SEAT No._____ SARDAR PATEL UNIVERSITY No. of Printed Pages : 2

T.Y.B.Sc. EXAMINATION - 2020

USO5 CMIC 02 (SEMESTER V) (NC)

SUB: MICROBIOLOGY

[817] (Bioinstrumentation)

Date: 26-12-2020 Total Marks: 70

Time: 2:00 p.m. to 4:00 p.m.

Q-1 **Attempt all following multiple choice question.** (10)

(1) What is the range of wavelength of u.v.radiation?

(a) 4000 A° -2000 A° (b) 3000 A° -5000 A° (c) 8000 A° -10000 A° (d) None of these

(2) Who introduced atomic absorption spectroscopy?

(a) M.Tswett (b) Alan Walsh (c) Martin Synge (d) Beer

(3) Which of the following is not source of u.v.radiation?

(a) Tungsten lamp (b) Deuterium lamp (c) Mercury lamp (d) None of these

(4) Which of the following is the gravitational force of earth?

(a) 880 cm/sec^2 (b) 980 cm /sec^2 (c) 1200 cm/sec^2 (d) 1350 cm/sec^2

(5) TEMED acts as _____ in PAGE.

(a) Initiator (b) Cross linker (c) Monomer (d) Catalyst

(6) Which solvent is used in TLC for amino acid?

(a) Acetone (b) Alcohol(c) Chloroform (d) Butanol

(7) Cation ion exchanger exchange_____.

(a) Cation (b) Anion (c) Both (a) & (b) (d) None of these

(8) Who developed first Biosensor?

(a) Martin Synge (b) L. L .Clark (c) Bouger Lambert (d) None of these

(9) Application of Computational & Analytical Tools to Capture & Interpret Biological data is known as_____

(a) Bioinformatics (b) Biotechnology (c) Information Technology (d) None of these

(10) Which nucleus emits in Alpha decay from an atomic nucleus?

(a) Hydrogen (b) Helium (c) Nitrogen (d) None of these

Q-2 (A) Fill in the blank (04)

(1) Hollow cathode lamp used in_____ spectroscopy.

(2) _____ ionic strength of buffer is used in electrophoresis.

(3) _____ binding agent is used to adhere adsorbent to the plate in TLC.

(4) _____ has low ionizing power but high penetration power.

(B) For each of the following statements, indicate whether statement is true or false. (04)

(1) Atomic absorption spectroscopic technique based on the principle of "Bond vibration"

(2) SDS-PAGE can be used to determine charge of protein.

(3) Molecular sieve Chromatography is also known as gel filtration chromatography.

(4) The Mass number of atom is the Sum of protons and neutrons

Q-3 **Attempt the following (any ten)** **(20)**

(1) What is nephlometry?
(2) State Beer's law.
(3) Describe component part of monochromator.
(4) What do you mean by isoelectric point?
(5) Write the difference between analytical and preparative centrifugation.
(6) What is the function of SDS in SDS-PAGE electrophoresis?
(7) Write principle of Gas chromatography.
(8) Write advantages of HPLC.
(9) Write difference between partition and adsorption chromatography.
(10) Define bioinformatics enlist major databases in bioinformatics.
(11) What is the Aim of Bioinformatics?
(12) Explain the term Biosensor.

Q-4 Attempt the following (any Four) **(32)**

(1) Discuss principle, instrumentation, method and application of atomic absorption spectroscopy.
(2) Discuss principle, instrumentation, method and application of Infra red spectroscopy.
(3) Explain in detail SDS-PAGE.
(4) Explain in brief: "Rate Zonal Density Gradient Centrifugation".
(5) Write note on: Gas Liquid Chromatography.
(6) Write note on: Thin Layer Chromatography.
(7) Write a note on Radioactive Decay.
(8) Write a Note on: Scope of Bioinformatics.

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