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SEAT No. _____

No. of Printed Pages : 02

SARDAR PATEL UNIVERSITY EXAMINATION

DATE – 22/11/19 DAY- Friday TIME 02:00 TO 05:00 pm

Course- US03CBNF21 SUBJECT: BIOINFORMATICS

CLASS- S.Y.B.Sc III Sem TITLE---BASICS IN BIOINFORMATICS

TOTAL MARKS: 70

Q1- Select the correct from the following Multiple Choice: [1 X 10] [10]

- (i) **PDB is.**
a) Primary database for nucleotides b) can be determined by gel electrophoresis
c) composite database
d) database for three dimensional structure of biological macromolecule
- (ii) **The first bioinformatics database was created by**
a) Richard Durbin b) Margret Dayhoff
c) Michael j. Dunnd) Pearson
- (iii) **The identification of drugs through genomic study**
a) Genomics b) Cheminformatics
c) Pharmagenomicsd) Transcriptomics
- (iv) **Which of the following is a nucleotide sequence databank**
a) EMBLb) SWISS PROTC) SCOPd) PROSITE
- (v) **Entrez, a life science search engine used to search across databases is maintained by**
_____.
a) SWISS-PROT b) EMBL c) DDBJ d) NCBI
- (vi) **Disease database include:**
a) PDB b) MEDLINE c) OMIM d) Genbank
- (vii) **Database storing information about references and abstracts on life sciences and biomedical research.**
a) Pubmed b) Entrez c) PMC d) OMIM
- (viii) **Actual equipment of computer system that can be touched are**
a) hardware b) software c) applications d) bugs
- (ix) **Devices that accepts data from outside computer and transfer into CPU are called**
a) input devices c) digital devices
b) analogue devices d) truth table peripherals
- (x) **The value of radix in binary number system is _____**
A. 2 B. 8 C. 10 D. 1

Q2 Answer the following in brief (any ten) [2X10]

- (i) Differentiate wet lab and dry lab.
(ii) Explain PubMed and PubMed central database.
(iii) Expand for following Abbreviation: NCBI, SCOP, DDBJ, PDB.
(iv) Discuss important features of FASTA format.
(v) Explain about Instruction execution cycle.

(1)

(P.T:0)

- (vi) Differentiate primary database and secondary database.
- (vii) Give 4 important softwares of Bioinformatics.
- (viii) Name any four databases that contain information about sequence.
- (ix) How freeware differ from shareware software.
- (x) Convert the binary equivalent 10101 to its decimal equivalent.
- (xi) What are search engine? Give examples.
- (xii) Diagrammatically explain CPU organization.

LONG QUESTIONS

- Q3 Define Bioinformatics? Discuss its different field, scope and limitation. (10)
- OR
- Q3 (i) Explain data mining and its importance. (05)
(ii) What are sequence format? Give two examples. (05)
- Q4 Explain Database, its types and importance with an example. (10)
- OR
- Q4 Write a note on following: EMBL, Swiss Prot, Genbank. (3+3+4)
- Q5(a) Explain about structural classification of database. (05)
Q5(b) Discuss algorithm and its importance. (05)
- OR
- Q5 Discuss in detail about important features and databases of NCBI. (10)
- Q6 Discuss different types of number system. Explain with an example how addition and subtraction is calculated in binary number system. (10)
- OR
- Q6 Solve the following conversions: (10)
- i) $(724)_8 = (?)_{10}$
 - ii) $(ABC)_{16} = (?)_{10}$
 - iii) $(10AF)_{16} = (?)_2$
 - iv) $(11101010)_2 = (?)_{16}$
 - v) $(A2DE)_{16} = (?)_8$

— X —
(2)