CLASS: IMSC   SEMESTER : III
BRANCH: PHYSICS   SESSION : MO/19

SUBJECT: CH213 CHEMISTRY-II

TIME: 3 HOURS   FULL MARKS: 50

INSTRUCTIONS:
1. The question paper contains 5 questions each of 10 marks and total 50 marks.
2. Attempt all questions.
3. The missing data, if any, may be assumed suitably.
4. Before attempting the question paper, be sure that you have got the correct question paper.
5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.

Q.1(a)	Derive vander Waals equation and explain its applicability to real and ideal gases.	[5]
Q.1(b)	What are on which surface tension of a liquid depends? Describe drop number method to measure surface tension of a liquid.	[5]

Q.2(a)	Discuss common-ion effect with suitable example.	[5]
Q.2(b)	Derive Henderson equation and explain its application.	[5]

Q.3(a)	Explain the aromaticity in Benzene through theoretical and experimental perspective.	[5]
Q.3(b)	Draw the reaction mechanism of nitration of benzene. Demonstrate with energy diagram.	[5]

Q.4(a)	Differentiate Galvanic and electrolytic cells. Discuss different types of Galvanic cells.	[5]
Q.4(b)	Derive Nernst equation and state its applications.	[5]

Q.5(a)   Identify the product A, B and C in the following reaction.   [5]

$$C \xleftarrow{\text{i) } H_2O_2/OH^-} B \xleftarrow{\text{i) } BH_3/THF} H_3C-\underset{H}{C}=CH_2 \xrightarrow{H_2O/H^+} A$$

Q.5(b)   Draw a reaction mechanism for the formation of **A**.   [5]