1.1.1

Pharmaceutical Analysis

(B.Pharmacy, 1st Semester, 2006)

Term: 3 Hours]
Maximum Marks: 80

Note: Section A is compulsory. Attempt all questions from section B and any three questions from section C. Log-Tables, Statistical tables etc. will be provided.

Section-A

Marks: 2 Each

1. (a) What is meant by the terms 'Major Constituent', 'Minor Constituent' and 'Trace Constituent'?

(b) What is the importance of statistical tool in statistical analysis?

(c) Give one example each of Arrhenius acid, Bronsted acid, Lewis acid.

(d) How can you express the strength of an acid?

(e) What should be approximate pH of a solution of sodium acetate?

(f) Write a note on Polyprotic acids.
(g) What is meant by the terms aprotic, amphiprotic and protic?

(h) What is a Monograph? What salient information does it contain?

(i) What are 'Mixed Indicators'? Do they offer any advantage over single indicator?

(j) What primary standards are used for the following standardizations:
   - Iodine Solution, Silver Nitrate Solution, Sodium Hydroxide Solution, Sulphuric Acid.

(k) A freshly prepared potassium permanganate solution has to be boiled. Why?

(l) Solubility of silver chloride is 0.0015 g/l. Calculate its solubility product.

(m) What indicators will be employed in Assay for Acetic Acid, Mohr Method, Volhard Method, Berthelot Acid assay.

(n) What is the pH of a solution containing 0.0000343 g eqn. of H\textsubscript{3}O\textsuperscript{+} per litre?

(o) Calculate and express to correct significant figures: 2.5 \times 500.01 \times 10.03.
Section-B  Marks: 5 Each

2. 20 determinations were made for weight of paracetamol in tablet samples. Mean result was 495.2 g. Calculate whether the result is significant in the assay if true value is 488.5 g and standard deviation is 0.80.

3. Give a brief account of organic precipitants used in gravimetry.


5. Which indicator should be used in titration of aqueous ammonia against standard HCl solution? Give reason in brief.

Section-C  Marks: 10 Each

6. Two different methods were used to analyze five different sodium carbonate samples.

<table>
<thead>
<tr>
<th>Sample</th>
<th>Method A</th>
<th>Method B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>17.6</td>
<td>17.9</td>
</tr>
<tr>
<td>2</td>
<td>6.8</td>
<td>7.1</td>
</tr>
<tr>
<td>3</td>
<td>14.2</td>
<td>13.8</td>
</tr>
<tr>
<td>4</td>
<td>20.5</td>
<td>20.3</td>
</tr>
<tr>
<td>5</td>
<td>9.7</td>
<td>10.2</td>
</tr>
</tbody>
</table>

Is there significant difference between the two results?

Turn Over
7. What are Neutralization curves? Discuss giving examples of each type.

8. Discuss the theory of Oxidation-Reduction indicators. Give an account of redox indicators.

9. Write short notes on:
   (a) Fractional precipitation
   (b) Precipitation and flocculation in ground water