



NCF-16031202020200 Seat No. \_\_\_\_\_

M. Sc. (Sem. II) (CBCS) Examination

April / May - 2017

IBC-2 : Biochemistry

(Bioinformatics & Biostatistics)

(New Course)

Time : 2½ Hours]

[Total Marks : 70

1 Answer briefly any seven of the following questions : 14

- (a) Brief history of Bioinformatics
- (b) Null Hypothesis and Alternative Hypothesis
- (c) Global Alignment
- (d) Tools for sequence similarity search
- (e) How can you retrieve GenBankdata?
- (f) Difference between Sample and Population
- (g) Immunological database
- (h) Taxonomic databases
- (i) Local Alignment
- (j) Patterns and profiles.

2 Answer any two of the following questions : 14

- (a) Applications of Bioinformatics.
- (b) What are the various methods available for gene prediction?
- (c) Write short note on 3D structure Visualization tools.

3 (a) A new anti-hypertensive drug was tested on patients and data were collected as follows. Use suitable test to check whether the drug is effective in controlling the blood pressure or not. (critical value - 2.1) 7

Blood pressure (Control)	134	140	138	142	128	135	143	145	137	130
Blood pressure (Drug given)	124	125	120	130	119	125	122	126	118	124

- (b) Table shows the results of a survey in which each subject of a sample of 282 adults was asked to indicate which of three policies he or she favored with respect to smoking in public places. Using suitable test check is there any difference in favoring the policy. (critical value - 9.49) 7

Highest Education Level	Policy Favored		
	No Restrictions on Smoking	Smoking Allowed in Designated Areas only	No Smoking at all
Grade school	15	40	10
High school	15	100	30
College graduate	5	44	23

**OR**

- (c) Define mean, median and mode. Give examples for each. 7
- (d) What is regression and correlation analysis? Discuss in detail. 7
4. Answer the following questions : 14
- (a) Classification of Biological databases
- (b) Write an essay on Protein structure Database
- 5 Answer the following questions : (any two) 14
- (a) Data mining to Bioinformatics
- (b) Write short note on MSA tools
- (c) Write short note on Phylogenetic analysis tools
- (d) Docking software