BRAINWARE UNIVERSITY

Term End Examination 2022
Programme – B.Pharm-2019
Course Name – Instrumental Methods of Analysis
Course Code - BP701T
(Semester VII)

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

(Multiple Choice Type Question) 1 x 20=20

1. *Choose the correct alternative from the following :*

(i) select the wavelength used to detect low-Pressure Mercury lamp Liner Radiation.
a) 254nm b) 700nm
c) 800nm d) 600nm

(ii) select the correct option in Modern UV Sample cell or Cuvette made up of ?
a) Glass b) Plastic
c) Quartz d) Cobalt

(iii) Choose the correct wavelength range corresponding to UV-Visible region?
a) 400-800nm b) 200-800nm
c) 25µm-2.5µm d) 2.5 µm-1mm

(iv) Determine in UV-Visible Spectrophotometry if we take fifty percent of fifty ppm and add the remaining fifty percent with distilled water what is the exact ppm solution we obtained
a) 100ppm b) 50ppm
c) 25ppm d) 10ppm

(v) Predict the testing of flame photometry on ignition of lithium we observe
a) red b) yellow
c) lime green d) violet

(vi) Predict the testing of flame photometry on ignition of potassium we observe.
a) yellow b) violet
c) lime green d) red

(vii) select the best out of it, in turbidometry we analyze
a) insoluble particles with respect to scattering b) soluble particles with respect to transmittance
c) metals d) absorbance

(viii) choose the best out of it, on the effect of solvents on absorption maxima in paracetamol we dissolves with
a) HCl b) H_2SO_4
c) Boric acid d) NaOH

(ix) Identify the best out of it, in percentage purity calculation is also known as.

a) normality
b) linearity
c) accuracy
d) assay

(x) simulate the following Partition Coefficient other than titration we do that by using

a) HPLC
b) GC
c) IR
d) UV

(xi) Identify the correct option On increasing PH, Phenol shows

a) Bathochromic Shift
b) Hypsochromic shift
c) Red Shift
d) Both A&C

(xii) PREDICT THE FOLLOWING IN CORRECT ASCENDING ORDER FROM INITIAL LEVELS

a) SOLUBILITY, MELTING POINT, MOISTURE CONTENT, TLC, ASSAY
b) SOLUBILITY, TLC, MOISTURE CONTENT,MELTING POINT, ASSAY
c) HPLC, GC, IR, LCMS, PAPER CHROMATOGRAPHY
d) GC, IR, SOLUBILITY, HPLC, MELTING POINT

(xiii) Predict errors in HPLC

a) leakage
b) out of mobile phase
c) 3x of sample run time not maintained
d) all of these

(xiv) predict the errors in the assay by using UV-Visible spectrophotometry

a) different diluents
b) increase pH
c) none of these
d) all of these

(xv) separate the odd one out in a UV-Visible spectrophotometer

a) Quartz
b) frit
c) photo-multiplier tube
d) grating

(xvi) Observe that in which of the following is responsible for increasing of fluorescence intensity of a compound except

a) Rigidity
b) Planarity
c) No. of rings
d) Dissolved oxygen

(xvii) Identify in atomic absorption spectroscopy ionization interference can be eliminated by addition of ?

a) EDTA
b) Cryolite
c) Cesium salts
d) Lanthanum chloride.

(xviii) Choose the correct sequence of flame photometry?

a) Sample residue > excited state atoms > Return in ground state > Emission of radiation
b) Sample residue > Ground state > Excited state > Emission of radiation
c) Emission of Radiation > Excited state > Ground state > Sample residue.
d) all of the statements are incorrect

(xix) Determine in atomic absorption spectroscopy the most strongly absorbed light is called as ?

a) Resonance line.
b) Base line
c) Stokes line
d) Anti stokes line

(xx) Identify the fluorescence intensity depends on all of the following except

a) Concentration
b) Polarity
c) Path length
d) Intensity of incident radiation

Group-B

(Short Answer Type Questions) 5 x 7=35

2. Differentiate about Gas chromatography and thin layer chromatography (5)
3. describe about electrophoresis? (5)
4. Determine the equation A=ECL. (5)
5. Explain about the derails of resolution, asymmetric factor, capacity factor, Theoretical plate as a HPLC peak parameters (5)
6. write in detail the compare between Atomic Spectroscopy and Uv- visible spectroscopy (5)

7. Describe the principle and various gels used in Gel Electrophoresis. (5)

OR

Describe about Quenching? Enumerate the various factors which influence quenching effect. (5)

8. Write the advantages and disadvantages of TLC over paper chromatography? (5)

OR

Write the events that occur when the compound of a metal to be investigated is aspirated into a flame? (5)

Group-C

(Long Answer Type Questions) 10 x 2=20

9. Compare and differentiate thin-layer chromatography vs radial paper chromatography in detail. (10)
10. Distinguish briefly about different factors, which influences the fluorescence intensity. (10)

OR

Illustrate schematically the principle, working and instrumentation of Atomic Absorption Spectroscopy. (10)

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