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Register Number:

DATE: **17** **-04-2018 (1PM)**

**ST. JOSEPH’S COLLEGE (AUTONOMOUS), BENGALURU-27**

**M.Sc. BOTANY – II SEMESTER**

**SEMESTER EXAMINATION: APRIL 2018**

**BO 8415: Biostatistics and Bioinformatics**

**Time: 2 ½ hrs. Max. Marks: 70**

**This question paper has TWO printed pages and TWO parts**

**Answer Part-A and Part-B in separate Main Answer Books.**

**Students are allowed to use calculators.**

**PART-A: BIOINFROMATICS (Answer in separate Main Answer Books)**

**A. Write on any FIVE of the following 5 x 2= 10**

1. Meanings for the **Genomatix syntax** codes- **descr, sym**

2. Orthologous genes

3. Identify the logo and write its importance



4. UniProt KB

5. HTML

6. Orphan drugs

7. Identify the sequence format with 2 reasons;

LOCUS AB000263368 bp mRNA linearPRI 05-FEB-1999 DEFINITION Homo sapiens mRNA for prepro cortistatin like peptide, complete cds.ACCESSION AB000263 ORIGIN

1 acaagatgcc attgtccccc ggcctcctgc tgctgctgct ctccggggcc acggccaccg

61 ctgccctgcc cctggagggt ggccccaccg gccgagacag cgagcatatg caggaagcgg……………………..//

**B. Write critical notes on any THREE of the following 3 x 5=15**

8. Pairwise sequence alignment

9. PubMed and its uses

10. Tertiary structure of proteins

11. Molecular visualization using tools

**C. Give a comprehensive account of any ONE of the following 1x 10=10**

12. Nucleotide sequence databases

13. Networking and Programming languages

 **P.T.O**

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**PART-B: BIOSTATISTICS (Answer in separate Main Answer Books)**

**A. Explain or define any FIVE of the following 5 x 2= 10**

1. Mahalanobis

2. Randomization

3. Chi-square test

4. Variance

5. Identify the diagram and mention the uses



6. Median class

7. Identify the type of Kurtosis with reasons



**B. Write critical notes on any THREE of the following 3 x 5=15**

8. Sampling methods (any three) and their applications in research

9. The data collected to study the yield in case of an experimental Mango crop is given below. Calculate the ***Median***.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. of fruits/Plant | Below- 5 | 5-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 | Above 70 |
| No of plant | 11 | 34 | 178 | 249 | 136 | 90 | 70 | 14 |

10. Concepts and rules of hypothesis testing

11. ANOVA

**C. Give a comprehensive account of any ONE of the following 1x 10=10**

13. The data collected to study the infection in *Pisum sativa* crop is given below. Calculate the ***Mode*** by both the methods and write a note.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. of infected leaves/plant | 0-5 | 5-10 | 10-15 | 15-20 | 20-25 | 25-30 | 30-35 | 35-40 | 40-45 |
| No of plant | 02 | 16 | 78 | 149 | 301 | 130 | 102 | 70 | 23 |

14. Give an account of correlation and regression with suitable examples.

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