

2017

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 do you mean by warm and cold booting?
 - (b) What is pilot experiment?
 - (c) State the functions of modem and internet service provider (ISP).
 - (d) Mention two phylogenetic softwares.

(Turn Over)

- (e) What is DBMS ?
- (f) State the objective of Chi-square test.

Group—B

2. Answer any *four* questions from the following : 4×4
- (a) How is bioinformatics used in sequence analysis of DNA, RNA and protein etc. ? 4
- (b) What is replication? State the advantages of replication in experimental design. 2+2
- (c) State the features of Windos XP and Windows 8. 2+2
- (d) How do you determine sample size for an experimental study? How do you reduce sample size ?
- (e) Mention the guidelines for good background and font of a slide during power point presentation. 2+2
- (f) Differentiate between Pearson correlation and Vanle correlation.

Group—C

3. Answer any *two* questions from the following : 2×8
- (a) (i) What are importance of biological databases ?

(ii) State briefly about different types of biological databases.

(iii) What is SRS? 2+4+2

(b) (i) What is one-way anova? Give example.

(ii) Perform Scheffe's multiple comparison F-test with the following data of an experiment with three groups :

$$\bar{X}_1 = 125.2$$

$$\bar{X}_2 = 115.3$$

$$n_1 = 10$$

$$n_2 = 10$$

$$n_3 = 10$$

$$S_w^2 = 45.5$$

Interprete your result.

$$= 3.35$$

[given $F_{0.05}(2, 27)$

(iii) What is strength of association? 2+4+2

(c) (i) In a survey the mean height of men and women were 169.8 cm and 164.3 cm respectively. The corresponding S. D.s were 2.1 cm and 1.2 cm respectively. Is there any significant difference between sexes in mean height? Show all of your workings clearly.

(ii) Differentiate between parametric and non-parametric statistics. 6+2