

GUJARAT TECHNOLOGICAL UNIVERSITY
B. Pharm. – SEMESTER – IV • EXAMINATION – WINTER • 2014

Subject Code: 240004**Date: 24-12-2014****Subject Name: Pharmaceutical Analysis - II****Time: 02:30 pm - 05:30 pm****Total Marks: 80****Instructions:**

1. Attempt any five questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

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| Q.1 | (a) Write a note on advantages and disadvantages of instrumental methods vs conventional methods of analysis. | 06 |
| | (b) What is signal to noise ratio? How is this ratio important while performing analysis & validation? | 05 |
| | (c) Describe importance & methods for determination of melting point in pharmaceutical analysis. | 05 |
| Q.2 | (a) Explain theory of chromatographic separation using Van De Meter equation. | 06 |
| | (b) Describe stationary and mobile phases used in column and thin layer chromatography. | 05 |
| | (c) Explain retention & separation mechanism in column /thin layer chromatography. | 05 |
| Q.3 | (a) Describe the factors affecting chromatographic efficiency and resolution. | 06 |
| | (b) Describe the types of paper chromatography and its applications in pharmaceutical analysis. | 05 |
| | (c) Describe application of TLC for identification and purity test in pharmaceutical analysis. | 05 |
| Q.4 | (a) Define the followings:
i. Electrochemical methods
ii. Standard reduction potential
iii. Cell potential | 06 |
| | (b) Explain with diagram one reference and one indicator electrode used in potentiometric /pH metric analysis. | 05 |
| | (c) Describe applications of potentiometric methods in pharm analysis giving with two examples. | 05 |
| Q.5 | (a) Explain theory of polarography showing significance of half wave potential and diffusion current. | 06 |
| | (b) Explain the working of dropping mercury electrode with a diagram | 05 |
| | (c) Describe the parameters of accuracy, precision and specificity /selectivity in analytical method validation. | 05 |
| Q. 6 | (a) What is specific conductance, describe factors affecting conductance. | 06 |
| | (b) Describe types of empirometric titration and its application in pharm analysis. | 05 |
| | (c) Explain the structure and functioning polarimeter. | 05 |

- Q.7**
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| (a) | Explain the difference between differential thermal analysis and differential scanning calorimetry. | 06 |
| (b) | Explain the principles and application of thermogravimetric analysis. | 05 |
| (c) | Illustrate different physical and chemical transitions that can be studied using differential thermal analysis and differential scanning calorimetry. | 05 |
