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NH—15—2023

FACULTY OF SCIENCE

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

NOVEMBER/DECEMBER, 2023

(New Pattern)

BIOINFORMATICS

(Basic of Genetics)

(Tuesday, 5-12-2023)

Time : 10.00 a.m. to 1.00 p.m.

Time—Three Hours

Maximum Marks—75

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

(ii) Draw neat and well labelled diagrams if necessary.

1. Describe in detail Mendelian laws of inheritance with examples. 15

Or

(a) Explain test cross and back cross and give example for each. 8

(b) Describe multiple alleles and give examples. 7

2. Describe any two sex linked genetic diseases. 15

Or

(a) Explain *anomalies* in sex chromosomes. 8

(b) Write about anomalies in autosomes. 7

3. Describe in detail the process of bacterial conjugation and write its use in genetic mapping. 15

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Or

- (a) Explain the bacterial transformation process. 8
- (b) Explain generalized and abortive transduction. 7
4. Describe in detail types of mutation. 15
- Or
- (a) Write about types of mutagens. 8
- (b) Write advantages of induced mutation in plants and animals for economical benefit of man. 7
5. Write short notes on (any *three*) : 3×5=15
- (i) Gene pool
- (ii) Hardy-Weinberg equilibrium
- (iii) Cytological inheritance
- (iv) Down syndrome
- (v) Parthenocarpy.

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NH—09—2023

FACULTY OF SCIENCE

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

NOVEMBER/DECEMBER, 2023

(New Course)

BIOINFORMATICS

(Basics of Biochemistry)

(Saturday, 2-12-2023)

Time : 10.00 a.m. to 1.00 p.m.

Time—Three Hours

Maximum Marks—75

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

(ii) All questions carry equal marks.

1. Describe in detail classification of polysaccharides with example. 15

Or

(a) Explain lipoprotein. 8

(b) Explain biological role of lipids. 7

2. Discuss classification of amino acids on the basis of R-side group. 15

Or

(a) Explain types of peptides. 8

(b) Explain types and role of enzymes. 7

3. Describe in detail structural levels of protein. 15

Or

(a) Explain properties of amino acids. 8

(b) Discuss classification of enzymes. 7

P.T.O.

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4. Discuss in detail structures of nucleic acids. 15

Or

(a) Explain types of RNA. 8

(b) Explain biological role of nucleic acids. 7

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

(a) Concept of pH and Pk

(b) Biological role of carbohydrates

(c) Insulin

(d) Molecular interactions

(e) Forms of DNA.

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NH—04—2023

FACULTY OF SCIENCE

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

NOVEMBER/DECEMBER, 2023

(New Pattern)

BIOINFORMATICS

(Business Communication)

(Thursday, 30-11-2023)

Time : 10.00 a.m. to 1.00 p.m.

Time—Three Hours

Maximum Marks—75

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

(ii) Draw neat and well labelled diagrams if necessary.

1. Write a descriptive passage about your favourite person. 15

Or

(a) Write a short descriptive passage about your favourite tourist spot. 8

(b) How to describe objects or things ? Explain with the help of example. 7

2. Explain *ten* rules of writing spellings of words correctly. 15

Or

(a) Write one word substitution for the following phrases : 8

(i) The sound of ducks.

(ii) The sound of birds.

P.T.O.

- (iii) Safe to drink.
- (iv) A strong and fast moving stream of water.
- (v) A large number of fish swimming together.
- (vi) One who is recovering health after illness.
- (vii) A person who is controlled by wife.
- (viii) Someone who walks in sleep.

(b) Write antonyms of the following words :

7

- (i) Begin
- (ii) Bitter
- (iii) Cheap
- (iv) East
- (v) Immense
- (vi) Real
- (vii) Zenith.

3. Write a story and its moral based on the following structure. Give suitable title to the story : 15

Hare — friend of tortoise — challenge — race — proud — nap — tortoise kept ongoing — hare woke up — tortoise won.

Or

(a) Explain basic approaches for understanding English. 8

(b) Write tricks for rearranging jumbled parts of sentences. 7

4. How to write introduction, materials and methods and results section of a research paper ? 15

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Or

- (a) Write a sample E-mail to the officer of your municipal corporation complaining about poor quality of drinking water in your colony. 8
- (b) Write an essay on 'Health benefits of exercise'. 7
5. Write short notes on (any *three*) : 3×5=15
- (i) Meeting agenda
- (ii) Meeting minutes
- (iii) Notice writing
- (iv) Expression of opinions
- (v) Cloze test.

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