

[95]

SEAT No. _____

No. of Printed Pages : 2

SARDAR PATEL UNIVERSITY
M.Sc. (I Semester) Biochemistry Examination
24th October, 2018 (Wednesday)
Paper: PS01CBIC02- BIOINSTRUMENTATION
TIME- 10.00 AM - 01.00 PM

TOTAL MARKS: 70

Q-1 Choose the most appropriate answer:

(8)

1. Which of the following microscopy is best suited to observe cellular organelles?
(a) SEM (b) STM
(c) TEM (d) Phase contrast
2. The process in which radioisotopes emit radiations and particles is known as.
(a) emission (b) radioactive decay (c) absorption (d) none of these
3. In equation, $G = \omega^2 r$, ω denotes
(a) angular velocity (b) radial distance (c) centrifugal force (d) none
4. A device that converts one form of energy into another form is called
(a) Transducer (b) converter (c) emitter (d) all of these
5. The most sensitive method for measurement of alpha particle emitters is _____
(a) Autoradiography (b) solid scintillation counting
(c) Liquid scintillation counting (d) Geiger Muller Counters
6. For UV Spectrophotometer, only quartz cuvette is to be used because ____
(a) Quartz is unbreakable (b) Quartz is transparent to UV
(c) Quartz is opaque to UV radiation (d) Quartz is cheaper than glass
7. Which of the following techniques may be employed for determination of functional groups of a molecule?
(a) NMR (b) UV - visible (c) IEF (d) IR spectroscopy
8. Which of the following form of sample is suitable for X-ray diffraction studies?
(a) liquid (b) solid (c) gaseous (d) crystalline

(1)

(P.T.O.)

Q-2 Answer in Brief: (Any Seven)

(14)

1. Define interference
2. What is chromatic aberration?
3. Applications of TLC
4. Precautions to be taken in centrifugation
5. Chemical shift and its significance in NMR spectroscopy
6. Mid IR spectroscopy
7. Total consumption burner of AAS.
8. Principle of Mass Spectroscopy
9. Cerenkov radiation

Q-3 (A) Explain the role of filters in fluorescence microscope. (06)

(B) Write a note on bright field microscopy (06)

OR

(B) Give an account of various sources of illumination used in light microscopes. (06)

Q-4 (A) Describe the principle and applications of SDS PAGE. (06)

(B) Explain the principle and applications of centrifugation. (06)

OR

(B) Write a note on the principle and advantages of gas chromatography. (06)

Q-5 (A) Explain the basic theory of IR spectroscopy. What are its limitations? (06)

(B) Write a note on chemical shift in NMR spectroscopy. (06)

OR

(B) Write a note on:
(i) Photomultiplier tubes (ii) Deuterium discharge lamp (06)

Q-6 (A) Explain the principle of Mass Spectroscopy. What are its applications? (06)

(B) Write a note on the desirable properties of Biosensors. (06)

OR

(B) Write a note on the sample positioning methods for Autoradiography. (06)

—X—
②