PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2017
(Sixth Semester)
Branch- **CHEMISTRY**

PHYSICAL CHEMISTRY - II

Time : Three Hours Maximum : 75 Marks

SECTION-A (20 Marks)

Answer **ALL** questions
ALL questions carry **EQUAL** marks . (10 x 2 = 20)

1 What is rate constant? Give example.
2 Give the units of second order rate constant.
3 Write a note on : Consecutive reactions. Give example.
4 Give any one example for conductometry technique.
5 Write the Arrhenius equation and explain the terms in it.
6 What is quantum yield?
7 State diamagnetism.
8 Illustrate the principle of Debye equation.
9 Define: Degrees of freedom.
10 What is congruent melting point? . .

SECTION - B (25 Marks!

Answer **ALL** Questions
ALL Questions Carry **EQUAL** Marks (5 x 5 = 25)

11 a Derive first order rate constant.

OR

b Illustrate the following with examples, (i) Specific reaction rate (ii) Pseudo-unimoleeular reactions.

12 a How will determine the order of a reaction using graphical method?

OR

b Write notes on : (i) Parallel reaction (ii) Reversible reaction.

13 a Derive an expression for rate constant of a biomolecular gaseous reaction on the basis of collision theory.

‘ OR

b Distinguish between dark and photochemical reactions.

14 a How will measure the magnetic susceptibility using Guoy’g method?-

OR

b Derive Clausius - Mosotti equation.

15 a Explain the phase diagram of sulphur system.

OR

b Derive Gibb’s phase rule.

SECTION - C (30 Marks)

Answer any **THREE** Questions
ALL Questions Carry **EQUAL** Marks (3 x 10 = 30)

16 a Distinguish between order and molecularity of a reaction. (4)
b Derive second order rate constant and half-life period. (6)

17 a Explain the kinetics of H_2 - Br_2 chain reactions. (8)
b Write a note on: Complex reaction. (2)

18 > Derive the kinetics of H_2 - Br_2 photochemical reactions.

19 Describe any five applications of magnetic susceptibility.

20 Draw and exnlain the ohase diaeram of FeCh svstem.