

2016

M.Phil.

1st Semester Examination

LIFE SCIENCE

PAPER—LSC-114

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) Briefly state the difference between native PAGE and SDS-PAGE.

(b) What is the use of a hanging bucket rotor ?

(Turn Over)

- (c) What do you mean by radiation exposure? Give proper unit of it.
- (d) What is the difference between electromagnetic wave and acoustic wave?
- (e) How does affinity chromatography differ from ion exchange chromatography?
- (f) Calculate the T_m value of the following primer :

5' AGCTAGCCATGCCGACCACATG 3'

Group—B

2. Answer *any four* question from the following : 4×4
- (a) State the principle of gel electrophoresis. 4
- (b) Write down different components of HPLC system. 4
- (c) How do you explain single nucleotide polymorphism by using RFLD method? 4
- (d) What is unipolar ECG lead? State the configuration of constructing augmented unipolar limb leads.

1+3

- (e) What is molybdenum 99 (Mo 99) ? 4
- (f) Explain the use of Mo 99 in nuclear medicine. 4

Group—C

3. Define *any two* of the following terms : 2×8
- (a) State the application of FACS. Describe with diagram how cell sorting is possible in FACS. 2+6
- (b) Write the various steps involved in the preparation of Plasmid DNA by alkaline lysis? How genomic DNA gets separated from Plasmid DNA during this procedure? 2+6
- (c) (i) Write the medical application of MRI scan.
- (ii) Write the mechanism of 3D image formation in USG. 4+4
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