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GJ—07—2023

FACULTY OF SCIENCE

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

APRIL/MAY, 2023

(New Course)

BIOINFORMATICS

(Basics of Immunology)

(Thursday, 20-04-2023) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

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

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

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

1. Write in detail about types of immunity. 15

Or

(*a*) Describe structure of B cell in detail. 8

(*b*) Give an account on natural killer cells. 7

2. Write in detail about organs of immune system. 15

Or

(*a*) Describe antigen-antibody reaction in detail. 8

(*b*) Add an account on compliment fixation. 7

3. Write in detail about MHC I and MHC II complex. 15

Or

(*a*) Write in brief about secondary immunodeficiency. 8

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

4. Write about primary immune response in detail. 15

Or

(*a*) Describe in detail about graft rejection. 8

(*b*) What is cellular immune response ? 7

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

(*a*) Infection

(*b*) Stem cells

(*c*) Microphages

(*d*) Humoral immune response

(*e*) Antibody.

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GJ—14—2023

FACULTY OF SCIENCE

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

APRIL/MAY, 2023

(New Course)

BIOINFORMATICS

Paper–CCBI-2D

(Database Management System)

(Monday, 24-04-2023) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

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

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

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

1. Explain oracle function in detail. 15

Or

(*a*) Explain difference among HDB, NDB and RDB. 8

(*b*) Describe data constraints. 7

2. Explain in detail DML and DDL commands with suitable example. 15

Or

(*a*) Explain PL/SQL processing block. 8

(*b*) Explain in detail group by query. 7

P.T.O.

3. Explain in detail joins with example. 15

Or

(*a*) What is cursar ? Explain with example. 8

(*b*) Explain Codd's rule. 7

4. Explain in detail PL/SQL with examples. 15

Or

(*a*) Explain concept of domain tuples. 8

(*b*) Explain computation on table. 7

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

(*a*) Dual table

(*b*) Alter table

(*c*) Sys-date function

(*d*) Viewing command with example

(*e*) Create table and insert table.

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GJ—21—2023

FACULTY OF SCIENCE

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

APRIL/MAY, 2023

(New Course)

BIOINFORMATICS

(Programming in Perl)

(Wednesday, 26-04-2023) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

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

(*ii*) All questions carry equal marks.

(*iii*) Solve questions with examples.

1. What is Perl ? Write features and benefits of perl. Add a note on Perl installation. 15

Or

(*a*) What are individual approaches to programming ? 8

(*b*) What is String ? Write a Perl program to store DNA sequence. 7

2. What are basic operators and used in Perl ? 15

Or

(*a*) What is Concatination ? Write a program to concatinate two DNA strings. 8

(*b*) What is array ? Add a note on array operations. 7

3. What is file handling ? Write a program to demonstrate file handling. 15

Or

(*a*) What is If-else ? Write a program to show the use of If-else. 8

(*b*) What is do while loop ? Explain with an example. 7

4. Write in detail about IUB/IUPAC codes for nucleic acids and amino acids. 15

Or

(*a*) What are hashesh in Perl ? 8

(*b*) What are Subroutines ? Explain with an example. 7

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

(*a*) For loop

(*b*) Pattern matching

(*c*) FASTA format

(*d*) Python

(*e*) Continue statement.