

B.Sc. BIOTECHNOLOGY
SEMESTER-V
Computer Application & Bioinformatics
BBT-501

Duration: 3 Hrs.

Marks: 70

PART : A (OBJECTIVE) = 20
PART : B (DESCRIPTIVE) = 50

[PART-B : Descriptive]

Duration: 2 Hrs. 40 Mins.

Marks: 50

[Answer question no. One (1) & any four (4) from the rest]

1. Define system and application software. Describe the organization of different components of a digital computer with a schematic diagram. 2+8=10
2. What do you mean by main memory and secondary memory in a computer? Convert the following binary number to decimal and decimal number to binary number: 5+5=10
(a). 110101 (b). 432
3. What is meant by editing a document in MS-Word? What are the differences between editing and formatting a document? Write a note on headers and footers options. 2+5+3=10
4. *Answer the following:* 2+3+5=10
 - (a). Define nucleotide
 - (b). Draw the phosphodiester bond of a deoxyribonucleic acids
 - (c). Explain super secondary structure of a protein? Give example.
5. Define sequence alignment? How one can calculate the score, identity percentage and similarity percentage in a pair wise sequence alignment event. Explain with examples. 2+8=10
6. What do you mean by biological databases? Explain different types of biological databases with examples. 2+8=10
7. What kinds of data are stored in 'pfam' and 'Prosite' databases? What are the file types in 'Prosite' database? Write down the applications of 'Prosite' database. 2+3+5=10
8. *Write short notes on the following:* 5+5=10
 - (a). File formats in bioinformatics
 - (b). Applications of bioinformatics in Genome biology

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[PART-A : Objective]

Choose the correct answer from the following :

1X20=20

1. Supercomputers are primarily useful for
 - a. Input-output intensive processing
 - b. Mathematical intensive scientific applications
 - c. Data retrieval operations
 - d. None of these
2. Which of the following holds the ROM, CPU, RAM and expansion cards?
 - a. Hard disk
 - b. Floppy disk
 - c. Mother board
 - d. None
3. Add, subtract, divide, multiply and logic operations are performed by
 - a. Registers
 - b. Control unit
 - c. ALU
 - d. None
4. In MS-Word, a document can be zoomed maximum upto
 - a. 100%
 - b. 150%
 - c. 200%
 - d. 500%
5. Word text can be made italic by
 - a. Ctrl+I
 - b. Ctrl+B
 - c. Ctrl+U
 - d. None
6. In the print preview, the word document can be edited in
 - a. Normal view
 - b. Web layout view
 - c. Outline view
 - d. All
7. In Excel the intersection of a row and column is called
 - a. Square
 - b. Cell
 - c. Cubicle
 - d. Worksheet
8. The combination of the column letter and row number for a cell in an Excel worksheet is called a
 - a. Cell cross
 - b. Cell identification number
 - c. Cell reference
 - d. Cell identity
9. In MS-Excel, formulas are made up of
 - a. Arithmetic operators such as =+- and other functions
 - b. Only arithmetic operators
 - c. Only functions
 - d. None
10. The default page orientation in Excel is
 - a. Landscape
 - b. Portrait
 - c. Horizontal
 - d. None
11. Which of the following menu has the background?
 - a. Format
 - b. View
 - c. Insert
 - d. Slide show
12. Which extension is given to PowerPoint document by default?
 - a. .EXT
 - b. .COM
 - c. .PPT
 - d. None
13. Which of the following is not a hydrophobic, aromatic amino acid?
 - a. Tyr
 - b. Cys
 - c. Trp
 - d. Phe

UNIVERSITY OF SCIENCE & TECHNOLOGY, MEGHALAYA



PART (A) : OBJECTIVE

Duration : 20 Minutes

Serial no. of the
main Answer sheet

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14. The torsion angle present in C_α-C bond in a polypeptide is known as
- Psi
 - Phi
 - Both a & b
 - None
15. Which of the following is not a non covalent interaction in proteins?
- Electrostatic forces
 - Hydrogen bonds
 - Hydrophobic forces
 - Disulfide bonds
16. Which of the following database is used for biochemical pathway analysis?
- KEGG
 - EMBL
 - NCBI
 - PDB
17. BLASTx program is used for
- Translate protein sequence
 - Translate DNA database
 - Translate input sequence
 - None of these
18. SCOP is
- It is primary database
 - It is nucleotide sequence database
 - SCOP database is a hierarchical classification of protein 2D domain structures
 - Structural database, which identify structural and evolutionary relationships
19. PDB is
- Primary database for macromolecules
 - Can be determined by gel electrophoresis
 - Composite database
 - Database for three dimensional structure of biological macromolecule
20. Which is data retrieving tool?
- ENTREZ
 - EMBL
 - PHD
 - All

Course :

Semester : Roll No :

Enrollment No : Course code :

Course Title :

Session : 2017-18 Date :

Instructions / Guidelines

- The paper contains twenty (20) / ten (10) questions.
- Students shall tick (✓) the correct answer.
- No marks shall be given for overwrite / erasing.
- Students have to submit the Objective Part (Part-A) to the invigilator just after completion of the allotted time from the starting of examination.

Full Marks	Marks Obtained
20	

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Scrutinizer's Signature

Examiner's Signature

Invigilator's Signature