647510

BSc4CheC0401 Seat No: _____

B.Sc. Semester - 4 (CBCS) Examination
March/April- 2018
CHEMISRTY
(CORE)

Time: 2:30 Hours **Marks: 70**

Instructions:
1. All questions are compulsory.
2. Figures to the right indicate marks.

Que-1	(A)	Answer the following questions.	(04)
	(1)	What is general chemical formula of Grignard reagent ?	
	(2)	Complete the chemical reaction K2[PtC14] + C2H4 → _____ + _____.	
	(3)	Which Conformational isomer of Ferrocene is more stable ?	
	(4)	What is the role of Hemoglobin in biological system ?	
Que-1	(B)	Answer any One question.	(02)
	(1)	What is organometalic compound ? Give two examples.	
	(2)	Explain toxicity of Arsenic in short.	
Que-1	(C)	Answer any One question.	(03)
	(1)	What is the importance of chlorophyll ?	
	(2)	Discuss Physical Properties of organolithium compounds.	
Que-1	(D)	Answer any One question.	(05)
	(1)	Write short note on Trimethyl Aluminium.	
	(2)	Give brief account of the structure of hemoglobin.	
Que-2	(A)	Answer the following questions.	(04)
	(1)	What is the hybridization of Xenon trioxide ?	
	(2)	Give IUPAC name of Adipic acid.	
	(3)	Give Structure of malonic ester.	
	(4)	Which noble gas is used for treatment of cancer ?	
Que-2	(B)	Answer any One question.	(02)
	(1)	Give preparation of Ethyl aceto acetate.	
	(2)	Give two application of Xenon and Krypton.	
Que-2	(C)	Answer any One question.	(03)
	(1)	Give uses of Noble gases.	
	(2)	Write systhesis of Butyric acid and Valeric acid from Ethyl aceto acetate.	
Que-2	(D)	Answer any One question.	(05)
	(1)	Explain reduction, hydrolysis and bromination reaction of Ethyl aceto acetate.	
	(2)	Discuss compounds of noble gases.	
Que-3	(A)	Answer the following questions.	(04)
	(1)	Give IUPAC name of acetone.	
	(2)	Give the Product of chemical reaction between acetaldehyde and ammonia.	
	(3)	Arrange acidic strength in increasing order ICH_2COOH, FCH_2COOH, $Cl.CH_2COOH$, $Br.CH_2COOH$.	
	(4)	Write chemical formula of thionyl chloride.	
Que-3	(B)	Answer any One question.	(02)
	(1)	Explain acidic hydrolysis of Nitrile.	
	(2)	Write Physical properties of Aidehyde and Ketone.	

Que-3	(C)	Answer any One question.	(03)
	(1)	Give preparation of aldehyde from acetyl chloride and nitriles.	
	(2)	Discuss decarboxylation of carboxylic acid.	
Que-3	(D)	Answer any One question.	(05)
	(1)	Explain reduction reaction of Aldehydes and Ketones.	
	(2)	Explain acidity of carboxylic acids.	
Que-4	(A)	Answer the following questions.	(04)
	(1)	Which catalysts are used in the Beckmann rearrangement?	
	(2)	Density is Velocity properties.	
	(3)	SI Unit of surface tension is dyne / gram / cm	
	(4)	Define Molar Volume.	
Que-4	(B)	Answer any One question.	(02)
	(1)	Describe factors affecting on viscosity.	
	(2)	Give reaction mechanism of Benzil-Benzilic acid rearrangement.	
Que-4	(C)	Answer any One question.	(03)
	(1)	Explain with mechanism : Perkin reaction.	
	(2)	What is Parachor ? Prove that $\frac{P1}{P2} = \frac{VM1}{VM2}$ (Where P÷parachor and V_M∴Molar Volume)	
Que-4	(D)	Answer any One question.	(05)
	(1)	Write short note an optical activity.	
	(2)	Explain Witting reaction.	
Que-5	(A)	Answer the following questions.	(04)
	(1)	Define Path function.	
	(2)	Define calorie.	
	(3)	Define cyclic process.	
	(4)	Define extensive property.	
Que-5	(B)	Answer any One question.	(02)
	(1)	Explain zeroth law of thermodynamics.	
	(2)	Write limitation of thermodynamics.	
Que-5	(C)	Answer any One question.	(03)
	(1)	Write short note on Internal energy.	
	(2)	Give difference between reversible and irreversible process.	
Que-5	(D)	Answer any One question.	(05)
	(1)	Define heat capacity and Prove that C_P-C_V=R.	
	(2)	Write in detail Joule Thomson effect.	

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647510 BSc4CheC0401 Seat No: _____

B.Sc. Semester - 4 (CBCS) Examination
March/April- 2019
CHEMISRTY
(CORE)

Time: 2:30 Hours **Marks: 70**

Instructions:
1. All questions are compulsory.
2. Figures to the right indicate marks.

Q. 1 (A) Answer the following question. **(4)**
(1) Explain toxicity of Mercury.

Q.1 (B) Answer the following questions. (Any two) **(10)**
(1) Give the classification of organometallic compounds based on nature of M-C bond.
(2) Discuss Zeise salt in details.
(3) Discuss roll of Hemoglobin in biological system.

Q. 2 (A) Answer the following question. **(4)**
(1) Give synthesis of Ethyl acetoacetate by Claisen condensation with reaction mechanism.

Q. 2 (B) Answer the following questions. (Any two) **(10)**
(1) Explain preparation and structure of $XeOF_4$.
(2) Discuss use of noble gases.
(3) Give only synthesis of Butyric acid and Adipic acid from Ethyl acetoacetate.

Q. 3 (A) Answer the following question. **(4)**
(1) Give the preparation of aldehyde from Acetyl chloride and Nitriles.

Q. 3 (B) Answer the following questions. (Any two) **(10)**
(1) Explain Clemmensen and Wolff-Kishner reduction of Carbonyl compound.
(2) Write preparation of monocarboxylic acid from hydrolysis of acid derivatives.
(3) Discuss effect of substituents on acidity of carboxylic acid.

Q. 4 (A) Answer the following question. **(4)**
(1) Explain Optical activity in details.

Q. 4 (B) Answer the following questions. (Any two) **(10)**
(1) Discuss Perkin reaction with mechanism.
(2) State the name of method to determine surface tension. Explain Drop weight method for determination of surface tension.
(3) Discuss application of dipole moment.

Q. 5 (A) Answer the following question. **(4)**
(1) Give four statement of first law of thermodynamics.

Q. 5 (B) Answer the following questions. (Any two) **(10)**
(1) Describe the relation between, (a) Temperature & volume (b) Pressure & volume (c) Pressure &temperature for adiabatic process.
(2) Discuss Joule – Thomson Effect.
(3) Calculate the work done, heat absorbed and change in internal energy, when one mole of an ideal gas at 27 ^{0}C is allowed to expand reversibly at constant temperature from a volume of 15 liters to 30 liters. [R = 8.314]

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B.Sc. Semester - 4 (*CBCS*) Examination

March/April– 2019

CHEMISTRY (CORE)

Time: 2:30 Hours **Marks: 70**

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate marks.

Que-1(A) Answer the following question. (04)

(1) Discuss the role of hemoglobin in biological system.

Que-1(B) Answer any two question out of three. (10)

(1) Describe structure of Ferrocene.

(2) Discuss Zeise salt in detail.

(3) Discuss the toxic effect of arsenic and mercury.

Que-2(A) Answer the following question.. (04)

(1) Explain uses of noble gases.

Que-2(B) Answer any two question out of three. (10)

(1) Explain preparation, properties and structure of X_eF_4

(2) Explain preparation of Ethyl aceto acetate.

(3) Explain synthesis of Crotonic acid.

Que-3(A) Answer the following question. (04)

(1) Write a note on Wolf-Kishner reduction.

Que-3(B) Answer any two question out of three. (10)

(1) Describe any two methods for the oxidation of carbonyl compounds.

(2) Write a note on acidity of carboxylic acid.

(3) Explain synthesis of mono carboxylic acid.

Que-4(A) Answer the following question. (04)

(1) Explain Perkin reaction.

Que-4(B) Answer any two question out of three. (10)

(1) Write a note on Aldol condensation.

(2) Write a note on dipole moment.

(3) Write a note on optical activity.

Que-5(A) Answer the following question. (04)

(1) Explain Zeroth law of thermodynamics

Que-5(B) Answer any two question out of three. (10)

(1) Explain first law of thermodynamics.

(2) Write a note on Joule-Thomson effect.

(3) Define the following.

(i). Isothermal process.

(ii). Adiabatic process.

(iii). Reversible process.

(iv). Irreversible process

(v). Isobaric process

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