6 SEM TDC BOT M 4

2 0 1 7

(May)

BOTANY

(Major)

Course : 604

(Biophysics and Bioinformatics)

Full Marks : 48

Pass Marks : 19/14

Time : 2 hours

*The figures in the margin indicate full marks
for the questions*

1. (a) Choose the correct answer of the following :   1×3=3

    (i) HTML stands for

        1. High-text Markup Language

        2. Higher Text Markup Language

        3. Hypotext Markup Language

        4. Hypertext Markup Language

(2)

(ii) BLAST stands for

1. Basic Local Alignment Search Tool

2. Basic Local Alignment Search Travel

3. Basic Legal Alignment Search Tool

4. None of the above

(iii) Which of the following is not a high energy compound?

1. Glucose 1-phosphate

2. $ATP \rightarrow ADP + Pi$

3. Cyclic AMP

4. All of the above

(b) Fill in the blanks : $1 \times 2 = 2$

(i) The redox potential is a measure in _____.

(ii) pH is commonly expressed as _____.

(c) Write short accounts on the following : $3 \times 3 = 9$

(i) Genomics and proteomics

(ii) Local and multiple sequence alignment

(iii) Redox potential

(3)

2. Define bioinformatics. Write elaborately on the scope and application of bioinformatics. $1+5+5=11$

Or

What is biological database? Write about primary and secondary databases in bioinformatics and essential aspects of primary and secondary database. $1+7+3=11$

3. Write the definition and applications of biophysics. What is the scope of biophysics? How is biophysics essential in advancement of biology? $1+4+2+4=11$

Or

Give precise notes on first and second law of thermodynamics. Mention the significance of Gibbs free energy. $4+4+3=11$

4. Write short accounts on any *three* of the following : $4 \times 3 = 12$

(a) Data mining tool ENTREZE

(b) FASTA

(c) NCBI and Gene Bank

(d) Nuclear Magnetic Resonance (NMR) and its principle and uses

(e) Ultrasound and its principle and uses

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