

Invigilator's Signature :

CS/B.Pharm (NEW)/SEM-3/PT-301/2010-11 2010-11 PHARMACEUTICAL ANALYSIS

Time Allotted : 3 Hours

Full Marks : 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

GROUP – A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for any *ten* of the following :

 $10 \times 1 = 10$

- i) Complexing agent soluble in water is called as
 - a) Complexing formation agent
 - b) Chelating agent
 - c) Sequestering agent
 - d) Additional agent.
- ii) The catalyst used in Kjeldahl's method of nitrogen estimation is
 - a) $CuSO_4$ b) $(NH_4)_2SO_4$
 - c) K_2SO_4 d) H_2SO_4 .
- iii) In gel permeation chromatography molecules are separated on the basis of their
 - a) chemical properties
 - b) physicochemical properties
 - c) partition coefficient
 - d) size and shape.

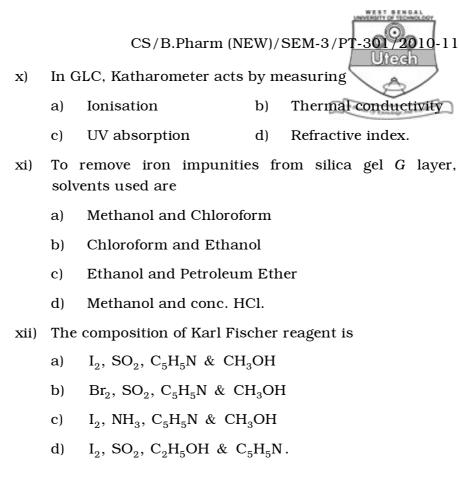
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- iv) In reverse phase HPLC the stationary phase wo
 - a) Polar
 - b) Non-polar
 - c) Non-polar with long chain hydrocarbon
 - d) None of these.
- v) $\left[Cr(H_2O)_4 Cl_2 \right]$ is called
 - a) Tetraaquochromium (II) chlorochloride
 - b) Tetraaquochlorochromium (IV) chloride
 - c) Tetraaquohlorochromium (III) chloride
 - d) Tetraaquochromium (III) cobalt chloride.
- vi) Retention time is associated with
 - a) TLC
 - b) HPLC
 - c) Gas chromatography
 - d) Complexometric titration.
- vii) Which of the following indicators is used in complexometric titration ?
 - a) EBT b) methyl red
 - c) phenopthalein d) none of these.
- viii) Photodiode array detector is used in
 - a) HPLC
 - b) TLC
 - c) GC
 - d) Paper chromatography.
- ix) Dropping mercury electrode consists of
 - a) mercury reservoir b) tungsten reservoir
 - c) silver reservoir d) all of these.

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GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. $3 \times 5 = 15$

- 2. How would you prepare and standardise 0.1 (N) perchloric \overline{a} .
- Determine the pH of a solution by using a glass electrode.
 Draw and label a standard calomel electrode.
 3 + 2
- 4. Write a short note on making and damasking agents with suitable examples.
- 5. Write down the principle involved in the estimation of nitrogen by Kjeldahl method.
- 6. What do you mean by gradient and successive elution.

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 3×15

GROUP - C

(Long Answer Type Questions) Answer any three of the following.

- Explain the detectors used in Gas chromatography. What do 7. you mean by wall coated and open tubular column ? Give the methods of plate preparation in TLC. 8 + 3 + 4
- Give the working principle of HPLC and describe its operation 8. along with a neat labelled diagram. Give the applications of HPLC. 12 + 3
- What is the basic principle of diazotization titration ? Why is 9. temperature control essential for such titration ? How will you prepare and standardize 0.1 (M) 800 nitrite solution ? Give examples of three omgs where diazotization titration can be used ? 4 + 2 + 6 + 3
- 10. What do you mean by Warner's Co-ordination number ? "p^Mindicators are chelating agent but all chelating agents are not p^{M} indicators". Explain. What is the nature of the complexes of EDTA with di-, tri- and tetravalent metals ? Write down the general principles involved in EDTA titration? 1 + 4 + 6 + 4
- 11. Describe briefly the apparatus used in Amperometric titration. Write down three advantages and disadvantages of Amperometric titration. What do you mean by Potentiometric analysis ? Write down the advantage and disadvantage of Potentiometric titration over indicator titration. 4 + 4 + 2 + 5

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