Manmohan Technical University
Office of the Controller of Examinations
Exam Year: 2082, Jestha (Model Question)

Exam Roll: …… Invigilator's Sign: ……
Exam Roll in words: ……

School: School of Medicine and Allied Health Sciences	Level: Bachelor	
Program: Pharmacy	Year/Part: II/II	Superintendent's Sign: ……
Subject: Pharmaceutical Analysis II (BP404)		Code No. ……

GROUP A *(Multiple-Choice Questions)*	**[10×1=10]**	**Maximum Time: 20 Minutes**

i. This group contains 10 multiple-choice questions (MCQs).
ii. Answers must be marked on the MCQ Answer Sheet.
iii. You may use the main answer sheet for rough work.
iv. Marks will not be awarded for answers with cutting, erasing, overwriting, or multiple shaded options.
v. The MCQ question paper must be returned along with the MCQ answer sheet.

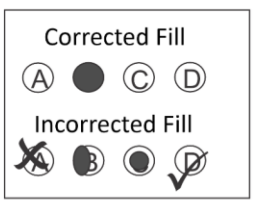
Code No.:

1. Conductivity of 0.01M KCl at 25^{0}C is:
   a) 1.413×10^{-3} S/cm
   b) 4.113×10^{-3} S/cm
   c) 1.413×10^{-6} S/cm
   d) 1.314×10^{-3} S/cm
2. Which potential can be neglected:
   a) Reference
   b) indicator
   c) salt bridge
   d) none
3. Copper electrode dipped in the copper sulphate solution is an example of…… Kind electrode
   a) First
   b) Second
   c) Third
   d) Inert
4. For measuring fluoride ion via potentiometric titration…… electrode is used:
   a) Glass membrane
   b) solid state
   c) liquid membrane
   d) gas sensing
5. …… current is due to the traces of impurities
   a) Faradic
   b) Condenser
   c) Migration
   d) Diffusion current
6. The electrode in amperometer is rotated at…… rpm
   a) 500
   b) 600
   c) 700
   d) 400
7. What is the principle behind chromatography?
   a) Separation based on molecular size
   b) Separation based on differential partitioning between mobile and stationary phases
   c) Separation based on electrical charge
   d) Separation based on density
8. In gas chromatography (GC), the mobile phase is:
   a) A liquid
   b) A gas
   c) A solid
   d) A supercritical fluid
9. Which of the following factors affects the retention time in chromatography?
   a) Temperature
   b) Flow rate of the mobile phase
   c) Polarity of the analyte
   d) All of the above
10. What is the purpose of the retention factor (R_f) in chromatography?
    a) To measure the polarity of the analyte
    b) To identify compounds based on their movement relative to the solvent front
    c) To determine the flow rate of the mobile phase
    d) To calculate the molecular weight of the analyte

Model Question

MCQ Answer Sheet

Marks Secured: _____
In Words: _____
Examiner's Sign: _____ Date: _____
Scrutinizer's Marks: _____
In Words: _____
Scrutinizer's Sign: _____ Date: _____



1.	A	B	C	D		6.	A	B	C	D
2.	A	B	C	D		7.	A	B	C	D
3.	A	B	C	D		8.	A	B	C	D
4.	A	B	C	D		9.	A	B	C	D
5.	A	B	C	D		10.	A	B	C	D

Manmohan Technical University
Office of the Controller of Examinations
Exam Year: 2082, Jestha (Model Question)

School: School of Medicine and Allied Health Sciences	Level: Bachelor	Time: 3 Hours
Program: Pharmacy	Year/Part: II/II	Full Marks: 50
Subject: Pharmaceutical Analysis II (BP404)		Pass Marks: 25

- ✓ *Candidates are required to give their answers in their own words as far as practicable.*
- ✓ *The figures in the margin indicate Full Marks.*
- ✓ *Assume suitable data if necessary*.

GROUP A *(Multiple-Choice Questions are provided on separate sheet)* **[10x1=10]**

GROUP B ***(****Problem Based Question****)*** **[1×10=10]**

1. A researcher is performing an HPLC analysis to separate and quantify three compounds (X, Y, and Z) in a mixture. The following observations were made during the experiment:
    - The stationary phase used is a C18 reverse-phase column.
    - The mobile phase consists of a mixture of water (with 0.1% formic acid) and methanol in a gradient elution mode.
    - The flow rate is set to 1.0 mL/min.
    - The detector used is a UV-Vis detector set at 220 nm.

    a. Explain why a C18 reverse-phase column was chosen for this analysis [2]
    b. Discuss various suitability test parameters used in HPLC [5]
    c. What role does the UV-Vis detector play in this analysis. [4]

GROUP C ***(****Long Answer Questions* *- **Attempt Any Four)*** **[4×5=20]**

2. Discuss the conductometric titration of a strong acid vs strong base and a strong acid vs weak base, along with suitable graphs.
3. Describe any two commonly used detectors in gas chromatography, including their working principles.
4. Explain the principle and theory of diazotization titration with a suitable example.
5. Define hyphenated techniques. Explain the principles and applications of any one of them.
6. Explain the principle and working mechanism of a polarimeter.

GROUP D ***(****Short Answer Questions* *- **Attempt Any Five)*** **[5×2=10]**

7. What do you mean by specific conductance and molar conductance? Define each term.
8. Briefly explain the working principle of the dropping mercury electrode.
9. Write a short comparison between HPTLC and TLC.
10. List the applications of a refractometer.
11. What is optical activity? Define with a suitable example.
12. What is an electrochemical cell? Define and mention its basic components.

∞∞ **The End** ∞∞

Model Question