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Name.....

Reg. No.....

THIRD SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2014

(UG-CCSS)

Zoology—Core Course

ZO 3B 05—GENERAL INFORMATICS AND BIOINFORMATICS

(2009–2012 Admissions)

Three Hours

Maximum : 30 Weightage

Answers may be written either in English or in Malayalam.

Give illustrations wherever necessary.

Answer all twelve questions. Each question carries $\frac{1}{4}$ weightage :

Objective type questions :

1 The expansion of 'NCBI' is :

- (a) National Centre for Biotechnology Information.
- (b) National Centre for Bioinformatics.
- (c) National Codes for Bioinformatics.
- (d) Nodal Centre for Bioinformatics in India.

2 Which among the following is used to specify the type of site and the address of the website including geographic location ?

- (a) html.
- (b) http.
- (c) URL.
- (d) CLUSTALW.

3 Identify the sequence alignment software :

- (a) MS-DOS.
- (b) BLAST.
- (c) Microarray.
- (d) DDBJ.

4 Labelled antibodies are used as probes in :

- (a) Proteomics.
- (b) MSA.
- (c) PCR.
- (d) DNA sequencing.

Name the following :—

- 5 The first electronic computer.
- 6 The person who initiated the free software movement.
- 7 The computer network that connects all Indian State capitals and district headquarters.
- 8 The person credited with the initiation of bioinformatics.

Turn over

C. Fill in the blanks :

- 9 KEGG stands for _____.
- 10 PDB is a database for _____.
- 11 The browser software maintained by Microsoft is _____.
- 12 The Smith-Waterman method is used in _____.

(12 × ¼ = 3 weightage)

II. Short Answer questions. Answer *all* nine questions :

- 13 What is the role of a DSL ?
- 14 What is a cyber crime ?
- 15 What is a WAN ?
- 16 The Nilambur teak of Kerala recently got a 'GI' stamp. What does it mean ?
- 17 What is INFLIBNET ?
- 18 Define Hypertext.
- 19 Write a brief note on ARPANET.
- 20 Write a short note on GenBank.
- 21 What is a query sequence ?

(9 × 1 = 9 weightage)

III. Short Answer questions. Answer any *five* questions :

- 22 Give a brief description of Web page and www.
- 23 Distinguish between Patent and Copyright.
- 24 What are the dangers of "digital divide" ?
- 25 What are the advantages of owning a patent ?
- 26 In what ways can IT improve health care ?
- 27 Give a brief description of the uses of metabolomic data.
- 28 Expand and write short notes on the following : (a) EMBL ; (b) DDBJ.

(5 × 2 = 10 weightage)

IV. Essay questions. Answer any *two* questions :

- 29 Choose any four fields in which IT has exerted a profound influence and give a detailed description of how it has done so.
- 30 Identify the threats faced by the IT industry and discuss how they can be countered.
- 31 Discuss in detail any three popular bioinformatics databases dealing with three different categories of data.

(2 × 4 = 8 weightage)