

Reg. No.



BTS 504

Third Semester M.Sc. Degree Examination, December 2018

BIOTECHNOLOGY

(CBCS)

Bioinformatics and Biostatistics

Time : 3 Hours

Max. Marks : 70

PART – A

Write short notes on **any ten** of the following (**not exceeding 1 page each**). **(10×2=20)**

1. a) Scope of Bioinformatics.
- b) Give the role of statistics in biosciences.
- c) Distributing computing.
- d) EMBOSS package.
- e) Calculate the median for the following data 45, 68, 34, 12, 45, 39, 77.
- f) Simpson index.
- g) Theories of probabilities.
- h) Threading.
- i) Primer designing.
- j) Non-parametric statistics.
- k) Global alignment algorithm.
- l) Binomial distribution.

PART – B

Write explanatory notes on **any five** of the following (**not exceeding 3 pages each**). **(5×6=30)**

2. Calculate measures of central tendencies for the following data :

Number of chlorophyll deficient plants	Number of plants
0	34
1	14
2	20
3	24
4	25
5	33

P.T.O.



3. Explain heuristic method of pairwise alignment and give example.
4. In F2 generation, Mendel obtained 621 tall plants and 187 dwarf plants out of the total 808. Test whether these two types of plants are in accordance with the Mendelian monohybrid ratio.
5. Discuss protein folding.
6. Give an account of molecular modelling softwares.
7. Calculate the probability of getting 0, 1, 2, 3 and 4 heads when a coin is tossed four times.
8. Calculate the phylogenetic tree for the given data using distance method.

	A	B	C
A	–	22	39
B		–	41
C			–

PART – C

Answer **any two** of the following (**not** exceeding **7** pages **each**). **(2×10=20)**

9. Discuss different methods of gene prediction.
10. In a mutation breeding experiment, gamma-irradiation effect was evaluated on 100 seed weight in grams per plant of mung bean plant in M2 generation. The experimenter obtained the following results. Analyse the data using t-test and give your interference about the effect of gamma irradiation

Control	2.9	3.1	3.5	3.4	3.0	4.0	3.7	3.0	4.0	4.0
Treated	2.7	2.8	3.0	3.5	3.7	3.2	3.0	3.1	2.9	2.8

11. Elaborate on computer aided drug design and its applications.
 12. Discuss various experimental designs and add a note on ANOVA.
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