University of Mumbai

Examination 2020 under cluster ___ (Lead College Short name)

Program: S.E. Biotechnology

Curriculum Scheme: Rev 2016

Examination: Second Year Semester: IV

Course Code: BTC404 Course Name: Analytical Methods in Biotechnology

Time: 1 hour Max. Marks: 50

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For the students:- All the Questions are compulsory and carry equal marks .

Q1.	the sedimentation rate of a given particle will be _____ when the density of the particle and the surrounding medium are equal
Option A:	Triple
Option B:	Double
Option C:	One
Option D:	Zero
Q2.	Ohm's law expresses the relationship between current, voltage and _____
Option A:	Friction
Option B:	Resistance
Option C:	Velocity
Option D:	Displacement
Q3.	Deuterium and tungsten lamps are used as a light source in one of the following techniques
Option A:	Nuclear magnetic resonance spectrophotometers
Option B:	X-rays diffractometers
Option C:	Uv/Visible spectrophotometers
Option D:	Gas chromatograph
Q4.	NEUTRON → PROTON + _____
Option A:	NEGATRON
Option B:	POSITRON
Option C:	ALPHA
Option D:	BETA
Q5.	A primary objective of cell fractionation is
Option A:	to crack the cell wall so the cytoplasmic contents can be released.
Option B:	to identify the enzymes outside the organelles.
Option C:	to view the structure of cell membranes
Option D:	to separate the major organelles so their particular functions can be determined
Q6.	The pH of the stacking gel is ?
Option A:	6.8
Option B:	5.8
Option C:	9.8
Option D:	8.8
Q7.	In chromatography, the ratio of the distance moved by a compound to the

	distance moved by the solvent front is known as its
Option A:	Displacement rate
Option B:	Linking number
Option C:	Rf value
Option D:	Gold number
Q8.	Which of the following is for detection and measurement of radioactivity?
Option A:	Photoelectric absorption
Option B:	Proportional chamber
Option C:	Compton scattering
Option D:	Pair production
Q9.	On average, one SDS molecule binds for every _____ amino acid residues
Option A:	Two
Option B:	Three
Option C:	Four
Option D:	Five
Q10.	The following technique makes use of the difference in net charges of proteins at a given pH:
Option A:	Thin layer chromatography
Option B:	Ion exchange chromatography
Option C:	High performance liquid chromatography
Option D:	Paper chromatography
Q11.	How should the concentration of a colorless sample be determined?
Option A:	Using an indicator solution and pH paper
Option B:	Either a UV or VIS spectrophotometer
Option C:	Using a VIS spectrophotometer
Option D:	Using a UV spectrophotometer
Q12.	Which of the following types of chromatography involves the separation of substances in a mixture over a 0.2mm thick layer of an adsorbent?
Option A:	Column
Option B:	Gas liquid
Option C:	Thin layer
Option D:	Paper
Q13.	This phenomenon of fluorescence due to excitation by radioactivity is known as _____
Option A:	Fragmentation
Option B:	Scintillation
Option C:	Degradation
Option D:	None of the above
Q14.	A shift to lower wavenumber for an absorption in a spectrum corresponds to
Option A:	A shift to lower frequency
Option B:	A shift to higher energy

Option C:	A shift to lower wavelength
Option D:	A loss of intensity
Q15.	Glycerol is added to protein samples before they are loaded to the wells in SDS PAGE because glycerol helps
Option A:	To stabilize the protein structure
Option B:	To impart density to the sample
Option C:	To bind SDS to the protein
Option D:	To reduce disulfide bonds by β mercaptoethanol
Q16.	Which of the following is used as a media for density gradient?
Option A:	Protease
Option B:	Acylamide
Option C:	Ethidium bromide
Option D:	Ficoll
Q17.	Although chemically similar, the isotopes undergo same reactions at different at different rates. This effect is termed as
Option A:	Kinetic isotope effect
Option B:	Equilibrium isotope effect
Option C:	Scintillation effect
Option D:	Radiation effect
Q18.	The role of APS in SDS PAGE is to
Option A:	Act as a catalyst in the polymerization of acrylamide
Option B:	Act as a bridge between acrylamide and bis-acrylamide
Option C:	Act as a source of free radicals
Option D:	Act as a pore builder in the polymerized gel
Q19.	In reverse phase chromatography, the stationary phase is made
Option A:	Polar
Option B:	Non polar
Option C:	Either polar or non-polar
Option D:	Combination of polar and non polar
Q20.	From the following, which is a type of filtration centrifuge
Option A:	Decanter centrifuge
Option B:	Separator centrifuge
Option C:	Tubular centrifuge
Option D:	Screen/scroll centrifuge
Q21.	In electrophoresis, DNA will migrate towards
Option A:	Cathode or positive electrode
Option B:	Cathode or negative electrode
Option C:	Anode or positive electrode
Option D:	Anode or negative electrode
Q22.	The fluorescent dye such Ethidium Bromide is used for visualizing DNA. How

	does EtBr bind to DNA?
Option A:	Intercalated between the stacked bases
Option B:	Stacked between histone molecules
Option C:	Binds to the nucleotide base
Option D:	Binds to the phosphodiester backbone
Q23.	A sharp moving boundary is obtained between the pure solvent and solute containing layer in
Option A:	Chromatography
Option B:	Immuno Reactivity
Option C:	Ultra Centrifugation
Option D:	Solubility curve
Q24.	Which of the following is not true about High pressure liquid chromatography (HPLC)?
Option A:	It requires high pressure for the separation of the specious
Option B:	There is no need to vaporise the samples
Option C:	It is performed in columns
Option D:	It has high sensitivity
Q25.	Which of the following is not a method of labelling cellular constituents?
Option A:	Pulse labelling
Option B:	Pulse chase labelling
Option C:	Equilibrium labelling
Option D:	Direct labelling