

DR-1493

**M. Sc. (Second Semester) Examination,
April-May 2019**

CHEMISTRY

Paper : Third

(Physical Chemistry-II)

Time Allowed : Three hours

Maximum Marks : 40

Note : Attempt questions of all two sections as directed. Distribution of marks is given with sections.

Section-A

$5 \times 3 = 15$

(Short Answer Type Questions)

Note : Attempt all five questions. Each question carries 03 marks. Answer the following questions in not more than 100 words.

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PTD

1. Write a note on Energy of Activation.

Or

Discuss in short Homogeneous Catalysis.

2. Write a note on Kelvin equation for calculation of vapour pressure of droplets.

Or

Write a note on surface films on liquids.

3. How are polymers different from ordinary molecules? Explain in short. <http://www.a2zsubjects.com>

Or

What are liquid crystal polymers? Discuss.

4. Write a note on entropy flow in non-equilibrium thermodynamic reactions.

Or

Explain phenomenological equations.

5. Write the limitations of Debye-Huckel Onsagar law.

Or

Explain in short structure of electrified interfaces.

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Section-B

$5 \times 5 = 25$

(Long Answer Type Questions)

Note : Attempt all five questions. Each question carries 05 marks. Answer the following questions in not more than 800 words

6. Discuss the Lindemann's theory of unimolecular reactions and the modifications made by Rice-Ramsperger-Kassel-Marcus.

Or

Write notes on :

- (a) Flash photolysis
 (b) Pyrolysis of acetaldehyde

7. Write a detailed note on thermodynamics of micellization.

Or

How is the surface area estimated with the help of BET equation?

8. Discuss any two methods of molecular mass determination of polymers.

Or

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What are ionic polymers? Discuss the mechanism of ionic polymerisation.

9. Discuss the entropy balance equations for irreversible heat flow processor.

Or

Write notes on :

- (a) Non-equilibrium stationary states
 (b) Interdependence of fluxes and forces with example

10. Discuss the electrolyte solution interface and structure of double layer interface.

Or

Discuss the basic aspects of polarography theory and derive Ilkonic equation for the diffusion current in a polarographic cell.