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**JBM-1612030701030300** Seat No. _____

# M. P. M. (Sem. III) Examination

**December - 2019**

## Pharmaceutical Analysis - I

Time : **3** Hours ] [ Total Marks : **80**

**Instructions :** (1) Figure to the right indicates marks.
(2) Answer the three (3) questions from each section.
(3) Question one (1) and question five (5) are compulsory.
(4) Draw neat and clean diagrams as required.

### SECTION - I

**1** Answer any seven out of ten : **14**

(1) Comment on: Complexometric titration should perform in alkaline medium.

(2) Comment on: Water act as an amphiprotic solvent in non-aqueous titration.

(3) What is adsorption indicator? Give example of adsorption indicators.

(4) Define titration and standardization.

(5) Give difference between quality assurance and quality control.

(6) What is a spectator ion? Explain with examples.

(7) What is back titration? When back titration is required?

(8) What is difference between molarity and molality?

(9) Write application of complexometric titration.

(10) Explain. Titrimetric analysis is also known as volumetric analysis.

**2** Answer the following question(s) : **13**

(1) Enlist different end point determination techniques in precipitation titration. Discuss about mohr's method in detail. **7**

(2) Which types of compounds are assayed by non-aqueous titration? Write about different types of solvents used in non-aqueous titration. **6**

3 Answer the following question(s) : **13**

(1) Enlist different validation parameters. Explain in detail about any three validation parameters. **7**

(2) What is pharmaceutical analysis? Discuss its application. **6**

4 Answer the following question(s) : **13**

(1) Enlist different types of acid-base titration. Discuss titration curve of strong acid vs strong base. **7**

(2) Explain levelling and differentiating effect in non-aqueous titration with example. **6**

## SECTION - II

5 Answer any two out of three questions : **14**

(1) What is ligand? Classify ligand with examples. Write a note on metallochrome indicators. **7**

(2) Discuss different sources of pharmaceutical errors. How it should minimize? **7**

(3) What is salt? Explain hydrolysis of salt in detail. **7**

6 Answer the following question(s) : **13**

(1) Discuss theory of redox titration? Write basic principle of diazotization titration. **7**

(2) Define term indicator. Enlist different theories of indicator. Explain benzoid theory of acid-base indicator. **6**

7 Answer the following question(s) : **13**

(1) Define pH and derive Henderson - Hesselbach equation for acid and base. **7**

(2) Which are different methods for writing oxidation-reduction reaction? Write in detail about electron balance method with example. **6**

8 Answer the following question(s) : **13**

(1) Discuss about titration which is used for estimation of water. **7**

(2) What is difference between indicator and self indicator? Give examples of self indicator. Discuss $KMnO_4$ as a self indicator in redox titration. **6**