

Seat No.: _____

No. Of Printed Pages: 02

[13]

SARDAR PATEL UNIVERSITY

M.Sc. Semester -I (Forensic Science) Examination

THURSDAY, 27TH, October, 2016

PS01CFSC03: INSTRUMENTAL METHODS- BIOLOGICAL

TIME- 10.00AM - 01.00PM

TOTAL MARKS: 70

Instructions:

1. Answer of all the questions (including multiple choice questions) should be written in the provided answer book only.
2. All the questions are compulsory.
3. Figures to the right indicate maximum marks of the questions.

Q-1 Multiple Choice Questions:

(8)

1. The comparison microscope is designed by _____.
(a) Roger Bacon (b) Calvin Goddard
(c) James Chadwick (d) Alphonse Bertillon.
2. _____ represents Isotropic property.
(a) Steel (b) Wood
(c) Carbon (d) Prism
3. In Innate immunity, _____ represents physiological barrier.
(a) Skin (b) Hairs
(c) P^H of stomach (d) Phagocytes
4. In Prokaryotes, _____ are consensus sequences on loading region.
(a) -25 & -75 (b) -25 & -10
(c) -10 & -35 (d) -35 & -75
5. Retention Factor (R_f) = Distance travelled by _____ upon Distance travelled by _____.
(a) Solution, Solvent (b) Solvent, Solute
(c) Solvent, Solution (d) Solute, Solvent
6. SDS is _____ type of detergent.
(a) Anionic (b) Amphipathic
(c) Acidic (d) Lipophilic
7. Mass Spectroscopy can be used to determine molecular weight up to _____.
(a) 6000 (b) 5000
(c) 4000 (d) 3000
8. In Mass Spectroscopy, liquid samples are handled by _____ needle injection through silicon rubber dam.
(a) Hyperdermic (b) Hypodermic
(c) Ballpoint (d) Sharp point

Q-2 Answer in Brief: (Any Seven)

(14)

1. What is Astigmatism?
2. Define pH of the Solution.
3. What is Acquired Immunity?
4. Explain in short RNA polymerase.
5. List out the factors that affect electrophoresis.
6. What are the types of Paper Chromatography?
7. Explain Negative staining technique of sampling in Microscopy.
8. Define Mass Spectrometry.
9. What do you mean by Sample handling system in Mass Spectrometry?

Q-3(A) Write short note on Scanning Electron Microscope

(06)

(B) Short note on:

i) Buffer

(03)

ii) Henderson's Equation.

(03)

OR

(B) Explain in detail Fluorescence Microscope.

(06)

Q-4(A) Write short note on Immunoelectrophoresis.

(06)

(B) Explain in detail Initiation and Elongation of Transcription.

(06)

OR

(B) Short note on Complement Fixation Test (CFT).

(06)

Q-5(A) Write a short note Instrumentation of Gas Chromatography.

(06)

(B) Explain in detail HPLC.

(06)

OR

(B) Explain SDS Electrophoresis in detail.

(06)

Q-6(A) Describe the Instrumentation of Mass Spectrometer.

(06)

(B) Write a short note on Types of Ion Sources.

(06)

OR

(B) Prove that: $m/e = H^2 r^2 / 2V$

(06)

————— x (2) ————— x