



**HU-014-003203** Seat No. \_\_\_\_\_

**Master of Pharmacy Management (Sem. II) (CBCS)  
Examination**

**June / July - 2017**

**Pharmaceutical Chemistry - II**

*[ Physical Chemistry ]*

**Faculty Code : 014**

**Subject Code : 003203**

Time : 3 Hours]

[Total Marks : 80

- Instructions :**
- (i) Attempt three questions from each section.
  - (ii) Questions 1 and 5 are compulsory.
  - (iii) Figures to the right indicates full marks for the respective question.

**SECTION - I**

- 1 Explain the following terms : (any seven) 14
- (1) Specific optical rotation
  - (2) Colligative properties
  - (3) Phase Rule
  - (4) Adsorption
  - (5) Phosphorescence
  - (6) Zero order kinetic
  - (7) Curie
  - (8) Photochemistry
  - (9) Cell constant
  - (10) Heat of combustion

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|---|--|---|
| 2 | (1) Define viscosity and explain in detail any two methods for measurement of viscosity. | 7 |
|   | (2) State and explain Henry's law. Enlist its limitations.                               | 6 |
| 3 | (1) Explain first law of thermodynamics.   | 7 |
|   | (2) Difference between :   | 6 |
|   | (i) Adsorption and Absorption;   |   |
|   | (ii) Physical adsorption and Chemical adsorption.  |   |
| 4 | (1) Give the detailed application of Radiopharmaceuticals in pharmacy.                   | 7 |
|   | (2) Explain various methods to determine the order of a reaction.                        | 6 |

## SECTION - II

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|---|--|----|
| 5 | Answer the following questions : (any two)   | 14 |
|   | (1) Define surface tension. Enumerate methods for the determination of surface tension. Explain any two in detail.           |    |
|   | (2) Write a short note on 'Elevation in boiling point'.  |    |
|   | (3) Write a note on 'The Carnot Cycle'.  |    |
| 6 | (1) Define Adsorption isotherm. Explain Langmuir adsorption isotherm with limitation.  | 7  |
|   | (2) State and explain Beer-Lambert's law of Photometry. Calculate the absorbance corresponding to ten and 100% transmission. | 6  |
| 7 | (1) What are the methods of measurements of radioactivity ? Discuss any one method.  | 7  |
|   | (2) Differentiate following :  | 6  |
|   | (1) Homogeneous and Heterogeneous catalysis  |    |
|   | (2) First order reaction and second order reaction.  |    |

- 8 (1) Aspirin solution has initial concentration 500 mg/100 ml. 7  
After 40 days the concentration becomes 300 mg/100 ml.  
The reaction follows first order kinetic. Calculate half-life  
and reaction rate constant.
- (2) State and explain Raoult's law. 6
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