



Mula Education Society's

ARTS, COMMERCE AND SCIENCE COLLEGE, SONAI

Tal. Newasa, Dist- Ahmednagar – 414105



Ph.: 02427-231384 Email: sonaicollege@yahoo.co.in, mesacscollege@gmail.com Website: www.acssonaicollege.com

Affiliated to Savitribai Phule Pune University, Pune (I.D.PU/AN/ASC/031/1989)

NAAC Re-accredited with 'A' Grade, DBT Star College Scheme, ISO 9001: 2015 Certified, AISHE Code – C-42096

SUPPORTING DOCUMENTS FOR Metric No. 1.1.2

1.1.2 Curriculum planning and implementation

1.1.2 The institution adheres to the academic calendar including for the conduct of CIE



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ACA- R-04

Academic Year: 2022-23

Rev: 00

Academic Calendar 2022-2023

Annual

Date: 15/06/2018

First Term : 20 June 2022 to 30 November 2022**Second Term : 26 December 2022 to 4 May 2023****Mid Term Break : 26 August to 28 August 2022****Diwali Vacation : 22 October to 30 October 2022****Winter Break : 30 November 2022 to 25 December, 2022****Academic Terms and Examination Schedule:**

S.N.	Academic Terms and Examination	Tentative Dates
1.	Commencement of Lectures (SEM I/III/V)	20 June, 2022 (SEM III/V) (SEM I) will be notified separately
2.	Internal Examinations	14 to 21 November 2022
3.	Semester end examination (SEM I/III/V)	As per the university schedule
4.	Commencement of Lectures (SEM II/ IV/ VI)	26 Dec., 2022 (SEM II/ IV/ VI)
5.	Internal Examinations	13 to 20 Feb. 2023
6.	Semester end examination (SEM II / IV / VI)	As per the university schedule
Extra-Curricular Activities		
7.	Celebration of International Yoga Day	21/06/2022
8.	Celebration of Rajarshi Shahu Maharaj Birth Anniversary	26/06/2022
9.	IIC Activity (Program attended online): A Session on Out of the Thinking for Problem Solving	28/06/2022
10.	International Conference on Changing Prospective in Environmental Management, Humanities, and Science & Technology	04 to 15/07/2022
11.	Celebration of Bhaurao Sathe's Death Anniversary	18/07/2022
12.	IIC Activity: Seminar on IPR Awareness Program by Ujjwal Jaipal Singh	25/07/2022
13.	IIC Activity: A Session on Innovation / Prototype Validation – Converting Innovation into a Startup	25/07/2022
14.	Celebration of Kargil Din by NCC Unit of the College	26/07/2022



15.	Faculty Development Program on Entrepreneurship, Innovation and Incubation	29-30/07/2022
16.	IIC Activity: A Workshop on Prototype Design and Development by Ms. Chaitali Kshirsagar	30/07/2022
17.	IIC Activity: A Workshop on Intellectual Property Rights and IP Management for Startup	04/08/2022
18.	IIC Activity: A Webinar on Business Model Canvas by Bharati Nawlani	05/08/2022
19.	IIC Activity: A Session on Problem Solving and Ideation for Yukti 2.0 Contest	06/08/2022
20.	Celebration of 75th Independence Day	15/08/2022
21.	Celebration of Dahihandi Program by Students	19/08/2022
22.	Celebration of World Entrepreneurs' Day	21/08/2022
23.	National Webinar Series on the occasion of Bicentenary Birth Anniversary of Gregor Mendel – Dept. of Botany	23/08/2022
24.	Celebration of Teacher's Day	05/09/2022
25.	A Webinar on Accuracy of the Mahabharata Imagery – Dept. of English & Research Centre	15/09/2022
26.	A National Webinar on the occasion of Birth Bicentennial Celebration of GERGOR J. MENDEL on the Importance of Mutations in Crop Improvement and Crop Protection	22/09/2022
27.	NAAC SSR Submission	Fourth Week of October
28.	Constitution Day or Law Day (India)	26/11/2022
29.	World Aids Day	01/12/2022
30.	National Youth Day Birth Anniversary of Swami Vivekanand	12/01/2023
31.	National Voters Day	25/01/2023
32.	Republic Day of India	26/01/2023
33.	NSS Winter Camp	Second Week of February
34.	National Science Day	28/02/2023
35.	Yashsharada Annual Program & Prize Distribution Ceremony	Last Week of February

Note:

- The details for curricular, extra-curricular activities would be displayed on the college notice board from time to time.
- Dates of the meetings of administrative and other committees shall be noticed from time to time.
- Holidays shall be in accordance with Savitribai Phule Pune University, Pune and Govt. of Maharashtra.

IQAC Coordinator

Principal



2. Master Time Table

Master Time Table Science (Chemistry)

Mula Education Society's
Arts, Commerce & Science College, Sonai
Department of Chemistry (P.G.)

ACA – R- 22

Rev : 00

Date: 15/06/2018

DEPARTMENTAL TIME TABLE (P.G.) THEORY

M.Sc.-I & II [Organic & Analytical] Chemistry

Academic Year: 2022-23 (Term - II)

Semester: II & IV

Ref. Ref: MES/ACSC/ACA/ /

Date: 10 / 02 / 2023

Time	Class	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1.30pm To 2.30pm	M.Sc.-I	CHG – 290 C (I) KAS	CHO-250 (II) KPD	CHP-210 KAS	CHP-210 KAS	CHP-210 KAS	CHI-230 KPD
	M.Sc.-II (Organic Chemistry)	CHO-451 SVS	CHO-450 PVM	CHO-452 A KPS	CHO-450 PVM	CHO-452 A KPS	CHO-451 SVS
	M.Sc.- II (Analytical Chemistry)	CHA-491 KMB	CHA-490 LMB	CHA-492 A TSN	CHA-492 A TSN	CHA-491 KMB	CHA-490 LMB
2.30pm To 3.30pm	M.Sc.-I	CHO-250 (II) KPD	CHG – 290 C (I) KAS	CHO-250 (I) ABC	CHI-230 KPD	CHI-230 KPD	CHP-210 KAS
	M.Sc.-II (Organic Chemistry)	CHO-452 A KPS	CHO-451 SVS	CHO-451 SVS	CHO-452 A KPS	CHO-450 PVM	CHO-450 PVM
	M.Sc.- II (Analytical Chemistry)	CHA-490 LMB	CHA-492 A TSN	CHA-490 LMB	Cyber Security-IV KMB	Skill Development-II LMB	CHA-491 KMB
3.30pm To 3.40pm	SHORT RECESS						
3.40pm To 4.40pm	M.Sc.-I	CHO-250 (I) ABC	Human Rights-II KAS/XYZ	--	--	CHI-230 KPD	Cyber Security-II KPS/ABC
	M.Sc.-II (Organic Chemistry)	--	--	Cyber Security-IV PVM	--	Skill Development-II SVS	--
	M.Sc.- II (Analytical Chemistry)	--	--	CHA-491 KMB	--	--	CHA-492 A TSN

M.Sc. – I Classroom No. 36

M.Sc. – II Organic Chemistry - Classroom No. 38

M.Sc. - II Analytical Chemistry - Classroom No.39

1. Prof. Pawar V.M. (PVM).
5. Prof. Miss. Sose V.S. (SV)

2. Prof. Smt. Lande M.B. (LMB)
6. Prof. Miss. Kale A.S. (KAS)
3. Prof. Smt. Kadam M.B. (KMB)
7. Prof. Miss. Kank P.S. (KPS)

4. Prof. Kardile P.D. (KPD)
8. Prof. Miss. Tarde S.N. (TSN)

HEAD

Vice Principal
Mula Education Society's
Arts, Commerce & Science College, Sonai
Tal. Newasa, Dist. Ahmednagar Pin 414105Principal
Mula Education Society's
Arts, Commerce and Science College
Sonai, Tal. Newasa, Dist. Ahmednagar



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Master Time Table Commerce



Mula Education Society's
Arts, Commerce & Science College, Sonai.

Department of Commerce (UG)

ACA – R- 21	Master Time Table (Master Time Table, Faculty wise for Theory & Practical)	Academic Year: 2022-23
Rev : 00		Semester: I /III
Date: 15.06.2018		

Ref: Ref: MES/ACSC/ACA/ /

Date:

Sr.No	Time	Class	Room No.	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1.	8.00 am to 8.50 am	FYBCom	31	Marketing	Marketing	Marketing	Marathi	Marathi	Marathi
		SYBCom	32/12	B.C	B.C	B.C	Bank/Mar-I	Bank/Mar-I	Bank/Mar-I
		TYBCom	35	A/c	A/c	A/c	Aud & Tax	Aud & Tax	Aud & Tax
2.	8.50 am to 9.40 am	FYBCom	31	F. English	F. English	F.English	Fin.A/C	Fin.A/C	Fin.A/C
		SYBCom	32	C. Law	C. Law	C.Law	B.M.	B.M.	B.M.
		TYBCom	35/12	Ind. Eco	Ind.Eco	Ind.Eco	BRF	BRF	BRF
9.40 a.m. to 9.50 am SHORT- RECESS									
3.	9.50 am to 10.40 am	FYBCom	31	Bus.Eco	Bus. Eco	Bus.Eco	Math & Stat	Math & Stat	Math & Stat
		SYBCom	32	Corporate. A/C	Corporate. A/C	Corporate.A/C	Bus.Eco	Bus.Eco	Bus.Eco
		TYBCom	35/12	Bank/Mar-II	Bank/Mar-II	Bank/Mar-II	Bank/Mar-III	Bank/Mar-III	Bank/Mar-III
4.	10.40 am to 11.30 am	FYBCom	31	Banking	Banking	Banking	Marathi	VAC	B.Eco
		SYBCom	32	C.Law	B.Eco	Corporate.A/C	B.C.	Bank/Mar-I	B.M.
		TYBCom	35/12	A/c	Bank-II	I.Eco	Bank/Mar-III	Aud & Tax	B.R.F.
5.	11.30 am to 12.20 pm	FYBCom	31	Marketing	AOC	AOC	Banking	Math & Stat	Fin. A/c
		SYBCom	32	AECC Env. A (AOC)	AECC Env. A (AOC)	-	-	AOC	VAC
		T.Y.B.Com	35	-	Marketing-II	AOC	VAC	-	-
6.	12.20 pm to 1.10 pm	F.Y.B.Com		-	COC	Democracy, Election and Governance	-	F.English	--

S. Boudal

In charge

[Signature]

Vice Principal

Mula Education Society's
Art's, Commerce & Science College
Sonai, Tal. Newasa, Dist. Ahmednagar, Pin-414105

[Signature]
PRINCIPAL

Mula Education Society's
Arts, Commerce & Science College, Sonai
Tal. Newasa, Dist. Ahmednagar Pin 414105



Master Time Table Arts



Mula Education Society's Arts, Commerce & Science College, Sonai. Arts Faculty

ACA – R–21 Rev : 00 Date: 15.06.2018

Time Table

Academic Year: 2022-23 Semester: I/III/V

With Effect From : July 2022

Table with columns: Sr., Time, Class, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday. Rows include course details for various classes like FYBA, SYBA, TYBA across different time slots.

SEC=Skill Enhancement Course, AOC=Add-On Course, VAC= Value-Add Course& MIL= Modern Indian Languages.

In-charge signature

Vice-Principal signature and stamp

Principal signature and stamp

3. Teaching Plan Sample Teaching Plan Dept. Chemistry

ACA-D-01

Rev.: 00 Date: 15.06.2018

ISO 9001:2015

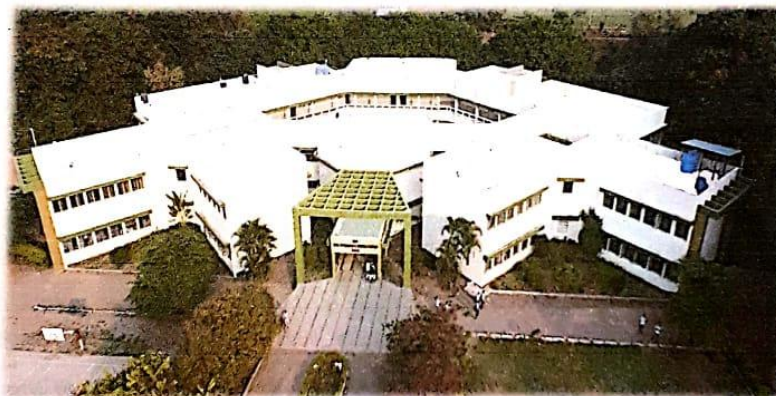
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ARTS, COMMERCE & SCIENCE COLLEGE, SONAI

TAL-NEWASA, DIST- AHMEDNAGAR



TEACHER DIARY

Academic Year – 2022-23

Name of Teacher : Kank Pratiksha Sanjay.
Designation : Assistant Professor.
Department : Chemistry.

ACA-B-08		Teaching Plan and Implementation Record		Academic Year: 2022-23	
Rev: 00		Annual			
Date: 15/06/2018					
Class: M.Sc.-II		Subject: Organic Chemistry		Course No: CHO-353(A)	
Month	Topic and Sub-topic	Period allotted	Conduction Date	Methodology used	Remark
NOV.	8) Chair		03/11/22		
(11)	9) The structure of glucose.				
	10) The anomeric configuration.		07/11/22		
	11) Mutarotation.		08/11/22		
	12) Conformations of monosaccharide.		10/11/22		
	13) Anomeric effect.		14/11/22	Chalk Talk	
	2) Synthesis of Glycosides.			PPT	
	1) Glycosyl donor		15/11/22		
	2) Glycosyl acceptor concept.				
	2) General methods for glycosyl bond formation.		16/11/22		
	a) Glycosyl halide		28/11/22		
	b) Glycosyl bromide		29/11/22		
	c) Glycosyl fluoride		30/11/22		
DEC.	d) Glycosyl iodide				
(12)	e) Glycosyl chloride		01/12/22		
	3) Trihaloacetinides.				
	5) Glycols and Glycol derivative.		02/12/22		
	6) Thioglycosides.				
	7) phosphites.				

ACA-B-08		Teaching Plan and Implementation Record		Academic Year: 2022-23	
Rev: 00		Annual			
Date: 15/06/2018					
Class: M.Sc.-II		Subject: Organic Chemistry		Course No: CHO-353(A)	
Month	Topic and Sub-topic	Period allotted	Conduction Date	Methodology used	Remark
	8) n-pentyl glycosides		08/12/22		
	9) Sulfoxides		12/12/22		
	10) Alkylation of Reducing sugar.				
	4) Synthesis of Disaccharide, Trisaccharide and polysaccharide -		13/12/22	Chalk Talk	
	1) stereoselective synthesis of Mannosides.		14/12/22	ICT PPT	
	2) synthesis of 2-Deoxy sugar.				
	3) Orthogonal strategy in oligosaccharide synthesis.		15/12/22		


Vice Principal
 Mula Education Society's
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Sample Teaching Plan BBA

ACA-D-01

Rev.: 00 Date: 15.06.2018

ISO 9001:2015

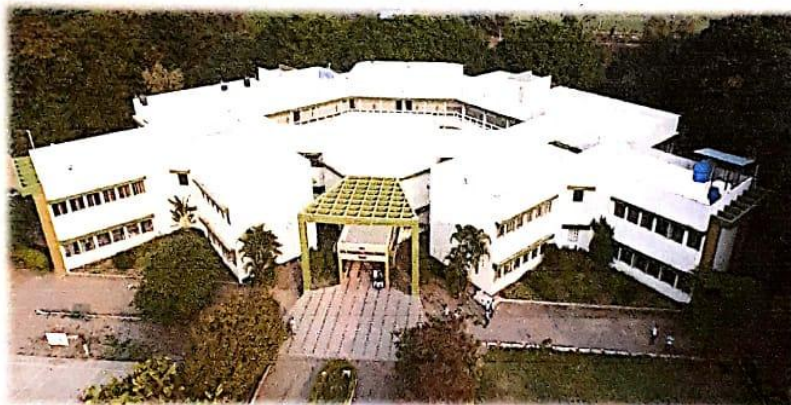
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ARTS, COMMERCE & SCIENCE COLLEGE, SONAI

TAL- NEWASA, DIST- AHMEDNAGAR



TEACHER DIARY

Academic Year – 2022-23

Name of Teacher : Hurule Sudanshan Vijay
Designation : Assistant Professor
Department : BBA



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ACA-R-08					Academic Year: 2022-23	
Rev. 00					Annual	
Date: 15/06/2018						
Class: 5-Y BBA		Subject: Finance Service		Course No.:		
Teaching Plan and Implementation Record						
Topics & Total lectures allotted			Conduction Date	Methodology used	Remark	
Month	Topic and Sub-topic	Period allotted				
	Unit: 1	10				
Feb	Introduction		1 Feb			
	Equity and Preference share		4 Feb			
	Capital		6,7 Feb			
	Finance service		8 Feb			
			10, 11 Feb			
	Source of Capital		13 Feb			
	Indian Financial System		14, 15 Feb	Chalk P.P.T and ICI		
	Financial interrelationships in financial system		21, 22 Feb	Talk	tools	
	Merchant Banker		23, 24 Feb			
Mar	Depositors, Brokers, Banker		1, 2 Mar			
			13 Mar			
			14 Mar			
	Unit: 2	14	15, 16 Mar			
	Fundamentals of Financial Market Function		17 Mar			
			20, 21 Mar			
	Role of Economic development		21, 24 Mar			
			25 Mar			
	Secondary market		27 Mar			
			28 Mar			
	Function, Role in Economic Market		31 Mar			

ACA-R-08					Academic Year: 2022-23	
Rev. 00					Annual	
Date: 15/06/2018						
Class:		Subject:		Course No.:		
Teaching Plan and Implementation Record						
Topics & Total lectures allotted			Conduction Date	Methodology used	Remark	
Month	Topic and Sub-topic	Period allotted				
April	Issue & Management IPO		8 Apr			
	Stocks Exchange		4, 7 Apr			
	BSE Function		10 Apr			
	NSE Function		11 Apr			
	Unit: 3	14	12, 13 Apr			
	Financial Service in India		13, 14 Apr	Chalk P.P.T and ICI		
	Mutual Fund		18, 19 Apr	Talk	tools	
	Factor, Advantage, Disadvantage, Investment		21 Apr			
	Selection of best mutual fund, Venture Capital		24 Apr			
	Importance of Capital raising		25, 26 Apr			
	Agencies		27 Apr			
	Future and options		28, 29 Apr			
	Exchange traded		3 May			
May	Unit: 4	10	10 May			
	Computer laboratory work		9, 10 May			
	group discussion		10 May			
	Project training		12 May			
	group discussion		13, 15 May			
	Project training		11, 12, 13 May			



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Sample Teaching Plan Arts

ACA-D-01

Rev.: 00 Date: 15.06.2018

ISO 9001:2015

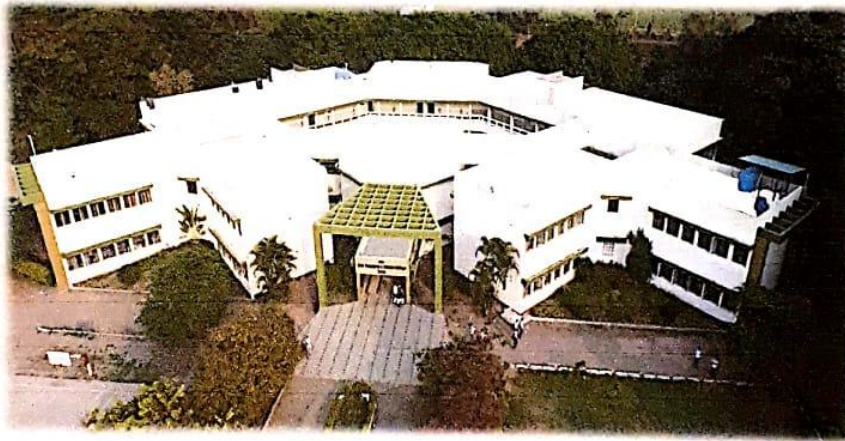
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ARTS, COMMERCE & SCIENCE COLLEGE, SONAI

TAL- NEWASA, DIST- AHMEDNAGAR



TEACHER DIARY

Academic Year – 2022-23

Name of Teacher : Dr. Sambhaji Sopanrao Darade
Designation : Asst. professor
Department : History



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ACA- R-08		Teaching Plan and Implementation Record		Academic Year: 2022-23	
Rev: 00		Annual			
Date: 15/06/2018		Class: SYBA		Subject: History of the Marathas (180-190)	
		Course No: CC-1C			
Topics & Total lectures allotted					
Month	Topic and Sub-topic	Period allotted	Conduction Date	Methodology used	Remark
Unit I	Sources and Rise of the Maratha Power	12			
	A) Literary Sources: Marathi	01	1/08/2022		
	Foreign Sources - French	01	2/08/22		
	Portuguese	01	3/08/22		
	English	01	04/08/22		
	B) Background of the rise of Maratha Power	04	15/08/22		
	- " -		22/08/22		
	- " -		23/08/22		
	- " -		24/08/22		
	C) Shahaji Raje, Rajmata Sijabai and Early life of Chhatrapati Shivaji Maharaj	04			
	Shahaji Raje	02	29/08/22	Chalk board	
	- " -		31/08/22	Stalk	
	Ji. Rajwade Ji. Rajwade	02	6/09/22	PPT	
	- " -		7/09/22	Tablet	
Unit II	Foundation of Swarajya to the Confederation - Maratha Expedition	16			
	a) Relations with Adilshah, Taval and Adilshah	04			
	Episode and its importance	02	13/09/22		
	- " -		13/09/22		
	Importance	02	14/09/2022		
	- " -		19/09/2022		
	b) Relations with Mughals: Campaign of Shajahan	02	20/09/22		
	- " -		21/09/22		
	Sack of Surat	02	27/09/22		
	- " -		29/09/22		
	Expedition of Jaisingh	02	30/09/22		

ACA- R-08		Teaching Plan and Implementation Record		Academic Year: 2022-23	
Rev: 00		Annual			
Date: 15/06/2018		Class: SYBA		Subject: History of the Marathas (180-190)	
		Course No: CC-1C			
Topics & Total lectures allotted					
Month	Topic and Sub-topic	Period allotted	Conduction Date	Methodology used	Remark
	Expedition of Jaisingh	02			
	Vish to Agra	01	04/10/22		
	- " -		10/10/22		
	c) Consolidation of Maratha Kingdom	04	11/10/22		
	Consolidation	02	11/10/2022		
	- " -		17/10/22		
	Karnataka Expedition	02	18/10/22		
	- " -		19/10/2022		
Unit III	Administration under Chhatrapati Shivaji Maharaj	03			
	a) Military	04	31/10/22		
	- " -		03/11/22		
	- " -		03/11/22		
	- " -		7/11/22		
	b) Civil	04	01/11/22		
	- " -		10/11/22		
	- " -		21/11/22		
Unit IV	Chhatrapati Sambhaji Maharaj and the Maratha Kingdom at Jajapur	12			
	a) Chhatrapati Sambhaji Maharaj	02	23/11/2022		
	Consolidation of Power	02	23/11/2022		
	- " -		23/11/2022		
	Relations with Mughals	02	28/11/2022		
	- " -		28/11/2022		
	b) Chhatrapati Rajaram Maharaj and Mughals	02	29/11/2022		
	- " -		30/11/2022		
	Maharaj Tarabai	02	27/11/2022		
	- " -		27/11/2022		
	c) Santaji Chhatrapati	01	01/12/22		
	Dhargaji Jadhav	01	01/12/22		
	Ranchhodraji Amaji	02	21/12/22		
	- " -		04/12/22		

4. Internal Exam Time Table (sample copy)

Internal Assessments time table and other documents

This can help to identify issues and receive feedback earlier in student's development process.

Mula Education Society's
Arts, Commerce & Science College, Sonai
Internal Test -Time Table April/May 2023
Arts Faculty

Day & Date	Class	Time 8.30-9.30 am	Time 10.00-11.00 am
Wednesday 26.04.2023	FYBA	Com English (11011)	(11172)History G1
	SYBA	Com English (23001)	24174History G2 (CC-2(3))
	TYBA	Com English (35001)	History G3(CC- 4(3))
Thursday 27.04.2023	FYBA	Politics G1 (11162A)	Marahi G1(11022)
	SYBA	Politics G2 (CC1C) (24164)	Marahi G2(CC- 1C)(24023)
	TYBA	Politics G3 (CC1E)	Marahi G3(CC-1F)
Friday 28.04.2023	FYBA	Hindi G1 (12092-1B)	11151Economics G1(11151)
	SYBA	Hindi G2(CC-1D)(24093)	12151 Economics- G2 (CC-1C)
	TYBA	Hindi G3 (CC-1F)	Economics -G3 (CC-1E)
Saturday 29.04.2023	FYBA	Geography G1 (110B) 12201	English G1(11331)
	SYBA	Geography G2 (CC-2C) 24205	English G2(SEC-1A)
	TYBA	Geography G3 (CC-1E)	English G3 (SEC.-1C)
Tuesday 02.05.2023	F.Y.B.A.	Democracy Election and Governance	
	S.Y.B.A.	Discipline specific Elective Courses – DSE1 B(3)	Discipline specific Elective Courses - DSE-2B(3)
	T.Y.B.A	Discipline specific Elective Courses – DSE-3C(3)	Discipline specific Elective Courses - DSE-4D(3)
Wednesday 03.05.2023	S.Y.B.A	Skill Enhancement Courses- SEC-2B (2) ----- (24025)Marathi –Upoyojic Lekhan Koushalay ----- (24096)Hindi- Madham	Modern Indian Languages MIL-2 (All Special) Marathi(24011) / Hindi(24012)


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Mula Education Society's
Arts, Commerce & Science College, Sonai
Time Table of Internal Examination for B.Com. - April 2023
INTERNAL EXAMINATION

Day & Date	Class	Time 8.30-9.30 am	Time 10.00-11.00 am
Wednesday 26.04.2023	FYB.Com	Com. English - II	Marathi
	SYB.Com	Business Communication -II	Banking and Finance-II / Marketing Management-II
	TYB.Com	Advanced Accounting-II	Bus. Regulatory Framework-II (M. Law)
Thursday 27.04.2023	FYB.Com	Business Economics -II	Business Mathematics and Statistics- II
	SYB.Com	Elements and Company Law II	Business Management-II
	TYB.Com	Indian and Global Economic Development –II	Auditing and Taxation -II
Friday 28.04.2023	FYB.Com	Marketing and Salesmanship-II	Financial Accounting -II
	SYB.Com	Corporate Accounting -II	Business Economics(Macro)- II
	TYB.Com	Banking and Finance II /Marketing Management II	Banking and Finance - III /Marketing Management - III
Saturday 29.04.2023	FYB.Com	Banking and finance -I	
Tuesday 02.05.2023	F.Y.B.Com	Democracy Election and Governance	

Important instructions:

- 1) It is compulsory to all the students to attend internal examination as per above timetable, as there will be no second internal examination.
- 2) The obtained marks in above internal examination will be treated final and submitted to University.
- 3) All the papers will be of 10 marks each.
- 4) Answers are to be written on the question paper itself.
- 5) Pattern of question paper will be as per rules of University.
- 6) For any clarification, students should contact their subject teachers.
- 7) The examination will be held in regular classrooms.


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Mula Education Society's
Arts, Commerce & Science College, Sonai
Time table of Internal Examination for B.Sc. (April 2023)
Semester II/IV/VI

Day & Date	Class	Period I 8.00-8.50	Period II 8.50-9.40	Period III 9.50-10.40	Period IV 10.40-11.30
Wednesday 26.04.2023	FYBSc	Zoo-I/ Maths-I	Zoo-II/ Maths-II	--	--
	SYBSc	--	--	Che – I	Che – II
	TYBSc	Paper – I	Paper – II	--	--
Thursday 27.04.2023	FYBSc	Phy – I/ Geo – I	Phy – II/ Geo – II	--	--
	SYBSc	--	--	Bot – I/ Maths – I	Bot – II/ Maths –II
	TYBSc	Paper – III	Paper – IV	--	--
Friday 28.04.2023	FYBSc	Che – I	Che – II	--	--
	SYBSc	--	--	Geo - I	Geo - II
	TYBSc	Paper – V	Paper – VI	--	--
Saturday 29.04.2023	FYBSc	Bot – I	Bot – II	--	--
	SYBSc	--	--	Zoo – I/ Phy – I	Zoo – II/ Phy – II
	TYBSc	SEC – III	SEC – IV	--	--
Tuesday 02.05.2023	SYBSc	Marathi/ English	--	--	--

Important instructions:

- 1) It is compulsory to all the students to attend internal examination as per above time table, as there will be no second internal examination.
- 2) The obtained marks in above internal examination will be treated final and submitted to University.
- 3) All the papers will be of 10 marks each.
- 4) Answers are to be written on the question paper itself.
- 5) Pattern of question paper will be as per rules of University.
- 6) For any clarification, students should contact their subject teachers.
- 7) The examination will be held in regular classrooms.



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Mula Education Society's
Arts, Commerce & Science College, Sonai
Department of Chemistry (P.G.)

ACA – R-28

Rev : 00

Date: 15/06/2018

Test Time Table

Academic Year: 2022 – 23 (Term-II)

Semester: II & IV

Ref: MES/ACSC/ACA/ /

Date: 26/04/2023

M.Sc. Part –I & -II (Organic & Analytical) Chemistry (Credit Pattern 2019)
Internal Theory Examination Time Table

Students of M.Sc. Part –I & -II (Organic & Analytical) Chemistry (Credit Pattern 2019) are informed that their *Internal Theory Examination* will be conducted from **08th May to 10th May 2023**. The Examination will be conducted according to the norms of Savitribai Phule Pune University Examination.

Instructions to the Students:

- Students should be present half an hour before the exam.
- Students will not be allowed for exam without Identity card & dress code.
- No Rexam will be conducted for the absent students.
- Examination will be of **20 marks; Time: 1 hr.**

Pattern of Question Paper:

There will be two sections for each paper. Each section will be of 10 marks and the pattern of question paper shall be:

Question 1 (3 Marks)	3 compulsory sub-questions, each of 1 mark; (such as define, short problem, draw the structure / neat labeled diagram, short reasons, characteristics, applications, etc.)
Question 2 (4 Marks)	2 out of 4 –descriptive answer type questions of 2 marks each; answerable in sufficient length like write notes
Question 2 (3 Marks)	1 out of 2 – numerical problem type question; spectral analysis, how you will apply your knowledge to solve particular problem, etc. types of question.

Sr.No.	Date	Time	M.Sc.-I (Organic & Analytical) Chemistry	M.Sc.-II (Organic Chemistry)	M.Sc.-II (Analytical Chemistry)
1	08/05/2023	12.00 pm to 01.00 pm	CCTP-4 CHP-210	CCTP-10 CHO-450	CCTP-10 CHA-490
		02.00 pm to 03.00 pm	CCTP-5 CHI-230	CCTP-11 CHO-451	CCTP-11 CHA-491
2	09/05/2023	12.00 pm to 01.00 pm	CCTP-6 CHO-250	CBOP-4 CHO-452 A) Theory	CBOP-4 CHA-492 A) Theory
		02.00 pm to 03.00 pm	CBOP-2 CHG-290 C) (Sec-I: Theory)	--	--
3	10/05/2023	12.00 pm to 01.00 pm	Cyber Security - II	Cyber Security-IV	
		02.00 pm to 03.00 pm	Human Rights - II	Skill Development-II	


Head
Department of Chemistry
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College, Sonai, Tal. Newasa,
Dist. Ahmednagar - 414105


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Mula Education Society's
Arts, Commerce & Science College, Sonai
Department of Chemistry (P.G.)ACA – R-28
Rev : 00
Date: 15/06/2018

Test Time Table

Academic Year: 2022 – 23 (Term-II)

Semester: II & IV

Ref: MES/ACSC/ACA/

Date: 26/04/2023

M.Sc. Part –I & -II (Organic & Analytical Chemistry) (Credit Pattern 2019)
Internal Practical Examination Time Table

Students of M.Sc. Part –I & -II (Organic & Analytical Chemistry) (Credit Pattern 2019) are informed that their *Internal Practical Examination* of following practical courses will be conducted on **04th May 2023**. The Examination will be conducted according to the norms of Savitribai Phule Pune University Examination.

• *Instructions to the Students:*

- Students should report before 30 min in laboratory.
- Students will not be allowed for exam without Identity card, apron, certified journal & dress code.
- Practical Books are not allowed during examination.
- No Rexam will be conducted for the absent students.


Sr.No.	Date	Time	M.Sc.-I (Organic & Analytical) Chemistry	M.Sc.-II (Organic Chemistry)	M.Sc.-II (Analytical Chemistry)
1	11/05/2023	08.30 am to 11.30am	CBOP-2 CHG-290 A) (Sec-II: Practical)	CBOP-5 CHO-453 Practical-III (Sec-I & Sec-II)	CBOP-5 CHA-493 A) Practical-III
		12.30pm to 03.30pm	CCPP-2 CHP-227 Basic Practical Chemistry-II	CCPP-4 CHO-454 Practical-II	CCPP-4 CHA-494 Practical-II

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5. Internal Test Question paper (sample copy)


Mula Education Society's
Arts, Commerce & Science College, Sonai.
Department of Chemistry

ACA – R -29	Academic Year: 2022-23	
Rev : 00	Internal Test	Semester: II
Date: 15.06.2018	CHO-452A	Date: 09/05/2023
Class: M.Sc. Organic Chemistry	Concepts and Applications of Medicinal Chemistry.	Time: 12:00 To :01:00
Sub.: CHO-452(A)		Max. Marks: 20

Section - I

Q.1) Define / Explain **3M**

1. Define: Protein.
2. Define: Medicinal Chemistry.
3. Define: Coenzyme.

Q.2) Write a Short Note On (Attempt any TWO) **4M**

- i) Protein as a biological catalyst
- ii) Solid phase peptide synthesis
- iii) Biological Application of Folic Acid
- iv) Write Hansch equation and explain terms involved in it.

Q.3) Answer the Following (Attempt any One) **3M**

- i) Draw structure of oxamniquine and explain its mechanism of action.
- ii) Explain Proton Pump Inhibitor



Mula Education Society's
Arts, Commerce & Science College, Sonai.

Department of Chemistry

ACA – R -29

Rev : 00

Date: 15.06.2018

Class: M Sc. 1.

Sub.: CHI 130

Question Paper
Internal test

Academic Year: 2022-23

Annual /Semester: I

Date: 22/11/2022 Time:12.00

Max. Marks: 20 marks

Section-I

Instructions: 1. all questions are compulsory

Q1. Attempt the following (compulsory) 03 Marks

1. Which principal axis is present in NiCl_4 ?
2. Define Improper axis of symmetry?
3. Define Symmetry elements?

Q2. Attempt the following (any TWO) 04 Marks

1. Explain all symmetry elements and symmetry operations in NH_3 ?
2. Explain all symmetry elements and symmetry operations in XeOF_4 ?
3. Determine the point group of Ethylene molecule?
4. Determine the point group of Boric Acid molecule?

Q3. Attempt the following (any ONE) 03Marks

1. Explain all symmetry elements and symmetry operations in CH_4 molecule?
2. Explain all symmetry elements and symmetry operations in SF_6 molecule?

Section-II

Q4. Attempt the following (compulsory) 03 Marks

1. Define Electron Deficient Compound?
2. Define Electron Rich Compound?
3. Define Electron Precise Compound?

Q5. Attempt the following (any TWO) 04 Marks

1. Define acid by arrenius theory?
2. Define Interhalogen Compound?
3. Define Pseudohalogens?
4. Explain in brief about Diamond allotrope?

Q6. Attempt the following (any ONE) 03Marks

5. Explain Interhalogen Compound with suitable examples?
6. Explain Pseudohalogen Compound with suitable examples?

**6. Internal Exam Attendance sheet (sample copy)**

ACA – R -29		Mula Education Society's Arts, Commerce & Science College, Sonai.		Department of Physics	
Rev : 00	Date: 15.06.2018	Class: M.Sc. - II	Internal Exam March/April - 2023	Academic Year: 2022-23	Annual /Semester: IV
Sub.: PHOT – 244H4	Energy Studies - II			Time: 12:00 pm to 01:00 pm	Marks: 10
				Date :- 09 /05/2022	

Sr. No.	Roll No.	Name of Student	Student Sign	Marks
1.	01	Aghade Rutuja Vilas	<i>Aghade</i>	05
2.	02	Barhate Rutuja Eknath	<i>Barhate</i>	06
3.	03	Darandale Uday Patilba	<i>CS</i>	07
4.	04	Dhere Akash Bapurao	<i>Dhere</i>	05
5.	05	Gade Ankita Shashikant	<i>Ankita</i>	06
6.	06	Gawali Shivani Jayant	<i>Gawali</i>	06
7.	07	Ghodechor Dyaneshwari Namdev	<i>Ghodechor</i>	06
8.	08	Kajale Shital Abasaheb	<i>Kajale</i>	08
9.	09	Kardile Pranali Satish	<i>Kardile</i>	07
10.	10	Lande Pratiksha Dinkar	<i>Lande</i>	06
11.	11	Latpate Rushikesh Ramkisan	<i>Latpate</i>	07
12.	12	MisalVaishnavi Janardhan	<i>Misal</i>	05
13.	13	Sawai Sarita Mohan	<i>Sawai</i>	07
14.	14	Tekale Vaishnavi Sambhaji	<i>Tekale</i>	07
15.	15	Toge Ganesh Ashok	<i>Toge</i>	05
16.	16	Devtarse kaveri Babasaheb	<i>Devtarse</i>	08

Supervisor's Name	No. of Student			Sign
	Appeared	Present	Absent	
Miss. Darandale A.A.	16	16	00	<i>DarandaleAA.</i>

Test Co-ordinator



Mula Education Society's

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Tal. Newasa, Dist- Ahmednagar – 414105



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Mula Education Society's
Arts, Commerce & Science College, Sonai.

Department of Physics

Subject Teacher Name	No. of Student			Sign
	Pass	Fail	% Pass	
Prof Shinde R.S.	16	00	100%	

HOD

**7. Internal marks with signs (sample copy)**

Mula Education Society's Arts, Commerce & Science College, Sonai. Department of Chemistry							
ACA – R -30 Rev : 00 Date: 15.06.2018 Class: M.sc- II(organic Chemistry) Sub- CHO-452(A)		Mark List CHO-452(A) Concepts and Application of Medicinal Chemistry			Academic Year: 2022-23 Semester: IV Max. Marks: 30		
Ref: Ref: MES/ACSC/ACA/ /							
Sr. No.	Name of The students	Internal (Mark-10)	Seminar and PPT (Mark-10)	Assignment (Mark-5)	Short Quize (Mark-5)	Total (Out of 30)	Sign.
1.	AUTI MANISHA RAMKISAN	06	05	03	04	18	Auti
2.	BACHKAR SACHIN ASHOK	04	04	03	05	16	Bachkar
3.	BANKAR JAYASHRI BABASAHEB	07	08	04	05	24	Jayashri
4.	BANKAR PRATIKSHA RANGNATH	04	04	02	05	15	Pratiksha
5.	BELHEKAR VAISHNAVI RAMESH	06	04	03	05	18	VB
6.	BHAGWAT MANGESH SANJAY	04	05	03	05	17	Mangesh
7.	BHALERAO SNEHAL VITTHAL	04	04	03	03	14	Snehal
8.	BHAWAR SANKET VIJAY	04	07	04	05	20	Sanket
9.	BORHADE MAYUR ASHOK.	04	07	04	05	20	Mayur
10.	CHAVAN SHUBHANGI NITIN	07	03	03	05	18	Shubhangi
11.	DAHATONDE RUTUJA SANJAY	04	04	03	04	15	Rutuja
12.	DARANDALE NAVNATH NAMDEV	04	04	02	03	13	Navnath
13.	DARANDALE VAIBHAV SUNIL	04	04	02	05	15	Vaibhav
14.	DESHMUKH AARTI RAJENDRA	06	08	04	05	23	Aarti
15.	DEVHARE SAGAR GORAKSHNATH	04	02	02	04	12	Sagar
16.	DHALE SAGAR ASHOK	06	04	03	05	18	Sagar
17.	DHANWATE AKSHDA ANNASAHEB	07	08	04	05	24	Akshda
18.	DHUMAL GAYATRI SANDIP	05	04	03	05	17	Gayatri
19.	GADAKH KSHITIJ ANIL	04	04	03	04	15	Kshitij
20.	GADAKH SHRIKRUSHNA SANJAY	04	03	02	05	14	Shrikrushna
21.	GADAKH SUDARSHAN BABASAHEB	04	03	02	05	14	Sudarshan
22.	GAIKWAD SAURABH RAMESH	08	08	05	05	26	Saurabh
23.	GAIKWAD SHITAL BABASAHEB	09	08	05	05	27	Shital
24.	GITE RAHUL BHAGWAN	04	03	02	04	13	Rahul



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25.	GOSAVI MAHESH SUNIL	04	07	04	05	20	Nahesh
26.	GUDADHE SHIWETA MITTHU	05	06	04	03	18	Shuchi
27.	JADHAV RUSHIKESH DHARMARAJ	04	03	03	04	14	Rushikesh
28.	JARE DIGAMBAR BHAUSAHEB	04	04	03	05	16	Dare
29.	JARE PANKAJ BABASAHEB	04	03	00	05	12	Pankaj
30.	KALE SNEHAL SUBHASH	09	08	05	05	27	Snehal
31.	KUNDE SHEETAL RAMRAO	08	08	04	05	25	Sheetal
32.	KURHE JAYDIP DILIP	04	04	02	04	14	Jaydip
33.	KURHE SAURABH ASHOK	04	05	03	05	16	Saurabh
34.	MAGAR PRAVIN HARIBHAU	05	05	04	04	18	Magar
35.	MARADE ARPIT BANDU	05	05	05	05	20	Arpit
36.	MORE MANGESH BALASAHEB	04	04	00	04	12	MBS
37.	MORE PRATIKSHA SARJERAO	07	07	04	05	22	Pratiksha
38.	MUSMADE AMRUTA ASHOK	07	04	03	05	19	Amruta
39.	ROTHE SACHIN NANASAHEB	06	04	03	05	18	Sachin
40.	SANAP AMOL BHAUSAHEB	04	03	02	04	13	Amol
41.	SAPTE AMOL DNYANDEO	04	03	01	04	12	Sapate
42.	SATRE MAHESH VISHNU	05	04	03	05	17	Satre
43.	SHINDE SHUBHAM SADANAND	05	04	03	05	17	Shubham
44.	SOMVANSHI NILAM GANESH	07	07	04	05	23	Nilam
45.	TARAWADE ARTI SANJAY	Ab	Ab	Ab	Ab	Ab	-
46.	TODMAL GANESH DILIP	05	07	04	05	21	Todmal
47.	TUWAR KIRAN RAMBHAU	05	07	04	05	21	Tuwar
48.	WAGH VAISHNAVI BABASAHEB Wagade Pooja Pratikram	04	04	02	02	12	Wagade
49.	ZINE PRITI PRAKASHI	04	04	03	05	16	Pooja



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Mula Education Society's
Arts, Commerce & Science College, Sonai.

Department of Chemistry

Supervisor's Name	No of students			Sign
	Appeared	Present	Absent	
Miss. Kank P. S.	49	48	01	
Total	49	48	01	

Subject Teacher Name	No of students			Sign
	Pass	Fail	% Pass	
Miss. Kank P. S.	48	01		

Test Coordinator

HOD
Head
Department of Chemistry
Arts, Commerce & Science
College, Sonai, Tal. Newasa,
Dist. Ahmednagar - 414105

**Internal record of Oral (Department History)****Mula Education Society's
Arts, Commerce & Science College, Sonai.****Department of History**

ACA – R - 31	Term work Submission Report	Academic Year: 2022-23
Rev : 00		Annual /Semester: III
Date:		

Ref: MES/ACSC/ACA/ /
Class: SY.B.A.Date
Sub : Medieval Indian Art
and Architecture

Sr. No.	Name of the Student	Test @15	Assignment @5	Oral @5	Total @25
1.	BADE AMOL AJINATH				
2.	BELHEKAR PRATIKSHA BABASAHEB	13	4	3	20
3.	BHAGWAT MALHARI VASANT	12	—	4	16
4.	CHAUDHARI MANDIP PRALHAD				
5.	DAHATONDE SIDDHI VILAS	12	4	4	20
6.	DARADE RENUKA DILIP	12	4	4	20
7.	DARANDALE SAGAR VISHNU	12	—	04	16
8.	DARANDALE VAIBHAV BABASAHEB	11	—	04	15
9.	DARANDALE VAISHNAVI MADHAV				
10.	DHERE RUTUJA DATTATRAY	13	4	3	20
11.	DIKE MONALI ASHOK	13	4	4	21
12.	GARJE PRANJALI BABASAHEB	12	—	04	16
13.	GAYAKE ARATI VITTHAL	13	4	4	21
14.	GHUGARKAR SUVARNA KASHINATH	13	4	4	21
15.	JARE VISHAL SANJAY	8	—	04	12
16.	KADAM POOJA SHANTARAM	13	4	4	21
17.	KEDARI KAJAL ASHOK				
18.	KOKATE SUVARNA ASHOK	13	4	4	21
19.	KONGE SIDDHARTH ASHOK				
20.	KUSALKAR ATISH RAJU				
21.	KUSALKAR NIKHIL SOMNATH				
22.	KUSALKAR ROHIT VASANT				
23.	KUSALKAR SONALI MACHINDRA	13	4	4	21



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Mula Education Society's
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Department of History

24.	LAHORE YOGITA SHIVAJI	12	4	4	20
25.	MOKASHI SAMARTHA SANJAY	13	4	4	21
26.	MUNGASE SAURABH SANJAY	06	04	4	14
27.	MUSALE GANESH SHIVAJI	10	4	04	18
28.	PALVE MANOHAR VISHNU	10	3	4	17
29.	PUND MONIKA SANTOSH	13	4	4	21
30.	RODGE ROHIT RAJENDRA				
31.	SASANE OMKAR SANJAY	10	—	04	14
32.	SAWANT ABHIJIT SANTARAM	12	4	3	19
33.	SHEKADE AKSHAY POPAT	12	—	04	16
34.	SHENDKAR KRUSHNA BABAN				
35.	SHETE NIKITA ASHOK	12	4	4	20
36.	SONAWANE HARISH KARBHARI				
37.	VAIRAGAR PRATIK SANJAY	12	—	04	16
38.	WADAGALE SHUBHAM ASHOK	12	—		16
39.	WAGHADE GAURAV LAXMAN				
40.	WAKADE MAHESH KONDIRAM				
41.	WAVARE KANIFNATH RAJENDRA	11	—	04	15
42.	Telore Dipika sidaram	13	4	4	21
43.					
44.					
45.					
46.					
47.					

[Signature]

Head
Department of History
Arts, Commerce & Science
College, Sonai, Tal. Newasa,
Dist. Ahmednagar - 414105



Internal marks displayed on noticeboard

**Internal marks uploaded on university portal for final result**

Savitribai Phule Pune University

Examination Session 2023

Marks Inward System for Colleges



2306270251228

6/27/2023

1 of 1

College Name	CAAA016340 - MULA EDUCATION SOCIETY'S ARTS, SCIENCE & COMMERCE COLLEGE		
Pattern Name	22519 - M.Sc. ORGANIC CHEMISTRY (REV.2019)	Batch No	202304088489
Subject Name	33423A - CBOP-4 CHO-452 A)MEDICINAL CHEMISTRY	Exam Type	INTERNAL OUT OF 30
Teacher Name	Kank Pratiksha Sanjay (Mob. No.: 8625018191) - Internal Examiner		

Total Students	Present Students	Absent Students	Not Applicable	Detained
49	48	1	0	0

Seat No	Marks/Grade	Seat No	Marks/Grade
334568	18	334593	16
334569	16	334594	13
334570	24	334595	27
334571	15	334596	25
334572	18	334597	15
334573	17	334598	16
334574	14	334599	18
334575	20	334600	20
334576	20	334601	13
334577	18	334602	22
334578	15	334603	19
334579	14	334604	18
334580	15	334605	13
334581	23	334606	13
334582	13	334607	17
334583	18	334608	17
334584	17	334609	23
334585	15	334610	(AB)
334586	14	334611	21
334587	14	334612	21
334588	26	334613	12
334589	13	334614	16
334590	20	334615	24
334591	18	334616	27
334592	15		

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8. Sample of Assignment Submission

Assignment no: 1

Q.1] Attempt the following:

a) State the Arrhenius equation and explain the terms there in?

Ans → The Arrhenius eqⁿ is,

$$k = A e^{-E_a/RT}$$

Where,

- k = rate of chemical reaction
- A = Constant
- E_a = Activation energy.

b) Distinguish betⁿ molecularity and order of reaction.

Ans →

Molecularity	Order
1) The total no. of atoms or molecules involved in the chemical reaction is given by stoichiometric chemical eq ⁿ is known as molecularity of reaction.	1) The sum of exponents and power in the rate of reaction is called order of reaction.
2) It is an experimental property.	2) It is an experimental property.
3) Molecularity of react ⁿ is never zero or fractional it is always an integer.	3) Order of reaction can be zero or fractional.
4) Molecularity of react ⁿ does not change with environ-	4) Order of reaction changes with atmospheric

Ans → Given: $t_{1/2} = 2.5 \times 10^3 \text{ sec.}$

$$x = \left(\frac{1}{2}\right)^{t/t_{1/2}} = \left(\frac{1}{2}\right)^{100} = 20\%$$

$$a = 100$$

$$k = ?$$

$$t = ?$$

$$k = \frac{0.693}{t_{1/2}} = \frac{0.693}{2.5 \times 10^3}$$

$$k = 2.772 \times 10^{-4}$$

$$k = \frac{2.303}{t} \log \frac{a}{a-x}$$

$$t = \frac{2.303}{k} \log \frac{a}{a-x}$$

$$t = \frac{2.303}{2.772 \times 10^{-4}} \log \frac{100}{100-20}$$

$$= 8.3080 \times 10^5 \log \frac{100}{80}$$

$$= 8.3080 \times 10^5 \cdot \log 10$$

$$= 8.3080 \times 10^5 \cdot \log 10$$

$$t = 8.3080 \times 10^5$$

Q.2] Attempt of the following

a) Obtain an expression for velocity constant of a 1st order reaction at equilibrium in terms of rate coefficients.

Ans → Consider a general reaction,

$$A \rightarrow \text{product} \quad t=0, a, \quad t=t, x$$

Let the initial conc. of reactant 'A' be 'a' mole/l.
'x' is conc. of product at time 't'.
'a-x' is conc. of reactant at time 't'.
Thus,

Rate of reaction = $-\frac{d[A]}{dt} = k[A]$ ----- (1)

Substitute conc. of reactant A with (a-x) w.r.t. rate of reactⁿ

$$-\frac{d(a-x)}{dt} = k(a-x)$$

$$-\frac{da}{dt} + \frac{dx}{dt} = k(a-x)$$

$$0 + \frac{dx}{dt} = k(a-x)$$

$$\frac{dx}{dt} = k(a-x)$$

By rearrange above eqⁿ.

$$\frac{dx}{(a-x)} = k \cdot dt \text{ OR}$$

$$k \cdot dt = \frac{dx}{(a-x)}$$

- This eqⁿ is only applicable for time 't' and conc. (a-x). For wide changing and time integrate above eqⁿ limit as,

$$k \int_0^t dt = \int_0^x \frac{dx}{(a-x)}$$

$$k \left[dt \right]_0^t = \left[\frac{dx}{a-x} \right]_0^x$$

$$k \cdot t = [-\ln(a-x) + \ln a]$$

$$k \cdot t = \ln a - \ln(a-x)$$

$$k = \frac{1}{t} \ln \frac{a}{a-x}$$

$$k = \frac{2.303}{t} \log \frac{a}{a-x}$$

tal condition. | condition in gas phase reactⁿ.

c) Define consecutive and parallel reaction with suitable example?

Ans → Consecutive reaction

It is defined as reaction is proceed from reactant to product to one or more intermediate state.

e.g. $A \xrightarrow{k_1} B \xrightarrow{k_2} C$

Parallel reaction

"The reaction in which a substance or reactant decompose more than one or more intermediate way is called as parallel or side reaction".

eg: $A \xrightarrow{k_1} B$
 $A \xrightarrow{k_2} C$

d) What is difference between unstable intermediate and an activated complex?

Ans → An unstable intermediate is an actual chemical species. It has normal bond order. It may be stabilized under the different reaction condition. Activated complex is postulated species which has maximum energy during the inversion from reactant to product.

e) Half-life of a 3rd order reaction is 2.5×10^3 sec. How long will it take for 1/8th of the reactant to be left behind.

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$$\therefore \frac{dx}{a} = e^{-k_1 t} \dots \dots (3)$$

eqⁿ (3) is called exponential eqⁿ. i.e. conc of reactant A fall exponential with time B.

1) For rate of formation, $\frac{dy}{dt} = k_1 x$

2) For rate decomposition, $\frac{dy}{dt} = -k_2 y$

\therefore Net reaction,
 $\frac{dy}{dt} = k_1 x - k_2 y$

Multiply above eqⁿ with -ve sign.
 $-\frac{dy}{dt} = -k_1 x + k_2 y$
 $-\frac{dy}{dt} = k_2 y - k_1 x \dots \dots (4)$

put eqⁿ (3) in eqⁿ (4)
 $-\frac{dy}{dt} = k_2 y - k_1 a e^{-k_1 t} \dots \dots (5)$

Eqⁿ (5) is called linear differential eqⁿ of 1st order eqⁿ is.
 $y = \frac{k_1 a}{k_2 - k_1} (e^{-k_1 t} - e^{-k_2 t}) \dots \dots (6)$

- If there is no change in no. of moles, i.e. sum of moles A, B, and C = Initial moles of reactant at time t. A of time t = 0.

$x + y + z = a$
 $z = a - x - y \dots \dots (7)$

put eqⁿ (6) in eqⁿ we get.

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Where k is the velocity constant.
 These eqⁿ is known as integrated form of first order reaction.

b) Derive the expression for the half life of an nth order reaction.

Ans \rightarrow Half-life period - (t_{1/2})
 We know that
 $k = \frac{1}{t(n-1)} \left[\frac{1}{(a-x)^{n-1}} - \frac{1}{a^{n-1}} \right]$

By rearrange above equation we get.
 $t = \frac{1}{k(n-1)} \left[\frac{1}{(a-x)^{n-1}} - \frac{1}{a^{n-1}} \right]$

For 50% react, t = t_{1/2} and than above eqⁿ x = a/2 becomes.
 $\therefore t_{1/2} = \frac{1}{k(n-1)} \left[\frac{1}{(a-a/2)^{n-1}} - \frac{1}{a^{n-1}} \right]$

$\therefore t_{1/2} = \frac{1}{k(n-1)} \left[\frac{1}{(a/2)^{n-1}} - \frac{1}{a^{n-1}} \right]$

$\therefore t_{1/2} = \frac{1}{k(n-1)} \left[\frac{2^{n-1}}{a^{n-1}} - \frac{1}{a^{n-1}} \right]$

$\therefore t_{1/2} = \frac{1}{k(n-1)} \left[\frac{2^{n-1} - 1}{a^{n-1}} \right]$

$\therefore t_{1/2} \propto \frac{1}{a^{n-1}}$

c) How does the concentration of intermediate be obtained in the case of consecutive reaction. A \rightarrow B \rightarrow C.

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* Ans \rightarrow Consecutive reaction -
 The reaction which proceed from reactant to product into one or more intermediate state - Consider a reaction.

	A	$\xrightarrow{k_1}$ B	$\xrightarrow{k_2}$ C
Initial time (t=0)	a	0	0
time (t)	x	y	z

\therefore The rate of decomposition of reactant A $\frac{dx}{dt} = -k_1 x$

Multiply above eqⁿ with -ve sign E
 $-\frac{dx}{dt} = k_1 x$

By rearrange the eqⁿ.
 $-\frac{dx}{x} = k_1 dt$

Integrate above eqⁿ without limit,
 $-\int \frac{dx}{x} = k_1 \int dt + c$

$-\ln x = k_1 t + c \dots \dots (1)$

Hence at time t=0, x=a then
 \therefore eqⁿ (1) become.
 $-\ln a = k_1 \cdot 0 + c$
 $c = -\ln a \dots \dots (2)$

put eqⁿ (2) in eqⁿ (1)
 $-\ln x = k_1 t - \ln a$
 $\therefore -\ln x + \ln a = k_1 t$
 \therefore multiply with -ve sign.
 $\ln x - \ln a = -k_1 t$
 $\ln \left(\frac{x}{a} \right) = -k_1 t$

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$\therefore z = a \cdot a e^{-k_1 t} - \frac{k_1 a}{k_2 - k_1} (e^{-k_1 t} - e^{-k_2 t}) \dots$

Q. 3. solve the following.

a) In the comprehensive eqⁿ for a certain reaction the values of A & E_a are $4 \times 10^{13} \text{ sec}^{-1}$ and 98.6 kJ mol^{-1} respect. If the reaction is of the 1st order at what temp. will it's half life be 10 minutes?

Ans \rightarrow Given:
 $A = 4 \times 10^{13} \text{ sec}^{-1}$
 $E_a = 98.6 \text{ kJ mol}^{-1}$
 $t_{1/2} = 10 \text{ minutes} = 10 \times 60 = 600 \text{ sec.}$
 $k = \frac{0.693}{t_{1/2}}$
 $k = \frac{0.693}{600}$
 $k = 1.155 \times 10^{-3}$
 $k = A \cdot e^{-E_a/RT}$
 $\log k = \frac{A - E_a}{RT}$
 $\log (1.155 \times 10^{-3}) = \frac{4 \times 10^{13} - 98.6}{8.314 \times T}$
 $-2.9374 = \frac{4 \times 10^{13} - 98.6}{8.314 \times T}$
 $\therefore T = \frac{4 \times 10^{13} - 98.6}{8.314 \times (-2.9374)}$
 $T = \frac{4 \times 10^{13} - 98.6}{-24.4216}$
 $T = \frac{4 \times 10^{13} + 4.0374}{-24.4216}$
 $T = 400.40$
 $T = 400.40$



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Q. In a 1st order reaction the reactant concentration by two third in a millisecond. In how much time will it be reduced to one ninth?

Ans → Given:
t = millisecond = 1000 sec
a = 1
a-x = 2/3

Formula -
$$k_1 = \frac{2.303}{t} \log \frac{a}{a-x}$$

$$= \frac{2.303}{1000} \log \frac{1}{2/3}$$

$$= 2.303 \times 10^{-3} \log 1.5$$

$$= 2.303 \times 10^{-3} \times 0.1760$$

$$k_1 = 4.0532 \times 10^{-4}$$

$$(a-x) = 1/9 = \frac{a}{a-x} = ?$$

$$k_1 = \frac{2.303}{t} \log \frac{a}{a-x}$$

$$t = \frac{2.303}{4.0532 \times 10^{-4}} \log \frac{9}{1}$$

$$t = \frac{2.303}{4.0532 \times 10^{-4}} \log 9$$

$$= 5681.93 \times 0.9542$$

$$t = 5421 \text{ sec.}$$

(c) Chlorofluro oxide (CFO) decays according to the second order rate law. If the initial concⁿ is $2.5 \times 10^{-5} \text{ mol}^{-1}$. Calculate the half life and concⁿ after 4 minutes.
[Rate constant $k = 2.25 \times 10^{-7} \text{ mol}^{-1} \text{ s}^{-1}$]

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Ans → Given:-
 $a = 2.5 \times 10^{-5} \text{ mol}^{-1}$
 $k = 2.25 \times 10^{-7} \text{ mol}^{-1} \text{ s}^{-1}$
t = 4 minute
 $= 4 \times 60 = 240 \text{ sec}$
t/2 = ?
x = ?

Formula.
i) t/2 = 1/a.k
$$t/2 = \frac{1}{2.5 \times 10^{-5} \times 2.25 \times 10^{-7}}$$

$$t/2 = \frac{1}{662.5}$$

$$t/2 = 1.777 \times 10^{-3} \text{ sec.}$$

ii) $k = \frac{1}{a \cdot t} \cdot \frac{x}{(a-x)}$
 $x = (a-x) \cdot k \cdot a \cdot t$
 $x = 2.5 \times 10^{-5}$

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Assignment no. 2

Q1 Attempt the following.

1) For the parallel reaction, $A \xrightarrow{k_1} B$, $A \xrightarrow{k_2} C$
 $A \rightarrow D$. Determine the concentration of B, C, and D

Ans → Parallel reaction:-
"The reaction in which a substance or reactant decompose than one way is called as parallel or side reaction."
- Such reaction gives more than one independent product.

$$A \begin{cases} \xrightarrow{k_1} B \\ \xrightarrow{k_2} C \end{cases}$$

- If one of the reaction utilize major portion of the reactant it is called main reaction and other is called side reaction.
If $k_1 \gg k_2$ then,
 $A \rightarrow B$ main reaction — (1)
 $A \rightarrow C$ side reaction — (2)

From above eqⁿ
- The rate eqⁿ for 1st reaction becomes, hence,
 $\frac{d[A]}{dt} = -k_1 [A]$ or
 $-\frac{d[A]}{dt} = +k_1 [A]$ (3)

For second reaction
 $\frac{d[A]}{dt} = -k_2 [A]$ or
 $-\frac{d[A]}{dt} = k_2 [A]$ (4)

From eqⁿ (3) & (4) the net reaⁿ becomes,
 $-\frac{d[A]}{dt} = k_1 [A] + k_2 [A]$ (5)

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Here both reaction follows simple first order differential form in,
 $[A] = a \cdot e^{-(k_1+k_2)t}$ (6)

For product B & C
 $\frac{d[B]}{dt} = k_1 [A]$ (7)
 $\frac{d[C]}{dt} = k_2 [A]$ (8)

put eqⁿ (6) in eqⁿ (7) and (8)
 $\frac{d[B]}{dt} = k_1 \cdot a \cdot e^{-(k_1+k_2)t}$ (9)
 $\frac{d[C]}{dt} = k_2 \cdot a \cdot e^{-(k_1+k_2)t}$ (10)

by rearrange and integrate (9) and (10)
 $[B] = \frac{k_1 \cdot a}{k_1 + k_2} (1 - e^{-(k_1+k_2)t})$ (11)

Similarly,
 $[C] = \frac{k_2 \cdot a}{k_1 + k_2} (1 - e^{-(k_1+k_2)t})$ (12)

by taking reaction of eqⁿ (11) and (12) we get,
 $\frac{[B]}{[C]} = \frac{k_1}{k_2}$ (13)

2) Consider the reaction mechanism,
 $A + B \xrightarrow{k_1} C$ (1)
 $C \xrightarrow{k_2} D$ (2)

Write the expression of $\frac{d[P]}{dt}$ the rate of product formation, assuming equation is established.

shed. In the 1st order reaction before any appreciable amount of product is formed. OR
Explain pre-equilibrium approximation show that $\frac{d[P]}{dt} = k_p [A]^2 [B]$ for the following reaction.

$A + B \xrightleftharpoons[k_b]{k_a} I, I + B \xrightarrow{k_p} P$ where I is an intermediate?

Ans → The rate formation of equilibrium and rate of decomposition eq^m is faster than rate of formation of product.

Consider a redⁿ.
 $A + B \xrightleftharpoons[k_b]{k_a} AB \xrightarrow{k_p} P$
here, pre-equilibrium arises.
i.e. $\frac{k_a}{k_b} > k_p$.

From above redⁿ rate for forward reaction
 $\frac{d[A]}{dt} = -k_a [A] [B]$

Rate for backward reaction.
 $\frac{d[A]}{dt} = k_b [AB]$ eq^m

The net reaction are
 $\frac{d[A]}{dt} = k_a [AB] eq^m - k_b [A] [B]$

hence, above eqⁿ becomes,
 $k_a [AB] eq^m = k_b [A] [B] = 0$
 $k_a [AB] eq^m = k_b [A] [B]$
 $\frac{k_a}{k_b} = \frac{[AB]}{[A] [B]} eq^m$
 $k = \frac{[AB] eq^m}{[A] [B]}$ ----- ①
 $[AB] eq^m = k [A] [B]$, where $\frac{k_a}{k_b} = k$.

Thus, rate for product formation becomes,
 $\frac{d[P]}{dt} = k_p [AB] eq^m$ ----- ②
 $\frac{d[P]}{dt} = k_b k [A] [B]$

put eqⁿ in ② and ①
 $\therefore \frac{d[P]}{dt} = k [A] [B]$ ----- ③

Where, $k_b k = k$
in eqⁿ ③ eq^m is not involve hence, pre-equilibrium follows 2nd order kinetics.

3) Obtain the expression for rate constant for 2nd order reaction. When reactants in concentration.

Ans → Consider a reaction,
 $A + B \rightarrow \text{product}$
rate of reaction = $-\frac{d[A]}{dt} = k [A] [B]$ ----- ①

If (a-x) and (b-x) are the concentration of reactant time t, then above eqⁿ becomes,
rate of reaction = $-\frac{d(a-x)}{dt}$
 $\frac{dx}{dt} = k (a-x) (b-x)$ ----- ②

by rearranging eqⁿ
 $k \cdot dt = \frac{dx}{(a-x)(b-x)}$ ----- ③
by rearranging eqⁿ.

$k \cdot dt = \frac{dx}{(a-b) \left[\frac{1}{(b-x)} - \frac{1}{(a-x)} \right]}$
 $k \cdot dt = \frac{1}{(a-b)} \left[\frac{dx}{(b-x)} - \frac{dx}{(a-x)} \right]$ ----- ④

For wide change in concentration integrate above eqⁿ with limit, we get,
 $k \int_0^t dt = \frac{1}{(a-b)} \left[\int_0^x \frac{dx}{(b-x)} - \int_0^x \frac{dx}{(a-x)} \right]$

$k \cdot dt = \frac{1}{(a-b)} \left[[-\ln(b-x)]_0^x - [-\ln(a-x)]_0^x \right]$
 $k \cdot t = \frac{1}{(a-b)} \left[-\ln(b-x) + \ln b + \ln(a-x) - \ln a \right]$
 $k \cdot t = \frac{1}{(a-b)} \left[\ln b + \ln(b-x) + \ln b + \ln(a-x) - \ln a \right]$
 $k \cdot t = \frac{1}{(a-b)} \left[\ln b + \ln(a-x) - \ln a - \ln(b-x) \right]$
 $k \cdot t = \frac{1}{(a-b)} \left[\ln \frac{b(a-x)}{a(b-x)} \right]$
 $k = \frac{1}{t(a-b)} \ln \frac{b(a-x)}{a(b-x)}$

$k = \frac{2.303}{t(a-b)} \log \frac{b(a-x)}{a(b-x)}$ ----- ⑤

eqⁿ (5) is a expression for velocity constant with unequal initial concentration.

Q2. Solve the following.

a) Calculate energy of activation for a reaction if rate of the reaction is doubled by changing the temperature from 27°C to 37°C?

Ans → Given :-
 $T_1 = 27^\circ C = 27 + 273 = 300 K$
 $T_2 = 37^\circ C = 37 + 273 = 310 K$
if rate of reaction is doubled
 $k_2 = 2k_1$
 $E_a = ? / R = 8.314 J$

Formula :-
 $\log \frac{k_2}{k_1} = \frac{E_a}{2.303R} \left[\frac{T_2 - T_1}{T_1 T_2} \right]$
 $\log \frac{2k_1}{k_1} = \frac{E_a}{2.303} \left[\frac{310 - 300}{300 \times 310} \right]$
 $\log 2 = \frac{E_a}{2.303} \left[\frac{10}{93000} \right]$
 $0.3010 = \frac{E_a}{2.303} \left[\frac{10}{93000} \right]$
 $0.3010 = \frac{E_a}{2.303} \times 1.0752 \times 10^{-4}$
 $E_a = \frac{0.3010 \times 2.303}{1.0752 \times 10^{-4}}$
 $E_a = \frac{0.693205}{1.0752 \times 10^{-4}}$
 $E_a = 6447.20$

b) Show that in every 1st order redⁿ time required for 75% completion of reaction is double the half life period.

Ans → Given :-
 $a = 100$

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$x = 75\%$, $t_{1/2} = 2.303/k$ (1)

$\therefore a-x = 100 - 75 = 25\%$

Formula :-

$$k_{1/2} = \frac{2.303}{t} \log \frac{a}{a-x} \quad (1)$$

$$t_{1/2} = \frac{2.303}{k} \log \frac{a}{a-x} \quad (2)$$

$$t_{1/2} = \frac{2.303}{k} \log \frac{100}{25}$$

$$\therefore t_{75\%} = \frac{2.303}{k} \log \frac{100}{25}$$

$$= \frac{2.303}{k} \log 4$$

$$= \frac{2.303}{k} \times 0.6020$$

$$\therefore t_{75\%} = \frac{1.386}{k} \quad (3)$$

Take ratio of eqⁿ (1) and (3)

$$\frac{t_{75\%}}{t_{50\%}} = \frac{1.386/k}{0.693/k}$$

$$= 2.00$$

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Q) In a reaction the decrease in reactant concentration is 20% in 20 min and 40% in 40 min. Calculate rate of reaction and rate constant?

Ans -> Given:

$T_1 = 20\%$
 $T_2 = 40\%$
 $t_1 = 20 \text{ min} = 20 \times 60 = 1200$
 $t_2 = 40 \text{ min} = 40 \times 60 = 2400$
 $a = 100$

1) $a-x = 100 - 20\% = 80\%$
2) $a-x = 100 - 40\% = 60\%$

1) $K_1 = \frac{2.303}{t} \log \frac{a}{a-x}$

$$K_1 = \frac{2.303}{1200} \log \frac{100}{80}$$

$$k_1 = \frac{2.303}{1200} \log (1.25)$$

$$k_1 = 1.919 \times 10^{-3} = 0.0969$$

$$k_1 = 1.859 \times 10^{-4} \text{ s}^{-1}$$

2) $k_2 = \frac{2.303}{t} \log \frac{a}{a-x}$

$$k_2 = \frac{2.303}{2400} \log \frac{100}{60}$$

$$k_2 = 9.595 \times 10^{-4} \log (1.6)$$

$$k_2 = 9.595 \times 10^{-4} \times 0.200$$

$$k_2 = 2.119 \times 10^{-4} \text{ s}^{-1}$$

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Assignment No-1

(3) What are the essential principles of method transfer? Discuss in detail documentation, communication, acceptance criteria, implementation & method validation & modification.

→ There are five essential principles which will ensure successful method transfer: documentation, communication, acceptance criteria, implementation & method validation & revalidation.

i) Documentation: method transferred from development laboratory to designated laboratory. The essential elements are

A) a written procedure - step by step description of manipulation, specific reagent, equipment, instrument setting & critical parameters each step of procedure instruction give one possible interpretation. It distinguishes method transfer from method validation. The procedure is correct, precise & reproducible.

B) Method Validation Report - It contains experimental design & data that justify the conduct of the analytical method written, performed as intended.

C) system suitability criteria - It defines the minimum acceptance criteria prior to analysis.

ii) Communication - The AR & QC Staff's should meet before transfer to discuss relevant practical aspect of the method & a particular manipulative steps. These discussions should be initiated before validation.

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vi) Method modification & revalidation:-

It significant modification to a method are incorporated at the time of transfer or revalidation may be necessary to ensure that the modification have not invalidated previous conclusion in the method validation report. Not all change in method required revalidation. The examples of method validation give above represent method revalidation required revalidation of the method. The version of method is being employed for product analysis method validation & method transfer. It includes

A) Automation:- The use of robotic approaches calibrated repeats indefinitely all manipulations of previous manual method. Only precision experiment need to be repeated occur in the laboratory after method transfer.

B) Sample preparation:- It would be desirable to use whole table instead of ground-table composition. The modification solvent-solvent or solvent solid ratios are changed in the extraction step.

C) Dilution: If solvent ratios remain identical to those in the original method & the analytical concentration are also the same only the precision is likely to be affected & those experiment report



complete. It is possible to introduce any desirable change/modification into a P.D. Validation report prior registration. Inter departmental communication allows time to generate data to justify alternatives to prepare method validation report included in registration package. e.g. changes in sample preparation, equipment requirement, availability, cost-effectiveness of required reagent.

iv) Acceptance Criteria: The designated laboratory is responsible for issuing & following SOPs define the criteria for accepting an analytical method. The data generated by SOPs basic of method transfer report. The designated laboratory responsible for data consistency resulting from the use of the method. Most of SOPs precise & acceptable for unique criteria for define a method acceptable. e.g. different statistical approaches for data evaluation, different scheme for evaluating operator to operator or day to day variability.

v) Implementation: The designation laboratory must follow the procedure written to ensure that method submitted by data base to be included in the method validation report to add additional data at the time of method transfer.

d) Alternative use of chromatographic technique - The change in specificity & resolution as well as quantitative aspect of the method. This type of modification require all method validation parameters to be reassessed to specificity, linearity, accuracy, precision & time of day.

2) Write a short note on TLQ Processes.

→ i) The method transfer - It involves more designated laboratory obtain result expected after analyzing a sample of representative product. Alone will not assure consistent performance of the method over time & actually mask erroneous results arising from compensating errors.

ii) Laboratory: Each laboratory in the method transfer process should define, independently, an experimental protocol to be followed for every method transferred to most efficiently way to take advantage of the scientific data base already established & included in the method validation report.

iii) Function: - a) The designated laboratory should confirm the linearity & recovery for the analyte alone & in presence of the known product components by designing the experimental protocol.

TLQ so that it resemble as much as possible that is carried out by the

① Advantages:

a) Allow comparison of the result raw data & calculated results with those already in the method validation report by the transfer report to be reviewed by regulatory agency as a complementary package.

② Method development & designated lab: Should test a common sample population that should be represent of the intended product. Comparison of data provides an additive level of inter-laboratory information as well as forming basis of inter-laboratory qualification (ILQ) process.

③ Experimental design: allows bids to be traced to an instrument in one laboratory, the method itself and specific operator. Reason being - that both lab. will be analyzed both analytical prepared & reference product sample.

④ Bids/Impression: associated with the assay of the former are clearly method.

⑤ Anomalous result: It is associated only with the assay of the former are clearly indicate a problem with the conduction of the method in designated

laboratory corrected by additional input into the method or by training.

⑥ Result Conclusion: The experimental summarized in the method transfer report overall objective of the results should be documentation that the method is acceptable, it is the responsibility of the designated laboratory.

⑦ The Method Transfer Report - It remain in the files of the designated laboratories along with the method validation report to support subsequent audits.

3) Discusses fundamental definition of Variation & inter laboratory transfer.

→ Introduction: It is necessary to introduce fundamental definitions is necessary to distinguish the responsibility of the laboratory that develop a method from those of laboratory who will use the method. The "gap" between the two laboratories is bridged by the method transfer process.

i) pharmaceutical industrial setting, the analytical research & development group group usually provides validated analytical methods.



iii) Method validation report is submitted to regulatory agency, a method & the supporting data in the report are viewed by both manufacturing & control reviewing chemists & one / more validation laboratories at the agency.

iv) Validation of the analytical procedure. The assessments the validation laboratory referred to as the validation of the analytical procedure. If use of term validation in all the above situation is

v) ARD group - normally develop the original method, who validates analytical methods & who transfer them depend upon column stance.

vi) Most of pharmaceutical companies - ARD group are responsible for the development of analytical method & their charter is to provide appropriate test method, specification & stability data

4) what is difference between method transfer & verification write a note on method validation report

→ Introduction - There are five essential principal which will ensure successful method transfer: documentation, communication acceptance criteria, implementation & method

modification & revalidation

i) Documentation - method transferred from development laboratory to design laboratory. The essential elements are -

Ⓐ a written procedure - step by step description of manipulation, specific reagent, equipment intermixing & critical parameters

Ⓑ method validation report - It contains experimental design & data that justify the conclusion the analytical method written, perform as intended

Ⓒ system suitability criteria - It defines the minimum acceptance criteria to analysis

ii) Method Validation report:- The essential principle of method transfer emphasize the importance of distinguishing between validation & method transfer & established the scientific qualification of a specific analytical method. Validation report transfer of a validated method is governed by the SOP established by the designated laboratory which defines their acceptance performance criteria. Method validation report is a pivotal document for any regulatory submission because it form the basis for any scientific qualification of the method.

iv) It is appropriate to renew certain aspects of the method validation report which relates directly to the method transfer process & there by qualify acceptable performance in the designated lab.

Ⓐ Specificity (Selectivity)

i) It defines ability of the method to describe / measure the analyte to the exclusion of relevant components, which might interfere.

ii) Experiment:- to establish method specificity include evaluating main component, any known related components such as synthesis - related impurities & degradation on products

iii) less relevant component such as metabolites or isomers, which might help to define the limits of a method resolution may also evaluated

iv) A similar assessment is repeated after stressing the drug to accelerate degradation under the influence of heat, light oxidation & acid & base hydrolysis

b) Chromatographic parameters:

i) It is used as the minimum standard of performance in system suitability

ii) The resolution of a crucial pairs of peaks in the chromatogram defines minimum separation requirement

iii) The minimum resolution factor in the system suitability test is generally used in the comparison.

5) Define i) linearity ii) specificity

→ Linearity:- It is defined the actual analytical response as a function of analytical concentration & range. Prescribes a region over which acceptable linearity precision & accuracy are achieved.

Specificity:- It defines ability of the method to describe measure the analyte to the exclusion of relevant component which might interfere is called specificity.

6) Give the difference between Accuracy & Precision

→ Accuracy:-

i) The recovery of the analyte of interest from the given matrix can be used as a measure of the accuracy or bias of the method.

ii) The same range of concentration as employed in the linearity study

iii) The linearity of experiment is repeated in the presence of matrix constituents; in corporation of impurities & degradation products may also apply

Precision:

i) It refers to the variability of an analytical result as a function of operator, method manipulation & day to day environment.



Page No. _____
Date _____

Page No. _____
Date _____

Assignment No-2

II) The statistical data generated to demonstrate assay precision is essential for efficiency. analysis can be both linearity & recovery data for the statistical assessment.

III) To include additional their of comparative analyses of the sample of representative product usually a minimum of ten replication.

7) Explain the terms Chromatographic parameters

→ A) Linearity - It is defined the actual analytical response as a function of analytical concentration & range. Precision, accuracy over which acceptable linearity, precision & accuracy are achieved.

d) Accuracy - The recovery of the analyte of interest from the given matrix can be used as a measure of the accuracy or bias of the method

e) Precision - It refers to the variability of an analytical result as function of operator, method manipulation & day to day environment. To include additional their of comparative analyses of the sample of representative product usually a minimum of ten replication.

1) write a short note on overview of world wide regulation use for the Validation methods used in pharmaceutical analysis

→ A) The European community guidelines -

i) In July 1989 & them in 1992 the EC issued an analytical validation guidelines in their publication "The Rules Governing medicinal product in European community"

ii) The European Guidelines indicate that are applicable to the following sections of the Chemical pharmaceutical & biological documentation

11. A Development pharmaceuticals

11. B In-process control during manufacturing

11. C Control tests on intermediate products

11. E control tests on the finished product

11. F. Stability

iii) The guidelines state that revalidation of the procedure may be necessary in certain circumstances such as transfer from analytical development, quality control, or when significant changes in the manufacturing process of the starting material or in the composition of the finished product have occurred. The degree of revalidation depends upon the nature of the changes. It includes

a) Identification, specificity

b) Impurity content test, specificity

limit of detection or limit of quantification

1) General recommendation are given which require that that the procedure includes method principles & are described in such way that they may be repeated by regulatory authority or state laboal states

2) In a Chromatographic system a system suitability test should be provided the details formulas for result calculation should be given to gether with precise descriptions of equipment of commercially available. The details of a method as similar as possible using standard equipment should be given. method found in pharma covered are considered to be validated provided that they are used for the intended application. similarly, reference substance should be evaluated for their intended purpose. Complete data showing variability should be indicated.

B) The Japanese ministry of Health and welfare (MHW): - 1) The Japanese regulatory Drug Approval & licensing procedure in Japan 1992 do not give sepecific guidance on the requirements for Japan 1992 analytical method validation. This has been entrusted to the scientific judgement of each individual pharmaceutical company. Validation is mentioned as a matter mentioned as the matter to be addressed in the setting.

2) How the biological sample study by USA guidelines

→ The United States Food & Drug Administration: - The report was intended to provide a framework of the further development of us guideline on the subject some principles & requirements for established a valid method are described & include

1) each step should be investigated to determine the extent to which matrix & environmental variables could affect the determination of the analyte type.

2) A method validation report should be provided. The same biological matrix should be used for validation as in the intended real samples.

3) The stability of the drug sample matrix should be determined. The concentration range must be defined in the method analog standard curve derived.

4) An adequate no. of standard must be used to define adequately the relationship between concentration & response.

5) The accuracy & precision with which known concentrations & analyte in the biological matrix can be determine must be demonstrated.

3) what are the Japan Guideline use to the study biological sample

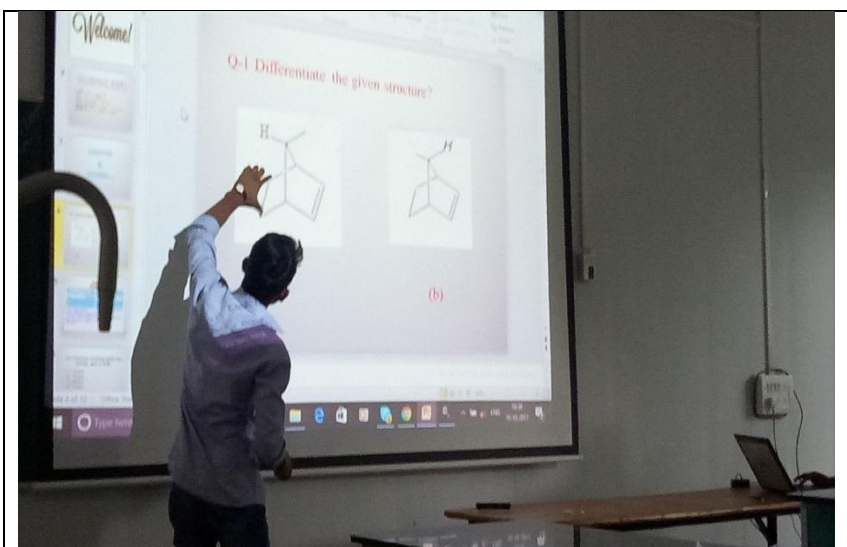
→ The Japan ministry of Health & welfare

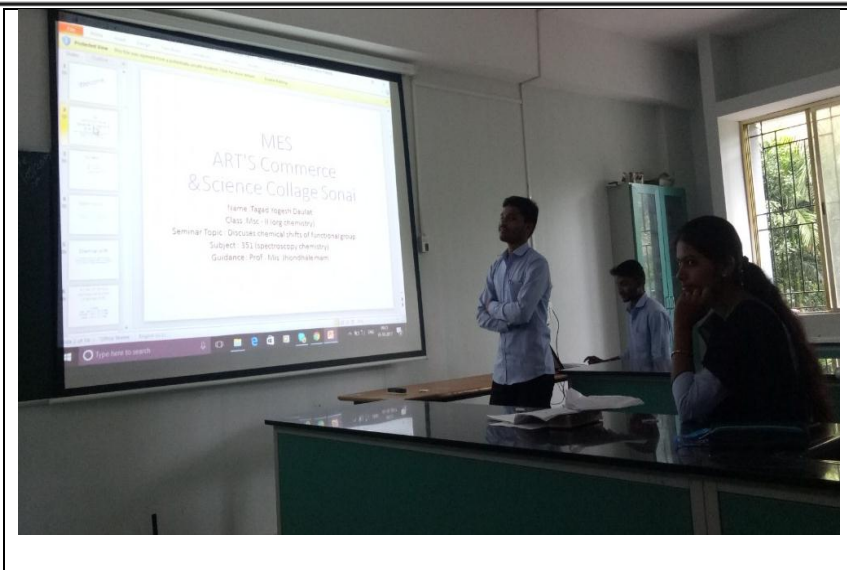
Page No. _____
Date _____

Page No. _____
Date _____

<p>Page No. <input type="text"/> Date <input type="text"/></p> <p>The study is intended for Health & welfare. The study is intended to examine the absorption, distribution, metabolism & excretion of drugs & issues of test methods & parameters to be determined. The only reference to validation appears in the test method section where it states "Assay method". The assay method & its sensitivity, precision, specificity etc. should be clearly defined.</p> <p>4) Give the Guideline provided by Europe to analysis the biological sample? → (A) The European community: i) An European community provided basic guidance on the presentation of data on the validation of test procedure carried out for toxicological & pharmacological study. ii) No specific details are given out for how validation should be performed but several recommendations are provided. iii) The bioanalysis is often carried out in more than one laboratory it is very important to be able to compare result between laboratories. Two cases should be considered. a) When the same test procedure is always used, quality control between the laboratory is necessary.</p>	<p>Page No. <input type="text"/> Date <input type="text"/></p> <p>5) What are guidelines provided by Japan to analysis pharmaceutical products? → The Japan describes the typical analytical parameters used in assay validation accuracy, precision, specificity, limit of detection, limit of detection, limit of quantization, linearity & range. The common validation scheme: 3) Data demonstrating suitable accuracy, precision & linearity over a wide range corresponding: a) Data demonstrating that neither fresh nor degraded placebo interferences with the proposed method. b) Data characterizing day to day, lab to lab, analyst to analyst & column to column variability.</p>
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9. Seminars





10. Group Discussion (Department BBA)







Mula Education Society's

ARTS, COMMERCE AND SCIENCE COLLEGE, SONAI

Tal. Newasa, Dist- Ahmednagar – 414105



Ph.: 02427-231384 Email: sonaicollege@yahoo.co.in, mesacscollege@gmail.com Website: www.acssonaicollege.com

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NAAC Re-accredited with 'A' Grade, DBT Star College Scheme, ISO 9001: 2015 Certified, AISHE Code – C-42096

11. Project Report (Sample copy)

A
PROJECT REPORT

ON

"Wedding Planning And Management System"

FOR



Arts, Commerce & Science College, Sonai



SUBMITTED TO SAVITRIBAI PHULE PUNE UNIVERSITY, PUNE

BY

MISS.Asane Vaijayanti Rajendra

MISS.Edake Kalyani Devidas

Under the Guidance of

Shri. Doifode S.K

Shri. Bahirat M.R

IN PARTIAL FULLFILLMENT OF BACHELOR OF COMPUTER APPLICATIONS

FOR THE ACADEMIC YEAR

2022-2023



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Tal. Newasa, Dist- Ahmednagar – 414105



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NAAC REACCREDITED 'A' GRADE and ISO 9001 : 2008 CERTIFIED

Date:

CERTIFICATE

This is to certify that **MISS.Asane Vaijayanti Rajendra**
& **MISS.Edake Kalyani Devidas** rebonafide students of **Arts, Commerce and Science College, Sonai** have successfully completed the Mini project work as prescribed by the Savitribai Phule Pune University, Pune in the partial fulfillment of the requirement of Second Year, Bachelor of Business Administration (Computer Application).Program for the academic year **2022-2023**.

The Project Work titled as "Wedding planning and Management System"


H.O.D.


Internal Examiner



DECLARATION

We hereby declare that the project work entitled, “**Wedding plannig And Management System**” submitted under the guidance of **Shri. Doifode S.K.** is our original work completed under the four walls of our institute.

The Report submitted is our own work and has not been duplicated from any other source. We shall be responsible for any unpleasure moment/situation.

Miss. Asane Vaijayanti Rajendra



INDEX

1. **INTRODUCTION**
 - Introduction to System
 - Proposed System
 - Scope of proposed System
2. **SYSTEM ANALYSIS**
 - Fact Finding Techniques
 - Feasibility Study
 - Hardware & Software Requirement
3. **SYSTEM DESIGN**
 - Entity Relationship Diagram
 - Data Flow Diagram
 - File Design
 - Data Dictionary
4. **FORM DESIGN (With Input Values)**
5. **Advantages and Limitations**
6. **Future Enhancement**
7. **Bibliography**

12. Industrial visits/ Study tour

Industrial visits provide students an insight into the real working environment, workstations, plants, assembly lines, machines, systems, and interact with highly trained and experienced personnel. Students get to learn a lot of things that will help in their development and also for the future.



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Arts, Commerce & Science College, Sonai.

Department of B.Voc

ACA – R - 17
 Rev : 00
 Date:

Industrial Visit, Excursion & Tour Record

Academic Year : 2022-23

Annual /Semester: I / II

Date: - 12/04/2023

VISIT REPORT
DEPARTMENT OF B.VOC



The industrial visit Department of B.voc was arranged to “Dombe Patil Foods Food processing company in Dombewadi Rd, Khor, Tal. Shirur Dist. Pune Maharashtra” on **Date 11/04/2023**

The visit was conducted under supervision of Dr. R. R. Dandawate, Mr. Jadhav A.S, Mr. Rathod V. P. & Miss. Patole M.A. along with 13 students. All belonging from F.Y, S.Y, T.Y B.Voc Food Processing.

The “Dombe Patil Foods” plant produces different types of Jam, export quality fresh figs, wine From fig also made by fig. Manufacturing area is about 1,08,900 square feet with 12 acre of own fig farm. 300 Farmers are tie up with the processing company. Annual turnover is estimated about 5 cr. for 2022-23. Student understood manufacturing process of Jam making as well as by products wine manufacturing using fig.

The overall operations of the jam manufacturing plant undergo various stages such as crushing of fig, extraction of juice, addition os sugar color, stabilizer & packaging, supplying and marketing of the fresh fruit and fig jam.


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13. External Assessments: -

Time Table of University Examinations-

**SECOND YEAR M.COM. SEM. III & IV 2019
PATTERN CREDIT SYSTEM/236/F-2023**

SAVITRIBAI PHULE PUNE UNIVERSITY

(Formerly University of Pune)



EXAMINATION CIRCULAR NO.236 OF. 2023

SECOND YEAR M.COM. SEM. III & IV 2019 PATTERN CREDIT SYSTEM

Examination of MAR/APR-2023

(Under Faculty of COMMERCE AND MANAGEMENT : A)COMMERCE)

INSTRUCTIONS FOR CANDIDATES

- Candidates are required to be present at the examination centre, THIRTY MINUTES before the stipulated time.
- Candidates are forbidden from taking any material into the examination hall that can be treated as a malpractice.
- Candidates are requested to see the Notice Board at their center of examination regularly for changes if any that may be notified later in the program.
- No request shall be granted for change in time or date for the University Examination on any ground.
- Candidates are requested to note the Day, Date and Time of Paper.
- Candidates are permitted to use stencils at the time of examination.
- The exchanges of side-rules, drawing instruments of other materials used in the examination hall is not permitted at the time of examination. Candidates must bring their own instruments and will not be allowed to borrow from each other under any circumstances.
- Use of non-programmable battery operated electronic pocket size Calculator is allowed. The exchange of Calculators is not allowed. Electronics Devices including mobile are not allowed at the time of examination.
- The written examination will be conducted in the following order.

**M.Com 2019 Credit pattern****SEMESTER-
III (TIME: 3.00 PM to 6.00 PM)**

Day & Date	Paper Code	Subject
Tuesday 0-06-2023	301	BUSINESS FINANCE
Wednesday 21-06-2023	302	RESEARCH METHODOLOGY FOR BUSINESS
Thursday 22-06-2023	303	ADVANCED AUDITING
	305	LAWS RELATING TO INTERNATIONAL BUSINESS
	307	COST AUDIT
	309	CO-OPERATIVE CREDIT SYSTEM
	311	ENTREPRENEURIAL BEHAVIOUR
	313	HUMAN RESOURCE MANAGEMENT
	315	FOREIGN EXCHANGE
	317	INTERNATIONAL MARKETING
Friday 23-06-2023	304	SPECIALISED AUDITING
	306	WTO-NORMS & PRACTICES
	308	MANAGEMENT AUDIT
	310	CO-OPERATIVE BANKING SYSTEM
	312	ENTREPRENEURSHIP
	314	ORGANIZATIONAL BEHAVIOUR
	316	INTERNATIONAL FINANCE
	318	MARKETING RESEARCH

SEMESTER-IV**(TIME: 11.00 AM to 02.00 PM)**

Day & Date	Paper Code	Subject
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Tuesday2 0-06-2023	401	CAPITALMARKET&FINANCIALSERVICES
-----------------------	-----	---------------------------------



Wednesday 21-06-2023	402A	INDUSTRIALECONOMICENVIRONMENT
	402B	OPERATIONSRESEARCH
Thursday 22-06-2023	403	RECENTADVANCESINACCOUNTING,TAXATION&AUDITING
	405	RECENTADVANCESINCOMMERCIALLAWS&PRACTICES
	407	RECENTADVANCESINCOSTAUDITING&COSTSYSTEM
	409	RECENTADVANCESINCO-OPERATIVE&RURALDEVELOPMENT
	411	RECENTADVANCESINBUSINESSPRACTICES&ENVIRONMENT
	413	RECENTADVANCESINBUSINESSADMINISTRATION
	415	RECENTADVANCESINBANKING&FINANCE
	417	RECENTADVANCESINMARKETING

NOTE: -

1.The Backlog students of M.Com II Year 2013 Credit pattern will have to appear for equivalence subjects of 2019 pattern.

Ganeshkhind, Pune - 411 007

Ref.No/XCT:719

Date:09/06/2023

Director

Board of Examinations And Evaluation



**Second Year M.Sc. Analytical Chemistry
(PAT.2019)/161/F-2023**

SAVITRIBAI PHULE PUNE UNIVERSITY

(Formerly University of Pune)



EXAMINATION CIRCULAR NO.161 OF. 2023

Second Year M.Sc. Analytical Chemistry (PAT.2019)

Examination of MAR/APR-2023

(Under Faculty of SCIENCE AND TECHNOLOGY : A)SCIENCE)

INSTRUCTIONS FOR CANDIDATES

- Candidates are required to be present at the examination centre, THIRTY MINUTES before the stipulated time.
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- The written examination will be conducted in the following order .



SEMESTER - IV

Time:-3.00 PM To 6.00 PM

Day&Date	PaperCode	Subject
Thursday1 5-06-2023	CHA-490	ADVANCED ANALYTICAL SPECTROSCOPIC TECHNIQUES
Friday16- 06-2023	CHA-491	CHEMICAL METHODS OF PHARMACEUTICALS ANALYSIS
Saturday17 -06-2023	CHA-492	A) LABORATORY AUTOMATION & ENVIRONMENTAL ANALYTICAL CHEMISTRY
	CHA-492	B) ANALYTICAL CHEMISTRY OF AGRICULTURE, POLYMER & DETARGENTS

SEMESTER - III

Time:-3.00 PM To 6.00 PM

Day&Date	PaperCode	Subject
Tuesday20 -06-2023	CHA-390	ELECTROCHEMICAL AND THERMOGRAVIMETRIC METHODS OF CHEMICAL ANALYSIS
Wednesday2 1-06-2023	CHA-391	ANALYTICAL METHOD DEVELOPMENT AND EXTRACTION TECHNIQUES
Thursday2 2-06-2023	CHA-392	ADVANCED CHROMATOGRAPHIC METHODS OF CHEMICAL ANALYSIS
Friday23- 06-2023	CHA-393	A) BIOANALYTICAL CHEMISTRY
	CHA-393	B) ANALYSIS OF FOOD AND CONTROLLED SUBSTANCES

NOTE: -

1. The Backlog Students of M.Sc. Analytical Chemistry 2013 pattern will have to appear for equivalence subject of 2019 pattern.

Ganeshkhind, Pune - 411 007

Ref.No/XCT:

Date:12/05/2023

Director

Board of Examinations and Evaluation

**Samples of External Assessments: -
Time Table of University Examinations-**

**SECOND YEAR M.COM. SEM. III & IV 2019
PATTERN CREDIT SYSTEM/236/F-2023**

SAVITRIBAI PHULE PUNE UNIVERSITY

(Formerly University of Pune)



EXAMINATION CIRCULAR NO.236 OF. 2023

SECOND YEAR M.COM. SEM. III & IV 2019 PATTERN CREDIT SYSTEM

Examination of MAR/APR-2023

(Under Faculty of COMMERCE AND MANAGEMENT : A)COMMERCE)

INSTRUCTIONS FOR CANDIDATES

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Day&Date	PaperCode	Subject
Tuesday2 0-06-2023	301	BUSINESSFINANCE
Wednesday 21-06-2023	302	RESEARCHMETHODOLOGYFORBUSINESS
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	318	MARKETINGRESEARCH

SEMESTER-IV**(TIME:11.00AMTo02.00PM)**

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Tuesday2 0-06-2023	401	CAPITALMARKET&FINANCIALSERVICES



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NOTE: -

1.The Backlog students of M.Com II Year 2013 Credit pattern will have to appear for equivalence subjects of 2019 pattern.

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Ref.No/XCT:719

Date:09/06/2023

Director

Board of Examinations And
Evaluation



Attendance Sheet of University Examinations

30

Savitribai Phule Pune University, Pune - 7
Examination of First / Second Half of the Year
Junior Supervisor / Attendance Report

Sr. No. 8882072
Form - 01

College Code 0197

Date: 20/04/23

Exam & Branch: T.Y. BSc. Chemistry March/April 2022

Semester: 5 Exam Center: A.C.S. college, sonai Block No: 01

Subject Name: Industrial chemistry Paper: - I Section: -

Note: Seat no., sticker no. is to be written by candidate only. Jr. Supervisors are not supposed to write this information.

Sl. No.	Seat No.	Barcode Sticker No	Signature of Student	No. of Supplements Used
1	38288	3525153	Budlekar	
2	38290	3525154	Fering	
3	38293	3525155	Kornal	
4	38295	3525156	Dabulchit	1
5	38296	3525157	Dandale P.S	
6	38297	3525158	Chaitany	
7	38298	3525159	Pooja	
8	38299	3525160	Ruchita	
9	38300	3525161	V.M. Dushing	
0	38301	3525162	Maya	
1	38302	3525163	Pratikwad	
2	38303	3525164	Vaishnav	
3	38304	3525165	Gawali.S.	
4	38305	3525166	Sny.	
5	38307	3525167	Jadhav One	
6	38308	3525168	Pradhal	
7	38309	3525169	Adhye	
8	38311	3525170	Rushi	
9	38314	3525171		
0	38316	3525172	Jawale	
1	38317	3525173	Pradhal	
2	38318	3525174	Pradhal	
3	38320	3525175	Pradhal	
4	38321	3525176	Pradhal	
5	38322	3525177	Pradhal	
6	38324	3525178	Pradhal	
7	38325	3525179	Pradhal	
8	38327	3525180	Pradhal	
9	38333	3525181	Pradhal	
0	38335	3525182	C.M.S	01

PPUP-5.00,000-1-2020 (349) [3'exam]



Details of Unfair Means Cases :

No.	Seat No.	Remark	S. No.	Seat No.	Remark
1			4		
2			5		
3			6		

Note : Answer Books for all Unfair Means Cases should be sent directly to University in sealed envelopes.

Details of Emergency Barcode Stickers used :

ir. No.	Seat No.	Barcode Sticker No	Sem.	Sign of Student	Remark
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13				Nil	
14					
15					
16					

Important instructions:

Unused bar code stickers (may be because of center change / change in subject or any other reason) have to be pasted at appropriate space provided on the Form 2. No sticker shall be kept at exam center. For absentee of student, whose bar code is not received, it is not necessary to use emergency bar code. Absentee will be considered automatically.

- Header sticker on bar code sticker sheet is to be pasted on Form 2.
- Form 1 is to be kept with exam center and Form 2 is to be submitted to CAP center with Answer Books.

Summary :

Present Students	Emergency Sticker Used	Absent Students	Unfair Means Cases	Total Answer books with Form 1 sent to CAP Centre
30	-	00	-	30

[Signature]
 20/06/23
 Prof. Kadam M.B.

Name & Sign. of
 Jr. Supervisor

[Signature]
 20/06/23
 Dr. S. S. Daxode

Name & Sign. of
 Sr. Supervisor (Internal)

[Signature]
 20/06/23
 A.M. Dahatonde

Name & Sign. of
 Sr. Supervisor (External)



07

Savitribai Phule Pune University, Pune - 7
 Examination of First / Second Half of the Year
 Junior Supervisor / Attendance Report

Sr. No. 3832073
Form - 01

Note: Separate report is to be used for each Pattern, Exam, Semester, Subject and Section as applicable.

College Code 0197 Date: 200623

Exam & Branch: T.Y. BSC March 2023 Block No: 02

Semester: V Exam Center: Acsc college sonai

Subject Name: CH-505 Industrial Chemistry I Paper: 35135 Section: _____

Note: Seat no., sticker no. is to be written by candidate only. Jr. Supervisors are not supposed to write this information.

Sr. No.	Seat No.	Barcode Sticker No	Signature of Student	No. of Supplements Used	
1	38337	3525183	P.F. Shikare		
2	38340	3525184	[Signature]		
3	38341	3525185	[Signature]		
4	38342	3525186	[Signature]		
5	38343	3525187	Ashok		
6	38351	3525188	[Signature]		
7	38352	3525189	[Signature]		
8					
9					
10					Nil
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

SPPUP - 5,00,000-1-2020 (349) [3 exam]



Details of Unfair Means Cases :

Sl. No.	Seat No.	Remark	S. No.	Seat No.	Remark
			4		
			5		
			6		

Note : Answer Books for all Unfair Means Cases should be sent directly to University in sealed envelopes.

Details of Emergency Barcode Stickers used :

Sl. No.	Seat No.	Barcode Sticker No	Sem.	Sign of Student	Remark
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					

Important instructions:

Unused bar code stickers (may be because of center change / change in subject or any other reason) have to be pasted at appropriate space provided on the Form 2. No sticker shall be kept at exam center.
 For absentee of student, whose bar code is not received, it is not necessary to use emergency bar code. Absentee will be considered automatically.
 Header sticker on bar code sticker sheet is to be pasted on Form 2.
 Form 1 is to be kept with exam center and Form 2 is to be submitted to CAP center with Answer Books.

Summary :

Present Students	Emergency Sticker Used	Absent Students	Unfair Means Cases	Total Answer books with Form 1 sent to CAP Centre
07	-	-	-	07

Azmadani
 Name & Sign. of Jr. Supervisor

Dr. S. S. Darade
 Name & Sign. of Sr. Supervisor (Internal)

A. S. J. Dahatonde
 Name & Sign. of Sr. Supervisor (External)



Savitribai Phule Pune University, Pune - 7
Examination of First / Second Half of the Year
Junior Supervisor / Attendance Report

Sr. No. Form - 01

Note : Separate report is to be used for each Pattern, Exam, Semester, Subject and Section as applicable.

College Code 0197

Exam & Branch : S.Y. B.Sc. March/April 2022-23 Date : 070723

Semester : 3 Exam Center : A.C.S. college, Sonai Block No : 01

Subject Name : Botany Paper : I Section :

* Note : Seat no., sticker no. is to be written by candidate only. Jr. Supervisors are not supposed to write this information.

Sr. No.	Seat No.	Barcode Sticker No	Signature of Student	No. of Supplements Used
1	38188	3385000	Januja	
2	38189	3385001	Ajashri	
3	38191	3385002	Beendes	
4	38193	3385003	Aishwarya	
5	38194	3385004	monali	
6	38198	3385005	Ashwini	
7	38200	3385006	Ashwini	
8	38207	3385007	N.K Inamdar	
9	38208	3385008	Shruti	
10	38218	3385009	Suyodh	
11	38221	3385009	Shruti	
12	38223	3385010	Ashwini	
13	38224	3385012	Shubham	
14	38230	3385013	Ashwini	
15	38232	3385014	Pravara	
16	38237	3385015	Aditya	
17	38238	3385016	Pravara	
18	38240	3385017	Shikhar	
19	38241	3385018	Anya	
20	38246	3385019	Ward	
21	38248	3385020	Ward	
22	38251	3385022	Quinn	
23	38252	3385023	Kaush	
24	38253	3385024	Ward	
25	38254	3385025	Sonai	
26				
27				
28				
29				
30				



Details of Unfair Means Cases :

S. No.	Seat No.	Remark	S. No.	Seat No.	Remark
1			4		
2			5		
3			6		

Note : Answer Books for all Unfair Means Cases should be sent directly to University in sealed envelopes.

Details of Emergency Barcode Stickers used :

Sr. No.	Seat No.	Barcode Sticker No	Sem.	Sign of Student	Remark
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12		A		Nil	
13					
14					
15					
16					

Important instructions:

- i) Unused bar code stickers (may be because of center change / change in subject or any other reason) have to be pasted at appropriate space provided on the Form 2. No sticker shall be kept at exam center.
- ii) For absentee of student, whose bar code is not received, it is not necessary to use emergency bar code. Absentee will be considered automatically.
- iii) Header sticker on bar code sticker sheet is to be pasted on Form 2.
- iv) Form 1 is to be kept with exam center and Form 2 is to be submitted to CAP center with Answer Books.

Summary :

Present Students	Emergency Sticker Used	Absent Students	Unfair Means Cases	Total Answer books with Form 1 sent to CAP Centre
(25) -	-	(02)		(25) -

[Signature]
 07/07/23
Prof. Kulkarni M.B.
 Name & Sign. of
 Jr. Supervisor

[Signature]
 07/07/23
Dr. S.S. Jadhav
 Name & Sign. of
 Sr. Supervisor (Internal)

[Signature]
 07/07/23
A.M. Dahatonde
 Name & Sign. of
 Sr. Supervisor (External)



14. Student Feedback

The purpose of feedback in the assessment and learning process is to improve a student's performance it reinforces their educational performance and gives them the confidence to continue working hard.

College follow ISO standard for quality management systems, which provides the framework for a quality assured educational system that offers educational products and services.

Mula Education Society's
Arts, Commerce & Science College, Sonai.
ISO 9001: 2015 ACADEMIC PROCESS MANUAL

ACA/PR/19	Student Feedback & Complaints		
Rev.: 00	Date: 15.06.2018	Clause: 9.1.2, 10.2	Page: 01 / 01
Input	Prescribed printed feedback forms, admitted students		
Sr. No.	Activity	Owner	Process Out put
A	Student Feedback		
01	Filling the feedback forms from students	HOD	Student feedback form
02	Collecting the feedback forms	HOD	--
03	Analysis of the feedback forms	HOD	Student feedback analysis report
04	Submitting the report to Principal	HOD	--
05	Taking action such as counseling of the faculties having poor rating, appreciation of the faculties having rating more than the target score.	Principal	Letter
B	Student Complaints		
01	Collect the complaints through suggestion boxes once in 15 days.	Grievance cell in-charge	--
02	Also receive the student's complaints through interaction with student / parents. Communicate the complaints receives to the grievance cell in-charge.	Faculty	--
03	Record the details of the complaints received such as name of the students and nature of the complaints	Grievance cell in-charge	Student complaint register
04	Arrange the grievance cell committee meeting on monthly basis.	Grievance cell in-charge	--
05	Discuss and analyze the complaint received. Initiate proper corrective actions for resolution of the complaints.	Grievance cell in-charge	Student complaint register
06	During MRM (Conducted once in six months), present the data of student complaints and actions initiated if any.	Grievance cell in-charge	Minutes of MRM
Output	Improvement in the student satisfaction, resolution of student complaints		