. Write briefly on any two of the following:

5X2

(a) Embryogenesis in Capsella. (b) Double fertilization and its significance. (c) Events in relation to pollen germination and pollen tube growth. (d) Types of polyembryony and its causes.

Dr.KLBC

DR.KANAILAL BHATTACHARYYA COLLEGE

Mid-Term Practical Exam-2017

Part-I (HONS)

Paper-II Group- B

BOTANY

Time-4hr

Full Marks- 25

The figures in the margin indicate full marks

1. Workout the morphology of the vegetative and reproductive structures of the supplied specimen 'A'. Draw free hand sketches, label and describe the specimen. Make drawing prism sketches of the reproductive structure showing magnification. Name the genus with identifying characters. 1+6+2+1
2. Workout the morphology of supplied specimen 'B'. Describe with suitable labeled sketches. Measure any one of the reproductive structure. Name the genus with identifying characters. 1+4+4+1
3. Viva-voce. 5

2017

BOTANY-GENERAL-PRACTICAL

Third Paper

(Module-V)

Full marks-50

Time: 4 Hours

The figure in the margin indicate full marks

1 Make a microscopic slide preparation of specimen 'A' .Draw, label and describe it. Mention the indentifying character. Name the genus. Leave your preparation.

[Preparation 1, Drawing and labeling 3, Description 2, Indentifying characters 2, Name the genus 1] 9

2. Dissect the floral part of the specimen 'B'. Draw, label and describe the plant and floral parts. Give the floral formula and floral diagram. Mention the family of the specimen with indentifying characters. Leave the dissected floral parts for examination.

[Dissection 1,Drawing and labeling 3, Description 3 Floral formula 1, Floral diagram 1,Name of the family 1, Indentifying characters of the family 2] 12

3. Indentify the following specimen with reasons;

C, D, E, F, G, H, I. **2X7**

4. Submit Laboratory Records (Laboratory Note Book and Slide) and Field Records (Field Note Book and Herbarium Specimen). (3+2) + (2+3)

5. Viva-voce 5

DR.KANAILAL BHATTACHARYA COLLEGE

TEST -2018

Part-I (HONS)

Paper-I

BOTANY

Module -I

Time: 4 Hr

F.M - 100

1. Answer the following questions:

(a) What is Gaidukov phenomenon? (b) What is carageenan? Name its source. (c) Name one coralline algae. (d) Mention the use and sources of glutamic acid. (e) What is pseudomurine? (f) Name one Gram - positive bacterium possessing pili.

2+2+1+2+2+1

2. (a) Discuss the role of algae in the production of Phycocolloids 5

Or, Comment on the ultrastructure of algal plastids. 5

(b) Give an outline of industrial productions of streptomycin. 5

Or, Discuss in brief the modes of transmission and translocation of plant viruses 5

3(a) (i) Describe the lifecycle pattern of nannandrous species of *Oedogonium* with labelled sketches. (ii) Enumerate the isomorphic alteration of generation in algae with suitable example.

10+5

Or, Describe the ultrastructure of Cyanobacterial cell. Justify the remaining of blue green algae as Cyanobacteria. What is the function of akinete?

8+5+2

(b)(i) Discuss the role of transduction in genetic recombination in bacteria. 8

(ii) Write the characteristics features of Enterobacteria and Actinobacteria. Give one example of the said group. 5+2

Or, (i) compare the lytic and lysogenic cycles of viruses. 9

(ii) Comment on the structure of bacterial flagella with suitable diagrams. 6

Module - II

4. (a) What are Neurotroph and Biotroph? (b) What is meant by disease concept? (c) Mention one source of Mycoprotein? (d) What is phytoanticipin? Give one example. (e) What is populospore? (f) What are anamorphic fungi?

2+2+1+2+2+1

5. (a) What are different types of Lichen? Give example. 3+2

Or, Write short note on sexual degeneration of fungi. 5

(b) Discuss the role of quarantine in plant disease control. 5

Or Give an outline of post inflectional structural defence of plants. 5

6. (a) (i) Describe the sexual reproduction in *Ascobolus*. 7

(ii) Comment on hormonal regulation of sex in *Rhizopus*. Write a brief note on asexual reproduction of *Rhizopus* with suitable diagram. 4+4

DR.KANAILAL BHATTACHARYYA COLLEGE

TEST -2018

Part-I (HONS)

Paper-II

BOTANY

(Group- A)

F.M- 50

Time: 2Hr

1. Answer the following questions:

- Distinguish between perigynium and calyptra.
- What is stegocarpic moss?
- Name one Indian species of *Marchantia*.
- State the chemical nature of sporopollenin.
- What is megafossil?
- Name the index fossil of Indian Upper Gondwana.

2+2+1+2+2+1

2) Outline the Proskauer's classification (1957) of bryophytes upto class with salient features and example each. Describe the structure of sporophyte of *Funaria* with suitable diagram. Write characteristic features of Anthocerotopsida.

6+6+3

Or, Write short notes on following:

- Progressive theory of evolution of sporophyte. 5
- Role of Bryophytes in plant succession. 5
- Pteridophytic origin of Bryophytes. 5

3. Describe the different modes of preservation of fossil. Give an account of different types of sculpturing.

8+7

Or, Write short notes on following:

- NPC classification system. 5
- Aeropalynology. 5
- Importance of fossil study. 5

4. Write briefly on any two of the following:

- Stages of microsporogenesis. 5
- Apospory and Apogamy. 5
- Different types of endosperm development in angiosperms. 5
- Entry and discharge of pollen into ovule. 5

DR.KANAILAL BHATTACHARYYA COLLEGE

PRACTICAL TEST - 2018

Part-I (HONS)

Paper-II (Gr – B)

BOTANY

The figure in the margin indicate full marks

T – 2 Hr

F.M – 25

1. Workout the morphology of the vegetative reproductive structure of the supplied specimen "A". Draw freehand sketches, label and describe the specimen. Make drawing prism sketches of reproductive structure showing magnification. Name the genus with identifying characters.

1+1+1+1+1+1+1

2. Work out the morphology of the supplied specimen "B". Describe with suitable labelled sketches. Measure any one of the reproductive structures. Name the genus with identifying characters.

1+1+1+1+1+1

3. Identify the specimens "C", "D" & "E" with proper reason.

2X3

4. Viva – Voce

6

Dr. Kanailal Bhattacharyya College

Test Examination 2019

BOTANY-HONOURS

Fourth Paper

Group- A

Full marks- 50

Time 2h

1. Answer the following in few words:

- | | |
|---|---|
| (a) What do you mean by biosystematic phase of taxonomy? | 2 |
| b) What is omega taxonomy? | 2 |
| c) Define monophyletic group. | 2 |
| d) Mention the type of stamen found in Asteraceae. | 1 |
| e) Write the name of two families with bilabiate corolla. | 1 |
| f) What do you mean by bracketed key? | 2 |

2. Answer **any two** of the following:

- | | |
|--|---|
| a) Describe the structure of ovule. | 5 |
| b) Describe different types of gamopetalous irregular corolla with example. | 5 |
| c) Describe different types of placentation found in angiosperms. | 5 |
| d) Write down the different types of cymose inflorescence with suitable diagram. | 5 |

3. Answer **any two** of the following:

- | | |
|---|-------|
| a) Write down the role of phytochemistry in solving taxonomic problem. Describe the economic importance of Rubiaceae. Discuss the features of Palmae. | 5+4+6 |
| b) Describe the Cronquist's (1988) system of classification. State its merits and demerits. | 7+4+4 |
| c) Mention the diagnostic features of Malvaceae and Scrophulariaceae. Write down the advance features of Asteraceae. | 5+5+5 |
| d) Give answers of the following: | |
| i) Different type method. | |
| ii) Effective publication. | |
| iii) Role of Botanical gardens. | 5+5+5 |

DR.KANAILAL BHATTACHARYYA COLLEGE

Test Examination-2019

Part-III (HONS) Fifth Paper

Botany

Group – A

Time: 4Hrs

F.M - 100

1. Answer the following:

(a) Explain why the water potential of cell is usually negative? (b) Name the plant part from where Brassinosteroid was first identified (c) What do you mean by soil plant atmosphere continuum concept? (d) Comment on the dual activity of RUBISCO. (e) Write the structure of chlorophyll b (f) Mention the role of 'critical day length' in flowering.

2+2+2+2+1+1

2. Answer any two of the following:

5X2

(a) Describe in brief the mechanism of phloem loading and unloading. (b) Point out the amphibolic role of TCA cycle. (c) Describe the role of blue light in stomatal movement. (d) Mention the role of ethylene in fruit ripening.

3. Answer any two of the following:

(a) Crassulacean acid metabolism is an eco physiological adaptation of the desert plant – justify the statement with biochemical details. How do CAM plants differ from C4 plants?

10+5

(b) What is the difference between dormancy and quiescence? Discuss the different methods of breaking seed dormancy. Briefly describe the biochemical changes associated with the process of seed germination.

4+5+6

(c) Why oxidative pentose phosphate pathway is called a shunt pathway. Schematically describe the pathway giving structure of substrates and products and name the enzymes involved in each step. Mention the significance of this pathway.

2+10+3

(d) Write short notes on following:

5X3

(i) Write a note on GS/GOGAT cycle (ii) Role of phytochrome in flowering. (iii) Plant responses towards the salinity.

Group - B

4. Answer the following:

(a) What are the oligosaccharides? Give an example. (b) Why pH of 7 is considered as neutral pH? (c) What is proenzyme? (d) Name one sulphur containing amino acid. (e) What is buffer name two major buffer containing components. (f) Name two metalloenzymes.

2+2+2+1+1+2

5. Answer any two of the following:

(a) Define saturated and unsaturated fatty acid with examples and mention important biological functions of phospholipids.

3+2

(b) Explain the rigidity of the peptide bond. Explain the structure of the α – helix. How the helix structure is stabilized.

3+2

- (c) What is G – protein? Mention its role in signal transduction pathway. 2+3
(d) Give a comparative account of B and Z forms of DNA. 5

6. Answer any one of the following:

- (a)(i) Define symport and antiport with examples. Discuss between active and passive ion uptake mechanism in plants. 3+5
(ii) What is redox potential? Explain it with the help of electrochemical gradient. 2+3
(iii) "A Molecule of reduced NAD yields 2.5 molecule ATP while that of reduced FAD yields only 1.5 molecules of ATP" – Explain 2
(b) What do you mean by phosphorylation? Distinguish between oxidative phosphorylation and photophosphorylation with illustration. Describe in brief the mechanism of ATP synthesis in mitochondria in light of chemiosmotic model. 2+3+10

7. Mention the source plants, parts used and use of the following pharmacologically active constituents: 3X5

Vinblastin, Alonin, Digitoxin, Catechin and Quinine.

Or, Write short notes on

- (a) Protective action of flavonoids against pathogenic microbes and herbivores. (b) Organoleptic evaluation of drugs. (c) Classification of drugs on the basis of chemical constituents and therapeutic effects with example. 3X5

DR.KANAILAL BHATTACHARYYA COLLEGE

Test Examination-2019

Botany

Part-III (HONS) Sixth Paper

Module - XI

(Marks - 50)

Time-4hrs

Full Marks-100

1. Answer the following questions:

- | | |
|--|---|
| (a) What are monopolins? | 2 |
| (b) What is NOR? | 2 |
| (c) What is MPF? Mention its functions | 2 |
| (d) What is back cross? | 1 |
| (e) What is student's 't' test? Give formula | 2 |
| (f) Mention two types of DNA markers used in molecular breeding. | 1 |
2. How is the spindle apparatus formed during cell division? Illustrate the dynamics of chromosome movement during anaphase with reference to anaphase promoting complex (APC). Why are the chromosomal terminal dose not digested by exonuclease activity?

5+8+2

Or, Write short notes on the following

- | | |
|--|-----|
| (a) Structure and function of nuclear pore complex | 5X3 |
| (b) Organellar DNA | |
| (c) Ribosome biogenesis | |

3. Answer any two of the following:

- | | |
|---|-----|
| (a) Mention the use of DNA marker | 5 |
| (b) Explain how male sterility can be utilized in plant breeding | 5 |
| (c) Explain probability and enumerate the laws of probability with suitable example | 5 |
| (d) According to height, 200 jute plants can be grouped as follows: | 2+3 |

Frequency	Class value
15	60
25	62
65	64
50	66
40	70
5	76

Calculate the mean height and the standard deviation

4. With suitable flow charts illustrate the steps for anther culture and pollen culture techniques. Which one is more advantageous and why? Discuss the importance of haploid culture.

(4X2)+2+5

Or, Answer following:

5X3

- Essential components of plant tissue culture medium.
- Artificial seed production and its significance.
- Advancement in crop biotechnology.

Module – XII

(Marks - 50)

5. Answer the following:

(a) What meiotic configuration would you like in paracentric inversion? (b) Why are polyploids are frequently sterile? (c) What are Okazaki fragments? Why are such fragments formed? (d) What is FISH? (e) What is split gene? (f) Why replication is called semi conservative replication?

2+2+1+2+2+1

6. Discuss in brief any two of the following:

5X2

- Epistasis with suitable example.
- ABC model of flower development in *Arabidopsis*
- Wobble's Hypothesis
- Write down the process of PCR and its application.

7. Answer any two of the following:

(a) What do you mean by transition and transversion? Discuss the molecular mechanism of the following mutagens in causing mutation:

- 5 – Bu
- EMS
- Hydroxylamine
- UV rays.

3+12

(b) State the central dogma. Discuss the mechanism of transcription of RNA and its processing in eukaryotes.

2+8+5

(c) What is operon? Discuss the structure of *lac* operon and its control mechanisms.

2+3+10

(d) A cross is made between a heterozygote YDE/yde and a recessive yde/yde. Progenies were analysed.

Phenotype	Genotype	Number
1. Yellow/dry/elongated	YDE	358
2. Purple/jucy/round	yde	346
3. Yellow /dry/round	YDe	44
4. Purple/jucy/elongated	yDE	44
5. Yellow/jucy/round	Yde	104
6. Purple/dry/elongated	yDE	92
7. Yellow/jucy/elongated	YdE	8
8. Purple/dry/round	yDe	4
(i) Determine the gene order and map distance between the genes.		
(ii) Find out coefficient of co – incidence and interference.		(2+10)+(2+1)

DR.KANAILAL BHATTACHARYYA COLLEGE

PRACTICAL TEST - 2019

Part-III (GEN)

Paper-IV

Group - B

BOTANY

Time: 2^{1/2} Hr

F.M- 30

1. Prepare a thin layer of specimen A and stain it suitably. Draw, label and comment on the morphology of bacteria. (smear – 1, staining – 1, drawing and labeling – 2, Comment – 1) 5
2. Determine the goodness of fit of sample B by chi square analysis. (Determination of ratio- 1, calculations -5, Comment -2) 8
3. Demonstrate and write the working principle and uses of the instrument supplied to you. (Demonstration- 1, Working Principle-2, uses-1) 4
4. Identify the supplied plant specimens C and D mention their scientific name useful parts and uses. (Scientific name – 1, useful parts - ½, Uses- ½) 4
5. Submission (Laboratory Note book- 3, field records -1) 4
6. Viva-voice 5