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Register Number:

DATE: 19-04-2017

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

**M.Sc. BOTANY – II SEMESTER**

**SEMESTER EXAMINATION: APRIL 2017**

**BO: 8415: Biostatistics and Bioinformatics**

**Time: 2 ½ hrs. Max. Marks: 70**

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

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

**Students are allowed to use calculators.**

**PART-A: BIOINFROMATICS**

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

1. ExPASY

2. Xenologous genes

3. Ligand

4. BLAST

5. GenBank format

6. BioPerl

7. Smith-Waterman algorithm

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

8. Molecular visualization

9. NCBI and its uses

10. Alpha helix and Beta sheets

11. Genomics

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

12. Bibliographic databases

13. CADD and its applications

**BO-8415-A-17**

**PTO**

**PART-B: BIOSTATISTICS**

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

1. Ronald Fisher

2. Non-Random sampling

3. Pie diagram

4. Standard deviation

5. Peakedness

6. Range

7. ANOVA

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

8. Study design and its applications in research

9. The data collected to study the extent of infection in case of an experimental Pomegranate crop is given below. Calculate the **arithmetic mean** by shortcut method.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. seeds/fruit | 0-50 | 50-100 | 100-150 | 150-200 | 200-250 | 250-300 | 300-350 | 350-400 |
| No of plant | 111 | 134 | 178 | 249 | 136 | 90 | 70 | 23 |

10. Probability and its rules

11. Chi 2test

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

13. The data collected to study the yield of Sapota is given below. Calculate the Mode by both the methods.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. fruits/plant | 0-5 | 5-10 | 10-15 | 15-20 | 20-25 | 25-30 | 30-35 | 35-40 | 40-45 |
| No of plant | 112 | 156 | 178 | 249 | 401 | 330 | 202 | 100 | 123 |

14. Principles, methods and applications of hypothesis testing