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PH—12—2024

FACULTY OF SCIENCE

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

MARCH/APRIL, 2024

(New Course)

BIOINFORMATICS

(Basics of Biological Sciences)

(Saturday, 06-04-2024) **Time : 10.00 a.m. to 1.00 p.m.**

Time—Three Hours *Maximum Marks*—75

Note :— (*i*) *All* questions are compulsory.

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

1. Describe in detail ultrastructure of bacterial cell. 15

Or

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

(*b*) Describe structure of bacterial flagella. 7

2. Write in detail reproduction in fungi. 15

Or

(*a*) Describe structure and characteristics of fungi. 8

(*b*) Write a note on structure of Hyphae. 7

P.T.O.

3. Write a note on classification and nomenclature of viruses. 15

Or

(*a*) Describe in detail replication of viruses. 8

(*b*) Write a note on morphology of viruses. 7

4. Write in detail cultivation and economic importance of Algae. 15

Or

(*a*) Write a note on Spirogyra and Spirulina. 8

(*b*) What are lichens ? Write a note on its types or forms. 7

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

(*a*) Bacterial growth curve

(*b*) Bacterial endospore

(*c*) Agaricus

(*d*) Virus cell interaction

(*e*) Chlorella.

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PH—01—2024

FACULTY OF SCIENCE

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

MARCH/APRIL, 2024

(New Course)

BIOINFORMATICS

Paper AECBI-1A

(Functional English)

(Tuesday, 2-04-2024) **Time : 10.00 a.m. to 1.00 p.m.**

Time—Three Hours *Maximum Marks*—75

Note :— (*i*) *All* questions are compulsory.

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

1. Analyze different types of Word Formation Processes. 15

Or

(*a*) Draw morphological structure of the following words : 8

(1) Disinterested

(2) Vegetables

(3) Morphologically

(4) Informational

(*b*) What are bound morphemes ? 7

P.T.O.

2. Explain open and close word classes in detail. 15

Or

(*a*) Explain functions of Verb phrase. 8

(*b*) Explain functions of Adjective phrase. 7

3. What is group discussion ? Evaluate the process of group discussion. 15

Or

(*a*) Discuss major rules for subject-verb agreement. 8

(*b*) Do as directed : 7

(*i*) "We were playing basketball", Somu told Ramu.

(Change the narration)

(*ii*) Captain said to us, "Don't lose your position."

(Change the narration)

(*iii*) "What message have you told to them ?" the teacher said to us.

(Change the narration)

(*iv*) The woodcutter cut down the tree. (Change the voice)

(*v*) The book should have been studied by you. (Change the voice)

(*vi*) Can you send it to Sajeth and I ?

(Spot the error and correct the sentence)

(*vii*) The woman which works here is from Japan.

(Spot the error and correct the sentence)

4. What is business report ? Discuss the elements of business report. 15

Or

(*a*) Write an application for the post of 'Bioinformatics Engineer' to 'The Manager, stratton solutions, Pune-01 8

(*b*) Write an essay on the 'Future of Bioinformatics'. 7

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

(*a*) Bound morpheme

(*b*) Importance of seminar

(*c*) Demonstratives in English

(*d*) Characteristics of informal letters

(*e*) Steps in drafting a Resume.

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PH—06—2024

FACULTY OF SCIENCE

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

MARCH/APRIL, 2024

(New Pattern)

BIOINFORMATICS

Paper CCBI-1A

(Introduction to Bioinformatics)

(Thursday, 4-4-2024) **Time : 10.00 a.m. to 1.00 p.m.**

Time—Three Hours *Maximum Marks*—75

Note :— (*i*) *All* questions are compulsory.

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

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

1. What are biological databases ? Discuss in detail about their types with examples. 15

Or

(*a*) Discuss about bibliographic databases. 8

(*b*) What are search engines ? 7

P.T.O.

2. Describe in detail about human genome project. 15

Or

(*a*) What is central dogma of Molecular biology. 8

(*b*) Describe the data mining process. 7

3. Elaborate the role of bioinformatics in business. 15

Or

(*a*) What are the applications of bioinformatics ? 8

(*b*) What are sequence and molecular file formats ? 7

4. Describe about advance fields of bioinformatics. 15

Or

(*a*) Write down the history of bioinformatics. 8

(*b*) Discuss about biological search engines. 7

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

(*a*) Scop of bioinformatics

(*b*) Relational databases

(*c*) Internet

(*d*) Applications of data mining

(*e*) PubChem.

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

PH—18—2024

FACULTY OF SCIENCE

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

MARCH/APRIL, 2024

(New Pattern)

BIOINFORMATICS

(Microbiology and Cell Biology)

(Wednesday, 10-04-2024) **Time : 10.00 a.m. to 1.00 p.m.**

Time—Three Hours *Maximum Marks*—75

Note :— (*i*) Attempt *All* questions.

(*ii*) Each question carries equal marks.

(*iii*) Draw diagram wherever necessary.

1. Describe in detail classification of micro-organisms and explain in detail microbial taxonomy. 15

Or

(*a*) Explain in detail structure of bacterial cell. 7

(*b*) Write down the difference between gram positive and gram negative cell wall. 8

P.T.O.

2. Describe in detail microbial growth, growth curve and generation time. 15

Or

(*a*) Explain in detail batch and continuous culture. 7

(*b*) Describe in detail methods of isolation, purification and preservation of pure culture. 8

3. Describe in detail prokaryotic cell structure and organization. 15

Or

(*a*) Explain in detail structure of prokaryotic cell wall and its functions. 7

(*b*) Explain in detail cell theory and explain Stanley Miller experiment. 8

4. Describe in detail transport across cell membrane. 15

Or

(*a*) Explain in detail active transport with Na/K ion channel. 7

(*b*) Explain in detail cell cycle. Define Mitosis. 8

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

(*a*) Gram positive cell wall

(*b*) Factors affecting microbial growth

(*c*) Membrane proteins

(*d*) Simple diffusion

(*e*) Growth curve.