



**B. L. D. E. Association's
S. B. ARTS AND K. C. P. SCIENCE COLLEGE, VIJAYAPUR
DEPARTMENT OF CHEMISTRY**



Second Internal Assessment Aug-2023

Semester: B. Sc. II	Subject: Chemistry – II (OEC)	Code: 21BSC102CHE2
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Date: 24/08/23	Time: 10.00am-11.00am	Max. Marks: 30
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Q. No. I	Answer any three of the following Questions.	2×3=6
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- a) What is Zwitter ion? Write its general structure.
- b) Define anomers and epimers with examples.
- c) Write the general formula of triglycerides.
- d) Give the methods to prevent rancidity of oils and fats.

Q. No. II	Answer any three of the following Questions.	4×3=12
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- a) What is isoelectric point? Explain its importance.
- b) Write a note on occurrence and general properties of glucose and fructose.
- c) Write a note on primary, secondary, tertiary and quaternary structure of proteins
- d) Draw the ring structure of lactose and maltose.

Q. No. III	Answer any three of the following Questions.	1×6=06
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- a) Describe the factors affecting enzyme action.
- b) What are inhibitors? Explain Competitive and Non-competitive inhibition.
- c) Briefly explain binding role of -OH and -NH₂ group.
- d) What are Lipids? Give the biological importance of Phospholipids and Cholesterol.



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Second Internal Assessment Aug-2023

Semester: B. Sc. II	Subject: Chemistry – II (DSC)	Code: 21BSC1C1CHE2L
Date: 23/08/23	Time: 1.30 pm-2.30 pm	Max. Marks: 30
Q. No. I	Answer any three of the following Questions.	2×3=6
a)	Define Resonance.	
b)	Define Racemic mixture and Racemisation.	
c)	What is the effect of weight and size of a molecule on viscosity?	
d)	How the Smectic liquid crystals classified?	
Q. No. II	Answer any three of the following Questions.	4×3=12
a)	Write the Postulates of VBT theory and VSEPR Theory.	
b)	Write the Different Theories of Acids and Bases.	
c)	Explain the determination of coefficient of viscosity using Ostwald viscometer.	
d)	Write the classification of liquid crystals and their applications.	
Q. No. III	Answer any three of the following Question.	1×6=06
a)	Draw the MOT (molecular orbital diagram) for CO and NO.	
b)	Write the interconversion of Sawhorse to Newman Projection with an example.	
c)	Elucidate structure of Benzene and Benzoquinone.	
d)	Explain the Cholesteric mesophase liquid crystals with structural elucidation.	



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Second Internal Assessment Aug-2023

Semester: B. Sc. IV

Subject: Chemistry – IV (DSC)

Code: 21BSC2C2CHE4L

Date: 22/08/23

Time: 4.15 pm-5.15 pm

Max. Marks: 30

Q. No. I **Answer any three of the following Questions.** **2×3=6**

- a) What are Nitrenes and give an example.
- b) State Nernst Distribution law.
- c) Calculate the bond order and predict magnetic property of He₂ molecule.
- d) Define Transport Number.

Q. No. II **Answer any three of the following Questions.** **4×3=12**

- a) How Product analysis help in identifying Reaction Mechanism.
- b) Explain the mechanism of Thin Layer Chromatography.
- c) Draw the MO diagram of N₂ ion. Calculate its bond order and predict magnetic property.
- d) Explain the determination of transport number by Moving Boundary Method.

Q. No. III **Answer any three of the following Question.** **1×6=06**

- a) Write a note on reactions of Nitrenes.
- b) Describe Continuous and Batch extraction.
- c) Explain the Valence band theory of metals.
- d) Define the Kohlrausch's Law, How to calculate Absolute Ionic mobilities and dissociation constant of weak electrolytes using Kohlrausch's Law?



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Second Internal Assessment Aug-2023

Semester: B. Sc. VI	Subject: Chemistry – P-II	Code: CHEDSET 6.1
Date: 23/08/23	Time: 12.00 pm-1.00 pm	Max. Marks: 20
Q. No. I	Answer any three of the following Questions.	2×2=4
a)	What are nutrients? How are they classified? Give two examples.	
b)	What are Antihistamines? Give one example.	
c)	Explain Pearson's concept of HSAB.	
d)	Define levelling effect.	
Q. No. II	Answer any three of the following Questions.	4×3=12
a)	Give the instrumentation method in the determination of Cu by electro gravimetric method.	
b)	Write the Structure and Synthesis of Paracetamol.	
c)	Explain the electronic transition of $[\text{Mn}(\text{H}_2\text{O})_6]^{2+}$ on the basis of Charge Transfer Spectra.	
d)	What are the reasons for high and low quantum efficiencies?	
Q. No. III	Answer any three of the following Question.	1×6=6
a)	What are Antibiotics? Write the Structure and Synthesis of Chloromycetine.	
b)	Explain the properties of non-aqueous solvent i.e. Liquid NH_3	



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Second Internal Assessment Aug-2023

Semester: B. Sc. VI

Subject: Chemistry – P-I

Code: CHEDSET 6.1

Date: 22/08/23

Time: 3.00 pm-4.00 pm

Max. Marks: 20

Q. No. I

Answer any three of the following Questions.

2×2=4

- a) Mention any two advantages of organic reagents over inorganic reagents.
- b) List the Essential and Trace elements in biological process.
- c) Define isoelectric point.
- d) Write the statement of Frank-Condon Principle.

Q. No. II

Answer any three of the following Questions.

4×3=12

- a) Explain the synthesis of Citral.
- b) Explain the Structure and Function of Haemoglobin.
- c) Write the synthesis of dipeptide (Bergmann synthesis).
- d) What is selection rule? Explain the qualitative description of selection rule.

Q. No. III

Answer any three of the following Question.

1×6=6

- a) Explain the Structure and Function of Chlorophyll.
- b) Explain the experimental verification of Davisson-Germer experiment.