NOTIFICATION

No. : 209/2022 Date: 22 /12/2022

Subject : Changes in syllabus of Chemistry practical of B.Sc. (Sem -I to II).

It is notified for general information of all concerned that authorities of the University has approved the changes in the syllabi of practical of Chemistry prescribed in Prospectus of B.Sc. Part-I (Sem-I to II) bearing No.2022121 under Choice Based Credit System from the Academic Session 2022-2023. The syllabi prescribe for Laboratory/practical/practicum/hand-on activity of Chemistry Sem-I & II printed on page Nos.65 to 66 & page No.70 to 71 be substituted by the **Appendix-A** appended with this Notification."

Sd/-
(Dr.T.R..Deshmukh)
Registrar
Sant Gadge Baba Amravati University

Appendix-A

Syllabus Prescribed for three Year UG Programme
Programme: B.Sc. with Chemistry

Semester 1

Code of the Course/Subject	**Title of the Course/Subject** (Laboratory/Practical/practicum/hands-on/Activity)	**(No. of Periods/Week)**
CHE(1S)PR	**Chemistry 1S**	**Total 26 per Semester**

COs

At the end of Lab/Practical course, students will be able to -

1. Synthesise different types of organic compounds.
2. Perform the process of filtration, crystallization, melting point, waste management.
3. Understand the effect of orientation effect of a group
4. Skilfully determine the surface tension, viscosity of liquid.
5. Predict the endothermic or exothermic process from heat of solution of a salt.

*** List of Practical/Laboratory Experiments/Activities etc.**

Exercise-1 Organic Preparations	
1	Preparation of Acetyl derivative of aromatic primary amine (aniline or toluidine).
2	Preparation of Benzanilide (Benzoylation).
3	Preparation of Benzoic acid from Benzamide (Hydrolysis).
4	Preparation of Benzoic acid from benzaldehyde (Oxidation).
5	Preparation of phenyl–azo–β–naphthol dye (Diazotisation)
6	Base catalysed Aldol Condensation (Synthesis of dibanzalpropanone).
7	Preparation of p-nitroacetanilide from acetanilide.
Exercise II: Physical Chemistry Experiments	
8	Determination of surface tension of a given liquid using Stalagmometer
9	Determination of the parachor value of $-CH_2-$ group (methylene) using Stalagmometer
10	Determination of coefficient of viscosity of aqueous solution of ethanol or polymer at room temperature
11	Determination of unknown percentage composition of given glycerol solution from standard 2%, 4%,6%,8% and 10% solutions of glycerol
12	Determination of the heat of solution of KNO_3 (5% solution)

Note:

a) Student should perform the single stage preparation with the help of given procedure.
b) Melting point and percentage yield should be reported.
c) The sample should be submitted.
d) Students should recrystalize the sample with suitable solvent.
e) Students should know the reaction and its mechanism of givensingle stage preparation.

Distribution of Marks for Practical Examination
Time: 4 hours (One Day Examination) Marks: 50
Exercise-I* …….. 18
Exercise-II* …….18
Viva-Voce …….07
Record …….. 07
Total: 50

***Note: One practical from respective exercise**

Semester 2

Code of the Course/Subject	Title of the Course/Subject (Laboratory/Practical/practicum/hands-on/Activity)	(No. of Periods/Week)
CHE(2S)PR	**Chemistry 2S**	**26 per Semester**

COs

At the end of Lab/Practical course, students will be able to -

1. Analyse the given organic compound qualitatively by different tests.
2. Prepare the derivative of the provided substance.
3. Illustrate the practical skills in volumetric analysis.
4. Differentiate types of titrations e.g. acid-base, redox, etc.
5. Comprehend the kinetics of reactions and interpret the experimental data.
6. Calculate, communicate and analyse the result.

*** List of Practical/Laboratory Experiments/Activities etc.**

Exercise I: Organic Qualitative Analysis	
	Complete analysis of simple organic compounds (like urea, thiourea, benzoic acid, Salicylic acid, oxalic acid, glucose, naphthalene, para-toluidine, benzamide, etc.) containing one or two functional groups involving following steps. i) Preliminary examination ii) Detection of elements iii) Detection of functional groups iv) Determination of melting point v) Preparation of derivative and determination of its melting point vi) Performance of spot test, if any
1	Qualitative analysis of compound-1
2	Qualitative analysis of compound-2
3	Qualitative analysis of compound-3
4	Qualitative analysis of compound-4
5	Qualitative analysis of compound-5
Exercise II: Volumetric Analysis	
6	To determine the strength of oxalic acid by titration with $KMnO_4$.
7	To determine strength of FAS by titration with $KMnO_4$ using internal indicator.
8	Determination of temporary hardness of water sample.
9	Estimation of Zn^{++} ions by complexometric titration.
10	Prepare 0.1NH2SO4 solution and find out its exact normality using NaOH as an intermediate solution and 0.1N oxalic acid as a standard solution.
11	Determination of order of reaction of hydrolysis of methyl acetate by an acid.
12	To study kinetics of saponification of ethyl acetate by NaOH.

Distribution of Marks for Practical Examination
Time: 4 hours (One Day Examination) Marks: 50
Exercise-I* …….. 18
Exercise-II* …….18
Viva-Voce …….07
Record …….. 07
Total: 50
***Note: One practical from respective exercise**

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