



## **BRAINWARE UNIVERSITY**

## **Term End Examination 2023** Programme - B.Pharm-2019 Course Name - Advanced Instrumentation Techniques **Course Code - BP811ET** (Semester VIII)

Full Marks: 75 Time: 3:0 Hours [The figure in the margin indicates full marks. Candidates are required to give their answers in their

own words as far as practicable.]

Group-A

1 x 20=20

a) System to system variation.

c) Person to person variation.

(Multiple )	Choice Type Question)
<ol> <li>Choose the correct alternative from the</li> </ol>	e following :
(i) Select the best one out during electronis?	onic balance calibration the 1st step we check
a) Verified balance weights. c) last validation data.	b) last calibration data. d) Bubble balance.
(ii) Select the best one out the inert gas i	s used for gas chromatography?
a) nitrogen. c) helium. (iii) Select in IR spectrophotometry the so	b) argon. d) all of these.
a) magnesium bromide.	
c) silver iodide.  (iv) Memorize in solid phase extraction pr	b) sodium chloride. d) potassium bromide. reconditioning done using?
<ul> <li>a) LCMS grade methanol.</li> <li>c) extracted sample using methanol.</li> <li>(v) Select the mainly required Filter for so</li> </ul>	b) 10% methanol. d) all of these.
a) filter paper. c) holmium filter . (vi) Identify the liquid liquid extraction oc	b) micron filter. d) cartridge filter.
<ul><li>a) glass funnel.</li><li>c) manifold.</li><li>(vii) Which of the following solvent is not</li></ul>	b) buchner funnel. d) separating funnel.
a) CHCL3 c) CDCL3	b) CCL4
	d) D2O of High performance liquid chromatography

(ix) Select Analysis of sodium in Flame Photometry gives which color?

b) Flow rate variation.

d) Linearity variation.

a) green.	
c) red.	b) blue.
(x) Select During calibration of HPLC sample prepared solvent?	d) yellow. paration of caffeine using which
a) Acetonitrile.	
c) Isonroud Alexander	b) Methanol.
c) Isopropyl Alcohol.	
(xi) Select Ultraviolet spectrophotometer Cuvette	are made up of?
o, steel and carbon.	b) plastic and aluminum.
c) thermocol and fiber.	d) quartz and glass.
(xii) Select the use of Mass spectroscopy	u) quartz ana Biassi
Determination of molecular weight.	b) Elucidating the chemical structures of
c) Both a & b.	molecules.
(xiii) In NMR spectrum the model is	d) none of these.
(xiii) In NMR spectrum the nuclei in up field reson	ate operate at
a) It is constant throughout the spectrum	b) It doesn't depends on chemical shift
c) high frequency	d) Low frequency
(xiv) Determine from the following, TMS is used as	an
a) universally accepted gas	b) universally receiver
c) universally accepted doner	d) universally accepted reference
(xv) Determine in which validation parameter the	change of Personnel was observed
a) Limit of quantification	
c) Robustness	b) Precision
	d) Limit of detection
(xvi) Choose from which calibartion parameter of Holmium filter is used	JV-Visible Spectrophotometer
a) control of absorbance	b) limit of stray light
c) resolution power	d) control of wavelength
(xvii) Choose from which statement is true for calib	partion parameter of LIV-Visible
Spectrophotometer Potassium dichromate is	used?
a) control of absorbance	b) limit of stray light
c) resolution power	d) control of war l
(xviii) Choose During the limit of stray light which ch	d) control of wavelength
a) potassium chloride	b) potassium dichromate
c) Sodium dihydrogen phosphate	d) Sodium bicarbonate
(xix) Identify in IR Spectrophotometer the sample	
a) Liquid paraffin.	b) Pippetment oil.
c) Sodium chloride solution.	d) Nujol solution
(xx) Select the best one out during research and n is not used?	nethod development which parameter
a) Hit and trials.	b) pH of buffer .
c) Flow rate .	d) Troubleshoots.
	-, dalesiloots.
Group	o-R
(Short Answer Ty	De Questions\
	5 x 7=35
2. Describe the applications of DSC.	
3. Explain the methodology involved in the qualification	tion of HPLC (5)
4. Describe the basics and the principle of Mass Spe	CONTON CONTON
5. Explain in detail about principle and working of IF	Spectrophoton (5)
5. Explain in detail about principle and working of the	ame Photometer? (5)
6. Explain in detail about principle and working of F	the solid phase (5)
7. Describe the principle and procedure involved in OR	the solid phase extraction (5)
Discuss the concept X-ray Crystallography.	(3)
Discuss the concept A tay of Jatanography.	(5)
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8. Explain the detailed principle of DSC by drawing the schematic diagram of the Appa	ratus. (5)
OR	
Write a short note on X-Ray crystallography.	(5)
Group-C	
(Long Answer Type Questions)	10 x 2=20
9. Describe in detail about UV- Visible Spectrophotometer?	(10)
10. Explain concept of TQM. Add a note on ICH-EG guidelines	(10)
OR  Explain the principle and different methods of Radio Immuno Assay	(10)
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