This question paper contains **2** printed pages]

VH—18—2024

FACULTY OF SCIENCE

B.Sc. (First Year) (First Semester) EXAMINATION

NOVEMBER/DECEMBER, 2024

BIOTECHNOLOGY

Paper CCBI-3A

(Microbiology and Cell Biology)

Tuesday, 3-12-2024) **Time : 10.00 a.m. to 1.00 p.m.**

Time—Three Hours *Maximum Marks*—75

N.B. :— (*i*) Attempt *All* questions.

(*ii*) *All* questions carry equal marks.

(*iii*) Draw well labelled diagrams wherever necessary.

1. Describe classification of microorganisms along with criteria used in microbial taxonomy including moleculer approaches, microbial phylogeny and current classification. 15

Or

(*a*) Write in detail bacterial cell structure. 8

(*b*) Give difference between gram positive and gram negative cell walls. 7

2. Define generation time. Describe bacterial growth curve. 15

Or

(*a*) Write a note on synchronous culture. 8

(*b*) Describe the different factors affecting on growth of bacteria. 7

P.T.O.

3. Describe the structure of bacterial cell wall and plasma membrane. 15

Or

(*a*) Explain Stanley Miller experiment. 8

(*b*) What is cell theory ? Explain the diversity of cell size and shape. 7

4. Describe cell cycle along with meiosis. 15

Or

(*a*) Write a note on diffusion. 8

(*b*) How Na/K ion channel works ? 7

5. Write short notes on (any *three*) : 3×5=15

(*a*) Mitosis

(*b*) Eukaryotic cell structure

(*c*) Continuous culture

(*d*) History of microbiology

(*e*) Measurement of bacterial growth.

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VH—12—2024

FACULTY OF SCIENCE

B.Sc. (First Semester) EXAMINATION

NOVEMBER/DECEMBER, 2024

(New Course)

BIOINFORMATICS

(Basics of Biological Science)

(Saturday, 30-11-2024) **Time : 10.00 a.m. to 1.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Draw neat and well labelled diagram.

(*iii*) *All* questions carry equal marks.

1. Define Bacteria. Explain in detail types of bacteria on different basis. 15

Or

(*a*) Draw well labelled bacterial cell. Write role of each cell organelle. 8

(*b*) Briefly describe bacterial nutrition. 7

2. Explain fungi morphology and its general characteristics. 15

Or

(*a*) Explain Yeast in detail. 8

(*b*) Explain Agaricus in detail. 7

P.T.O.

3. Define virus. Explain virus structure with example. 15

Or

(*a*) Describe viral replication process. 8

(*b*) Write a note on classification of virus on different basis. 7

4. Define Blue Green Algae, and explain its cultivation. 15

Or

(*a*) What is Lichen ? 8

(*b*) Give an account on Spirogyra. 7

5. Write short notes on (any *three*) : 15

(*a*) Factors affecting bacterial growth

(*b*) Hyphae

(*c*) Bacteriophage

(*d*) Fungal Dormancy

(*e*) Spirulina.

This question paper contains **3** printed pages]

VH—01—2024

FACULTY OF SCIENCE

B.Sc. (First Year) (First Semester) EXAMINATION

NOVEMBER/DECEMBER, 2024

(New Course)

BIO-INFORMATICS

Paper-AECBI-1A

(Functional English)

(Tuesday, 26-11-2024) **Time : 10.00 a.m. to 1.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) *All* questions carry equal marks.

1. What are Free and Bound Morphemes ? Explain with examples. 15

Or

(A) Draw morphological structure of the following words : 8

1. Unapproved
2. Faithfulness
3. Notebooks
4. Confidently.

(B) Define Acronyms and Abbreviation with examples. 7

P.T.O.

2. Analyze various types and functions of Phrases. 15

Or

(A) Open word classes 8

(B) Close word classes. 7

3. What is Seminar ? How to give an effective Seminar ? 15

Or

(A) Article in English Language. 8

(B) Do as directed : 7

(*a*) Please, give some papers for rough work. (Change the Voice)

(*b*) The audience were amused by the monkey. (Change the Voice)

(*c*) The Sanyasi had given him three boons. (Change the Voice)

(*d*) Sajeth said, "Soniya, you have to work hard." (Change the Narration)

(*e*) Ranjish says, "I was working yesterday. (Change the Narration)

(*f*) There was seven girls in the classroom. (Spot the Error and Correct the Sentence)

(*g*) They cooked the dinner themself. (Spot the Error and Correct the Sentence)

4. Explain various steps to be used while drafting a Scientific Report. 15

Or

(A) Prepare your Resume for the post of 'Bio-informatics engineer'. 8

(B) Write an essay on the E-Waste management. 7

5. Write short notes on (any *three*) : 15

(A) Clipping and Blending

(B) Importance of Role-Playing

(C) Group Coordination

(D) Subject-Verb Agreement

(E) Characteristics of Formal Letter.

This question paper contains **2** printed pages]

VH—06—2024

FACULTY OF SCIENCE

B.Sc. (First Year) (First Semester) EXAMINATION

NOVEMBER/DECEMBER, 2024

(new)

BIOINFORMATICS

(Introduction to Bioinformatics)

(Thursday, 28-11-2024) **Time : 10.00 a.m. to 1.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) *All* questions carry equal marks.

1. Define Bioinformatics ? Explain its applications and write the scope of bioinformatics in detail. 15

Or

(*a*) Explain in detail about the Human Genome Project. 8

(*b*) What is protein sequence database ? Write its working and steps. 7

2. Explain in detail Biological Datamining and its classifications. 15

Or

(*a*) Write a note on uniprot, swissprot. 8

(*b*) Describe Pubmed, PMC and ploss. 7

P.T.O.

3. Explain in detail sequence and molecular file formats and its mode of use. 15

Or

(*a*) Explain and discuss Transcriptomics and Metabolomics. 8

(*b*) Describe in detail Gen Bank and DDBJ. 7

4. Explain in detail Databases and its types with examples. 15

Or

(*a*) What is Data mining and its functionalities. 8

(*b*) Explain what is central omega of molecular Biology. 7

5. Write short notes on (any *three*) : 3×5=15

(*a*) Rational Drug Designing

(*b*) Bibliographic database and its types

(*c*) Transcriptomics

(*d*) Ploss, PMC

(*e*) Structural Database and its types.