

**15U617**

(Pages: 2)

Name: .....

Reg. No.....

**SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, MARCH 2018**  
(CUCBCSS-UG)  
**CC15U ZO6 B12 - MOLECULAR BIOLOGY AND BIOINFORMATICS**  
Zoology - Core Course  
(2015 Admission)

Time: Three Hours

Maximum: 80 Marks

**A. Answer all questions.**

1. Mention the stop codons in the genetic code
2. Name the DNA polymerase that synthesizes DNA from RNA templates
3. Hershey and Chase labelled the protein coat of phage T<sub>2</sub> using -----
4. The coding sequences present in hnRNAs are called -----
5. RNA enzymes are known as -----
6. Discovery and retrieving of required data from different databases is known as -----
7. Who is the person credited with the initiation of bioinformatics.
8. ....is a data base of protein families and domains which is maintained at the EMBL.
9. General purpose multiple sequence alignment programme for DNA or protein is.....
10. The core principle behind microarray is-----

**(10 x 1 = 10 Marks)**

**B. Answer any *ten* questions.**

11. Explain the modern concept of genes.
12. Differentiate between pseudogenes and cryptic genes
13. Explain wobble hypothesis
14. What are jumping genes?
15. Explain c-value paradox
16. What is satellite DNA?
17. Define proteomics.
18. Enumerate any four uses of Ecocyc.
19. Expand and write short notes on the following (1) EMBL (2) DDBJ
20. What is OMIM?
21. What are the interpretations that you can get from a multiple sequence alignment?
22. Write short note on Entrez.

**(10 x 2 = 20 Marks)**

**C. Answer any *five* questions.**

23. Write an account on the properties of genetic code.
24. Describe the various steps in the processing of hnRNA.
25. Explain Griffith's experiment
26. Describe the various mechanisms in the posttranslational modification of peptides.
27. Enlist major applications of Bioinformatics.
28. Write a brief account on the importance of metabolomics
29. Give a short account on DNA sequencing by dideoxy method.
30. What are the major ethical concerns regarding the use of Bioinformatics?

**(5 x 6 = 30 Marks)**

**D. Write essays on any *two* of the following.**

31. Write an essay on the regulation of lac operon of *E. coli*.
32. Explain the mechanism of protein synthesis
33. Write an essay on biological databases.
34. What do you understand by sequence alignment? Explain different types of alignments used in sequence analysis.

**(2 x 10 = 20 Marks)**

\*\*\*\*\*