Enrolment No._____

PARUL UNIVERSITY

PARUL INSTITUTE OF PHARMACY

SECOND INTERNAL THEORY EXAMINATION: 2020-21

Subject Name: ADVANCED INSTRUMENTATION TECHNIQUES
Subject Code: BP 811 ET **Date: 12/03/2021**
Time: 10:00 am to 11:15 am **Total Marks: 30**
Instructions:
1. Figures to the right indicate full marks.
2. Make suitable assumptions wherever necessary.

Q.1 Multiple Choice Questions: [10]

(1) Which one of the following is used as radiolabeled antigen? 01

(a) Iodine 131 and 125 (b) Chloramine T

(c) carbon 14 (d) Both a and b

(2) Which technique is used to assay drug concentration in plasma ? 01

(a)IR spectroscopy(b) UV spectroscopy
(c) Non aqueous titration (d)RIA

(3) With the help of which of the following equations is the distance calculated from a known wavelength of the source and measured angle? 01

(a)Coolidge equation(b)Bragg's equation
(c)Debye equation (d)Scherrer equation

(4) Which film is used to perform limit of wavenumber accuracy in calibration of IR spectrophotometer? 01

(a) Polystyrene film 0.04 mm (b) Polystyrene film 0.4 mm
(c) Polystyrene film 0.08 mm (d) Polystyrene film 0.8 mm

(5) Which parameter has to perform for calibration of HPLC ? 01

(a) Control of absorbance (b) Limit of stray light
(c) Calibration of pump (d) none of the above

(6) Only _____ percent of the effluent of the liquid chromatography must be introduced in the mass spectrometer. 01

a) 15 -20 %b) 1-5 % c) 25 - 30 % d) 10 -15 %

(7) Which of the following problems occur when combining gas chromatography and mass spectroscopy? 01

a) Difference in operating pressures

b) Reduction in sensitivity

c) Direct identification is not possible

d) It does not permit direct introduction of the effluent

(8) What is the use of ether layer? 01

a) To separate organic impurities

b) To separate inorganic impurities

c) To separate fibres

d) TO separate solvent

(9) Which of the following statements is incorrect? 01

a) Isotopic distribution patterns are observed in mass spectra.
b) Parent ions are not always observed in the mass spectra of compounds.
c) Mass spectrometry gives information about fragmentation patterns.
d) Mass spectrometry provides direct structural data.

(10) The mass spectrum of acetone (CH3COCH3) shows major peaks at m/z = 58, 43 and 15. What can be deduced from these data? 01

a) The parent ion is observed, and fragmentation involves loss of CO.
b) The parent ion is observed, and fragmentation involves cleavage of a C–C bond.
c) The parent ion is not observed.
d) The parent ion is observed, and fragmentation involves cleavage of two C–C bonds.

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B.PHARM EIGHTHSEMESTER

SECONDINTERNAL THEORY EXAMINATION: 2020-21

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Q.2 Long Answers:(Any One)

(1) Write in detail about X ray Crystallography techniques. **10**

(2) Explain following Ionization techniques – **10**
   a) Electron impact,
   b) Chemical ionization
   c) MALDI.

Q.3 Short Answers:(Any Two)

(1) Write a not on calibration of HPLC instrument **05**

(2) Write a short note on Radio Immune Assay **05**

(3) Explain Principle and procedure involved in the solidphase extraction **05**

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