2016

M.Phil.

1st Semester Examination

LIFE SCIENCE

PAPER—LSC-112

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Group—A

1. Answer *any four* questions from the following : 4×2

(a) What is URL ? Mention its format.

(b) State the objective of ANOCOVA.

(c) What do you mean hyperlink and hypertext ?

(d) What is added variance ?

(e) Differentiate between percentage and percentile.

(f) State the difference between LAN and WAN.

Group—B

2. Answer *any four* question from the following : 4×4

(a) What are 'scripting language' and 'markup language' ? 2+2

(b) How is bioinformatics used in the prediction of the structure of macromolecules ? 4

(c) What is UNIX ? State the advantages of UNIX. 1+3

(d) What is randomization ? State the advantages of randomization in experimental design. 1+3

(e) Explain fixed model and random model ANOVA with example. 2+2

(f) In a survey 121 men and 79 women were found to be smokers. Total number of non-smokers were 32 and 46 respectively. Is there any association between sex and smoking status ? Show all computation clearly. 4

Group—C

3. Define *any two* of the following terms : 2×8

(a) (i) State the basic functions of an operating system.

(ii) What do you mean by 'multiprocessing' and 'multitasking' operating systems ?

(iii) State the uses of BLAST. 3+3+2

(b) (i) State the assumptions of nonparametric ANOVA.

(ii) Apply Kruskal walis nonparamteric ANOVA to find whether there is any significant difference of blood haemoglobin (g/dl) between two groups of human :

Group I	*Group II*
7.3	10.4
8.2	8.4
8.4	9.6
7.2	9.2
7.0	10.0
7.6	8.8
7.8	9.4
7.4	9.2

[Critical $\chi^2_{0.05(1)} = 3.84$ and $\chi^2_{0.01(1)} = 6.64$].

2+6

(c) (i) What is non-parametric statistics ?

(ii) In an anthropometric survey the following was observed for height :

Sex	*Mean(cm)*	*SD(cm)*	*N*
Men	168.9	2.1	132
Women	164.2	1.2	148

N = No of sample

Is there any significant difference between the sexes. Show all your computations clearly.

2+6