SIR SYED COLLEGE
NIRF-2023 Ranked (101 - 150 Band)
Affiliated to Kannur University, Kerala

SIR SYED COLLEGE
KARIMBAM PO, THALIPARAMBA- KANNUR
https://sirsyedcollege.ac.in/
https://sirsyedcollege.ac.in/iqac/naac

1.1 Curricular Planning and Implementation

Bridge Courses

SIR SYED COLLEGE
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KARIMBAM PO, THALIPARAMBA- KANNUR
https://sirsyedcollege.ac.in/
https://sirsyedcollege.ac.in/iqac/naac

BRIDGE COURSE (2023-2026 Batch)
SYLLABUS

OBJECTIVES OF THE COURSE

a. To foster students an interest in communication as well as writing skills.

b. To give a foundation course in Botany to strengthen the basic and fundamental knowledge of Botany.

c. To familiarize the students with laboratory manuals and practices so as to ensure the safe exploration of laboratory chemicals and equipments.

Sl. No.	Modules	Objectives	Hours
1.	Module 1	Vocabulary	3 hrs
2.	Module 2	Introduction to Botany	2 hrs
3.	Module 3	Practical Botany	3 hrs
4.	Module 4	Carrier Orientation	2 hrs

Module 1   **(3 hrs)**

Word Building, Kinds of Sentences, Parts of Speech, Sentence Pattern, Tenses, Active and Passive Voice, Reported Speech, Degrees of Comparison, Question Tag.

Module 2   **(2 hrs)**

Major Botanists- with special reference to India and Kerala, Major Botanical Institutes in India, Branches of Botany, Scope and Significance of Botany.

Module 3   **(3 hrs)**

Introduction to Laboratory practices, Parts and uses of microscope, Sectioning and staining techniques, Biosafety protocols.

Module 4   **(2 hrs)**

Major higher education centers in India- UGC-CSIR institutes, Universities, Boards, etc. Carrier opportunities-R & D centers, Education Institutions, Private agencies.

BRIDGE COURSE (2022-2025Batch) SYLLABUS

OBJECTIVES OF THE COURSE

a. To familiarize the students with laboratory manuals and practices so as to ensure the safe exploration of laboratory chemicals and equipments.

b. To give a foundation course in Botany to strengthen the basic and fundamental knowledge of Botany.

c. To foster students an interest in communication as well as writing skills..

Sl. No.	Modules	Objectives	Hours
1.	Module 1	Carrier Orientation	2 hrs
2.	Module 2	Vocabulary	3 hrs
3.	Module 3	Introduction to Botany	3 hrs
4.	Module 4	Practical Botany	3hrs

Module 1   **(2hrs)**

Major higher education centers in India- UGC-CSIR institutes, Universities, Boards, etc. Carrier opportunities-R & D centers, Education Institutions, Private agencies

Module 2   **(3 hrs)**

Word Building, Kinds of Sentences, Parts of Speech, Sentence Pattern, Tenses, Active and Passive Voice, Reported Speech, Degrees of Comparison, Question Tag.

Module 3   **(3 hrs)**

Major Botanists- with special reference to India and Kerala, Major Botanical Institutes in India, Branches of Botany, Scope and Significance of Botany.

Module4   **(3hrs)**

Introduction to Laboratory practices, Parts and uses of microscope, Sectioning and staining techniques, Biosafety protocols.

SIR SYED COLLEGE
STUDENT'S ATTENDANCE

2021 - 2022 (Online / offline mode)

Bsc Botany

TALIPARAMBA
REGISTER

CLASS

Roll No.	Admission No.	Name	Total Absence up to previous week	Date
1231		AFEEFA. M		
32		FARHANA. D-P		
36		RAIHANA. R.M		
38		ADITHYA T		
40		ANUSHA U		
43		ASHMIKA. M.V		
47		NASWA. K.P		
51		RIVANA T		
53		SISIRA. K.V		
55		AKASH. E		
57		ANUSREE P.K		
54		ASWANTH. P.		

Department of PG Studies and Research in Botany
Sir Syed College, Taliparamba, Karimbam PO
Kannur, Kerala – 670 142.

BRIDGE COURSE (2019-2022 Batch)
SYLLABUS

OBJECTIVES OF THE COURSE

a. To familiarize the students with laboratory manuals and practices so as to ensure the safe exploration of laboratory chemicals and equipments.

b. To give a foundation course in Botany to strengthen the basic and fundamental knowledge of Botany.

c. To foster students an interest in communication as well as writing skills..

Sl. No.	Modules	Objectives	Hours
1.	Module 1	Carrier Orientation	2 hrs
2.	Module 2	Vocabulary	3 hrs
3.	Module 3	Introduction to Botany	3 hrs
4.	Module 4	Practical Botany	3hrs

Module 1   (2hrs)

Major higher education centers in India- UGC-CSIR institutes, Universities, Boards, etc. Carrier opportunities-R & D centers, Education Institutions, Private agencies

Module 2   (3 hrs)

Word Building, Kinds of Sentences, Parts of Speech, Sentence Pattern, Tenses, Active and Passive Voice, Reported Speech, Degrees of Comparison, Question Tag.

Module 3   (3 hrs)

Major Botanists- with special reference to India and Kerala, Major Botanical Institutes in India, Branches of Botany, Scope and Significance of Botany.

Module4   (3hrs)

Introduction to Laboratory practices, Parts and uses of microscope, Sectioning and staining techniques, Biosafety protocols.

2019-2020.

SIR SYED COLLEGE
STUDENT'S ATTENDANCE

TALIPARAMBA
REGISTER

CLASS

Roll No.	Admission No.	Name	Total Absence up to previous week	Date				Date					Date				Date				Date					Total Absence during the week	Total Absence at the end of the week
				hr I	hr II	hr III	hr IV	hr I	hr II	hr III	hr IV	hr	hr I	hr II	hr III	hr IV	hr V	hr I	hr II	hr III	hr IV	hr V	hr I	hr II	hr III	hr IV	hr V		
2581		FATHIMA ABDULLA.		x	a	x	a	x	x	x		x	x	x													
2585		SHAFEEQUE.S.		x	a	x	x	x	a	x		x	x														
2587		ABHISHEK.K		x	x	a	a	a	x	x		x	x														
2584		ANUSREE.P		x	x	x	a	x	x	x		a	x														
2595		ADHEENA.KR		x	x	x	x	x	x	x		x	x														
2596		ADITHYAN.CB		x	x	x	x	x	a	a		a	x														
2599		ASWIN.K		x	x	x	x	x	x	x		x	a														
2602		NAHLA.C.P.		x	x	x	x	x	x	x		x	a														
2603		PRESNA PREM.		x	x	x	x	x	x	x		x	x														
2605		SHABEERA.S.		x	x	x	a	x	a	x		x	a														
2606		SHIFNA.MP		x	x	a	x	x	a	x		x	a														
2611		VYSHAK VINCENT		x	x	x	x	x	x	a		x	x														
2614		FATHIMATHUL SANA KPP.		x	x	x	x	x	x	x		x	a														
2615		HIBA FATHIMA PP.		SH	SH	TA	SH	SH	TA	SH		SH	SH														

BRIDGE COURSE (2018-2021 Batch) SYLLABUS

OBJECTIVES OF THE COURSE

a. To foster students an interest in communication as well as writing skills.

b. To give a foundation course in Botany to strengthen the basic and fundamental knowledge of Botany.

c. To familiarize the students with laboratory manuals and practices so as to ensure the safe exploration of laboratory chemicals and equipments.

Sl. No.	Modules	Objectives	Hours
1.	Module 1	Vocabulary	3 hrs
2.	Module 2	Introduction to Botany	2 hrs
3.	Module 3	Practical Botany	3 hrs
4.	Module 4	Carrier Orientation	2 hrs

Module 1
(3 hrs)

Word Building, Kinds of Sentences, Parts of Speech, Sentence Pattern, Tenses, Active and Passive Voice, Reported Speech, Degrees of Comparison, Question Tag.

Module 2
(2 hrs)

Major Botanists- with special reference to India and Kerala, Major Botanical Institutes in India, Branches of Botany, Scope and Significance of Botany.

Module 3
(3 hrs)

Introduction to Laboratory practices, Parts and uses of microscope, Sectioning and staining techniques, Biosafety protocols.

Module 4
(2 hrs)

Major higher education centers in India- UGC-CSIR institutes, Universities, Boards, etc. Carrier opportunities-R & D centers, Education Institutions, Private agencies.

SIR SYED COLLEGE
STUDENT'S ATTENDANCE REGISTER

2018 – 2019 - Batch

Roll No.	Admission No.	Name	Total Absence up to previous week
		Rasha T P	
		Sahla M	
		Muflila	
		Sarga C K	
		Ajina PP	
		Anusha P	
		Hasluma T P	
		Athul Fawaz	
		Fahana P	
		Mahima U M	
		Anisin C P	
		Ajnas B	
		Ramisa V	
		Sumayya P	
		Snigda Up	
		Navjma TM	
		Krishna T	

TALIPARAMBA
REGISTER

CLASS ....

Total Absence

IGNITE' 22

DEPARTMENT / CLUB: In association with PTA, Sir Syed College

(Replace the image with a geotagged image of the programme using the image replace option)

Description

BRIDGE COURSE IN MATHEMATICS FOR FIRST SEMESTER GRADUATE STUDENTS

A bridge course for newly admitted undergraduate students of Mathematics, Statistics, Physics Chemistry and Economics before the commencement of the first semester classes.

❖ The main objective of the course is to bridge the gap between subjects studied at school level and subjects they would be studying in Graduation.

❖ The syllabus for the course is framed in such a way that they get basic knowledge on the subjects which they would be learning through graduation.

❖ Accordingly, the Bridge Course has been prepared with the dual objective of reviewing the studies done by the students in the previous academic year and helping them to learn the curriculum of the present class in this academic year.

❖ During the first week after the commencement of the classes, the bridge course curriculum can be delivered to the students.

❖ A post bridge course test is conducted after the completion of bridge course syllabus to assess the ability of students. Mathematics is a necessary subject to study Chemistry, Economics, Mathematics, Physics and Statistics. A thorough Mathematical background is needed to better understand the various topics in concerned subjects. There is a gap of knowledge in Mathematics to the students due to various reasons including the online classes during Pandemic era, the reducing of Plus one and Plus Two syllabus to certain focus areas, the poor performance of students in Mathematics from lower classes, Phobia of students towards mathematics, etc. To bridge this gap and to strengthen the fundamentals of the students, a module on Mathematics is incorporated as a bridge course. It would enable the students to grasp the concepts of mathematics quickly and efficiently.

Aim of the Bridge course in Mathematics

➢ To make "learning of Mathematics as a pleasant experience".

➢ To Bridge the school education and graduate education.

➢ To enhance the performance of students in Mathematics

➢ To reduce the hurdles of students in acquiring knowledge in pure & applied science

The programme started on 10-10-2022 and ends on 29-10-2022. The five full day classes were conducted for three batches BSc. Mathematics & BSc. Statistics, BSc. Chemistry & BSc.

BRIDGE COURSE IN MATHEMATICS FOR

BSc. MATHEMATICS

BSc. STATISTICS

BSc. PHYSICS

BSc. CHEMISTRY

&

BA. ECONOMICS

Prepared by:

1. Sirajudheen M P, Head of the Department of Mathematics
2. Mansoor N K, Head of the Department of Statistics
3. Muneer C.P, Assistant Professor, Department of Physics

SIR SYED COLLEGE

TALIPARAMBA
KANNUR
KERALA -670142

BRIDGE COURSE IN MATHEMATICS FOR FIRST SEMESTER GRADUATE STUDENTS

A bridge course for newly admitted under graduate students of Mathematics, Statistics, Physics Chemistry and Economics before the commencement of the first semester classes.

* ❖ The main objective of the course is to bridge the gap between subjects studied at school level and subjects they would be studying in Graduation.
* ❖ The syllabus for the course is framed in such a way that they get basic knowledge on the subjects which they would be learning through graduation.
* ❖ Accordingly, the Bridge Course has been prepared with the dual objective of reviewing the studies done by the students in the previous academic year and helping them to learn the curriculum of the present class in this academic year.
* ❖ During the first week after the commencement of the classes, the bridge course curriculum can deliver to the students.
* ❖ A post bridge course test is conducted after the completion of bridge course syllabus to assess the ability of students.

Mathematics is a necessary subject to study Chemistry, Economics, Mathematics, Physics and Statistics. A thorough Mathematical background is needed to the better understanding of the various topics in concerned subjects. There is a gap of knowledge in Mathematics to the students due to various reasons including the online classes during Pandemic era, the reducing of Plus one and Plus Two syllabus to certain focus areas, the poor performance of students in Mathematics from lower classes, Phobia of students towards mathematics, etc. To bridge this gap and to strengthen the fundamentals of the students, a module on Mathematics is incorporated as bridge course. It would enable the students to grasp the concepts of mathematics quickly and efficiently.

Aim of the Bridge course in Mathematics

* ➢ To make "learning of Mathematics as a pleasant experience".

- ➢ To Bridge the school education and graduate education.
- ➢ To enhance the performance of students in Mathematics
- ➢ To reduce the hurdles of students in acquiring knowledge in pure & applied science

Total number of hours to be handled: 30

BRIDGE COURSE IN MATHEMATICS FOR B.Sc. MATHEMATICS & B.Sc.

STATISTICS

Module 1

Set Theory, Relations and Functions

1. Set Theory
    1.1 Definition and Representation
    1.2 Types of Sets
    1.3 Operation on Sets
2. Relations
    2.1 Definition
    2.2 Types of Relations
    2.3 Partial order and Equivalence Relations
3. Functions
    3.1 Definition and classification
    3.2 Types of functions
        3.2.1 Algebraic and Transcendental functions
        3.2.2 Trigonometric, Logarithmic and Polynomial functions
    3.3 Composition and Inverse of functions

Module 2

Number System

    2.1 Types of Numbers
    2.2 Open and closed Interval
    2.3 Neighbourhood of a point
    2.4 Limit point of a Set

Module 3

Differential

    3.1 Function
    3.2 Limit and Continuity
    3.3 Differentiability
    3.4 Derivatives of a function
    3.5 Differentiation rules
    3.6 Derivatives of trigonometric function.
    3.7 Chain rule Techniques of differentiation
    3.8 Total and partial derivatives.

Module 4

Integral Calculus

4.1 Applications of integration

4.2 Definite and indefinite integrals

4.3 Proper and improper integrals

4.4 Techniques of integration.

4.5 Integration by substitution

4.6 Integration by parts

Module 5
Matrices and Determinants

5.1 Types of Matrices

5.2 Operations on Matrices

5.3 Determinants and Cofactors

5.4 Inverse of a Square Matrix

5.5 Rank of Matrix

5.6 Elementary row / column operations

5.7 System of Linear Equations

Module-6
Complex Numbers

6.1 Definition of complex numbers

6.2 Concepts of modulus / absolute value and Arguments

6.3 Disks and Neighbourhoods

6.4 Complex Function

6.5 Real and Imaginary Parts of a Complex Function

Module 7

Analytical geometry and Vector Algebra

7.1 Polar Equation of Conics

7.2 Relating Polar and Cartesian coordinates

7.3 Conic Section in Polar Coordinates

7.4 Directional Derivative

7.5 Properties of Directional Derivative

7.6 Gradient and directional derivative for function of three variables

Module 1

Set Theory, Relations and Functions

1. Set Theory
    1.1 Definition and Representation
    1.2 Types of Sets
    1.3 Operation on Sets
2. Relations
    2.1 Definition
    2.2 Types of Relations
    2.3 Partial order and Equivalence Relations
3. Functions
    3.1 Definition and classification
    3.2 Types of functions
    3.3 Composition and Inverse of functions

Module 2

Differential and Integral Calculus

2.1 Intervals
2.2 Open Interval
2.3 Neighbourhood of a point
2.4 Function
2.5 Limit point of a Set
2.6 Limits
2.7 Limit of a function
2.8 Continuity
2.9 Differentiability
2.10 Derivatives of a function
2.11 Differentiation rules
2.12 Derivatives of trigonometric function.
2.13 Chain rule Techniques of differentiation
2.14 Total and partial derivatives.

Integral Calculus

2.15 Applications of integration

2.16 Definite and indefinite integrals
2.17 Proper and improper integrals
2.18 Techniques of integration.
2.19 Integration by substitution

Module 6

Trigonometric Functions

Module 7

Differential Equations

BRIDGE COURSE IN MATHEMATICS AND STATISTICS FOR

BA. ECONOMICS

Objective:

The main objective of this course is to bridge the 2 years gap between school and first year undergraduate syllabus of BA. Economics, so that they can be comfortable when they start the subject in first year degree of Economics. Meanwhile they can be able to appear for competitive exams.

Courses Outcome:

After successful completion of the course, the learner shall be confident & enhanced with quantitative aptitude (numerical ability), catering to the needs of candidates who intend to appear for all the competitive or entrance examinations to get admissions to different professional courses. Students are trained with different data analysis techniques.

Module 1

Basic Mathematics

1.1 Sequence of mathematical operations — BODMAS

1.2 Basic Operations on fractions

1.3 Solving simultaneous Linear equations

1.4 Graph- Basic Graph plotting, Linear equation

1.5 Some standard functions and identities

1.6 Basic concepts of permutation and combination

1.7 Introduction of Derivatives

1.8 Simple and compound interest

1.9 Basics of Co-ordinate Geometry- Lines

1.10 Introduction to matrices and their basic operations

1.11 Algebra of indices (Exponents)

1.12 Ratio and proportion, Percentage, Profit & Loss, Logarithms

Module 2:

Basic Statistical concepts

2.1 Introduction to Statistics (Collection, Classification, Tabulation of Data)

2.2 Presenting data in Graphical format (graph, diagrams, pie charts)

2.3 Basic concept of probability.

Module 3

Differential and Integral Calculus

3.1 Intervals
3.2 Open Interval
3.3 Neighbourhood of a point
3.4 Function
3.5 Limit point of a Set
3.6 Limits
3.7 Limit of a function
3.8 Continuity
3.9 Differentiability
3.10 Derivatives of a function
3.11 Differentiation rules
3.12 Derivatives of trigonometric function.
3.13 Chain rule Techniques of differentiation
3.14 Total and partial derivatives.

SIR SYED COLLEGE TALIPARAMBA

Affiliated to Kannur University | Re-accredited by NAAC With A Grade

OFFERS

IGNITE'22

BRIDGE COURSE FOR BUILDING THE INTEREST IN MATHEMATICAL METHODS OVER UNDERGRADUATE STUDENTS IN SCIENCE AND ECONIMICS.

Exclusively for freshers in
B. Sc. Programes (Mathematics, Statistics, Physics and Chemistry) and BA Economics.

📅 10/10/2022 - 31/10/2022

Patron
Dr. Ismail Olayikkara
Principal, Sir Syed College, Taliparamba

Convener
Dr. Haris P

SIR SYED COLLEGE TALIPARAMBA

Affiliated to Kannur University | Re-accredited by NAAC With A Grade

OFFERS

IGNITE'22

BRIDGE COURSE FOR BUILDING THE INTEREST IN MATHEMATICAL METHODS OVER UNDERGRADUATE STUDENTS IN SCIENCE AND ECONIMICS.

Exclusively for freshers in B. Sc. Programes (Mathematics, Statistics, Physics and Chemistry) and BA Economics.

10/10/2022 – 31/10/2022

Convener
Dr. Haris P

Patron
Dr. Ismail Olayikkara

Physics (Bridge Course)

No.	Name	Signature 28/10/2022	29/10/22	30/10/22
1.	Gopika Gopinath	Gopika	Gopika	Gopika
2.	Abhirami K S	Abhi-Am	Ambu	Ambu
3.	Adheena K P	Adheena		
4.	RAFA MARIYAM-AB	Rafiya		
5	Rasha Feblin-k			
6	Mariya Husna			
7	Anjali krishna k	Anjali	Anjali	Anjali
8.	Ambili -T	@mlili		vanidda
9.	Shamila Farhana k			
10	Vyshnav.k	Vys	Vys	Vys
11.	Brian Tom Joseph	Brian	B.J	B.J
12	Rajath P	Rajath		
13	Muhammed shahir	Shahir		
14.	Mhd. Fazeen.VP	Akhlf		
15.	Abdullah. P	Ahm		
16.	Vybhav. KC	Un		
17	Abhinav T	Abh		
18)	Rana Abdul Kader	Rana	Rana	Rana
19)	shahda. mv	Shahda	Shahda	Shahda

20) Fathima Rana

21) Fathima Nowshis

22) Fida Faisal

23) Hamida Yasmeen

24) Sajla . O.M.

25) Sajwa Shirin

26) Amal .CA

27 Afzal. P

28) Nilofer Nooauldtin

29) Abhinav

Bsc. Physics

	Name	Signature
		08/11/2023 10/11/23 12/11/23
1.	Ambili - T	
2.	Anjalikrishna k	
3.	Gopika Gopinath	
4.	Abhirami K S	
5.	Shamila Farhana K	
6.	Nilofer Noorul Ain B	
7.	Vyshnav. k	
8.	Brian Tom Joseph	
9.	Amal.C.A	
10.	RAJATH P	
11.	Afzal.p	
12)	Hamida Yasmeen M	
13)	Sajla O.H	
14)	Fathima Nowrin	
15)	Fathima Rana	
16)	MARIYA HUSNA.	
17)	Sajwa Shirin	
18)	Fida Faisal	
19)	RAFA MARIYAM-AP	
20)	RASHA FEBIN	

INDEFINITE INTEGRALS

IMPORTANT POINTS

❖ If $\dfrac{d}{dx}[F(x)] = f(x)$

Then, $\int f(x)dx = F(x) + c$

❖ $\int x^n dx = \dfrac{x^{n+1}}{n+1} + c$

$\int \dfrac{1}{x} dx = \log x + c$

$\int e^x dx = e^x + c$

$\int a^x dx = \dfrac{a^x}{\log a} + c$

$\int \cos x\, dx = \sin x + c$

$\int \sin x\, dx = -\cos x + c$

$\int \sec^2 x\, dx = \tan x + c$

$\int \cos ec^2 x\, dx = -\cot x + c$

$\int \sec x \tan x\, dx = \sec x + c$

$\int \cos ecx \cot x\, dx = -\cos ecx + c$

$\int \dfrac{1}{\sqrt{1-x^2}} dx = \sin^{-1} x + c \ or \ -\cos^{-1} x + c$

$\int \dfrac{1}{1+x^2} dx = \tan^{-1} x + c \ or \ -\cot^{-1} x + c$

$\int \dfrac{1}{x\sqrt{x^2-1}} dx = \sec^{-1} x + c \ or \ -\cos ec^{-1} x + c$

$\int \tan x\, dx = \log \sec x + c$

$\int \cot x\, dx = \log \sin x + c$

$\int \sec x\, dx = \log(\sec x + \tan x) + c$

$\int \cos ecx\, dx = \log \tan \dfrac{x}{2} + c$

❖ $\int \dfrac{1}{a\sin x + b\cos x} dx$

Put $a = r\cos\alpha, b = r\sin\alpha$

Where, $r = \sqrt{a^2 + b^2}$ and $\tan\alpha = \dfrac{b}{a}$

❖ $\int \dfrac{1}{x^2 + a^2} dx = \dfrac{1}{a}\tan^{-1}\dfrac{x}{a} + c$

$\int \dfrac{1}{x^2 - a^2} dx = \dfrac{1}{2a}\log\left|\dfrac{x-a}{x+a}\right| + c$

$\int \dfrac{1}{a^2 - x^2} dx = \dfrac{1}{2a}\log\left|\dfrac{a+x}{a-x}\right| + c$

$\int \dfrac{1}{\sqrt{x^2 + a^2}} dx = \log\left|x + \sqrt{x^2 + a^2}\right| + c$

$\int \dfrac{1}{\sqrt{x^2 - a^2}} dx = \log\left|x + \sqrt{x^2 - a^2}\right| + c$

$\int \dfrac{1}{\sqrt{a^2 - x^2}} dx = \sin^{-1}\dfrac{x}{a} + c$

$\int \sqrt{x^2 + a^2}\, dx = \dfrac{x}{2}\sqrt{x^2 + a^2} + \dfrac{a^2}{2}\log\left|x + \sqrt{x^2 + a^2}\right| + c$

$\int \sqrt{x^2 - a^2}\, dx = \dfrac{x}{2}\sqrt{x^2 - a^2} - \dfrac{a^2}{2}\log\left|x + \sqrt{x^2 - a^2}\right| + c$

$\int \sqrt{a^2 - x^2}\, dx = \dfrac{x}{2}\sqrt{a^2 - x^2} + \dfrac{a^2}{2}\sin^{-1}\dfrac{x}{a} + c$

❖ $\int uv\, dx = u\int v\, dx - \int\left[\dfrac{du}{dx}\int v\, dx\right]dx$

❖ $\int e^x[f(x) + f'(x)]dx = e^x f(x) + c$

QUESTIONS

1. $\int \dfrac{\sin^3 x + \cos^3 x}{\sin^2 x \cos^2 x} dx =$
   (a) $\sec x + \cot x + c$ (b) $\sec x - \cos ecx + c$
   (c) $-\sec x - \cos ecx + c$ (d) None

2. $\int \dfrac{1 - \cos 2x}{1 + \cos 2x} dx =$
   (a) $\tan x + x + c$ (b) $\tan x - x + c$
   (c) $\sec^2 x + c$ (d) None

3. $\int \dfrac{1 - x^4}{1 - x} dx =$
   (a) $x + \dfrac{x^2}{2} + \dfrac{x^3}{3} + \dfrac{x^4}{4} + c$ (b) $x - \dfrac{x^2}{2} + \dfrac{x^3}{3} - \dfrac{x^4}{4} + c$
   (c) $-\dfrac{1}{4}(1-x)^4 + c$ (d) None

4. $\int \dfrac{dx}{1 + \sin x} =$
   (a) $\tan x - \sec x + c$ (b) $\tan x + \sec x + c$
   (c) $\tan\dfrac{x}{2} + c$ (d) None

5. $\int \left(\sin\dfrac{x}{2} + \cos\dfrac{x}{2}\right)^2 dx =$
   (a) $x + \cos x + c$ (b) $x - \cos x + c$
   (c) $-x + \cos x + c$ (d) None

6. $\int \left(x - \dfrac{1}{x}\right)^2 dx =$
   (a) $\dfrac{1}{3}\left(x - \dfrac{1}{x}\right)^3 + c$ (b) $\dfrac{x^3}{3} - 2x - \dfrac{1}{x} + c$
   (c) $\dfrac{x^3}{3} + 2x + \dfrac{1}{x} + c$ (d) None

7. $\int \dfrac{1}{x\log x} dx =$
   (a) $\log x$ (b) $\log\log x$
   (c) $\log\log\log x$ (d) None

8. $\int \dfrac{\sqrt{x^2} + \sqrt[4]{x} + \sqrt[3]{x}}{\sqrt{x}} dx =$
   (a) $\dfrac{6}{7}x^{7/6} + \dfrac{4}{3}x^{3/4} + \dfrac{6}{5}x^{5/6} + c$
   (b) $-\dfrac{6}{5}x^{5/6} + \dfrac{4}{3}x^{3/4} - \dfrac{6}{5}x^{7/6} + c$
   (c) $\dfrac{6}{5}x^{1/6} + \dfrac{4}{5}x^{3/4} - \dfrac{6}{5}x^{5/6} + c$ (d) None

9. $\int \dfrac{e^{\sin(\log x)}\cos(\log x)}{x} dx =$

(a) $\dfrac{e^{\sin(\log x)}}{x}+c$ (b) $e^{\cos(\log x)}+c$

(c) $e^{\sin(\log x)}+c$ (d) None

10. $\int \dfrac{\sin\sqrt{x}}{\sqrt{x}}dx =$

(a) $\cos\sqrt{x}+c$ (b) $-2\cos\sqrt{x}+c$

(c) $2\cos\sqrt{x}+c$ (d) $2\sin\sqrt{x}+c$

11. $\int e^{e^{e^x}}e^{e^x}e^x dx =$

(a) $\dfrac{1}{2}e^{e^x}$ (b) $\left(e^{e^x}\right)^2$ (c) $e^{e^{e^x}}$ (d) $\dfrac{1}{2}e^{e^{e^x}}$

12. $\int \dfrac{2e^x}{e^{2x}+1}dx =$

(a) $\log(e^x+e^{-x})+c$ (b) $2\tan^{-1}e^x+c$

(c) $\log(1+e^{2x})+c$ (d) $\tan^{-1}(2e^x+1)+c$

13. $\int \dfrac{\sqrt{\tan x}}{2\sin x\cos x}dx =$

(a) $\sqrt{\tan x}$ (b) $2\sqrt{\tan x}$ (c) $\dfrac{1}{2}\sqrt{\tan x}$ (d) $\dfrac{1}{2}\tan x$

14. $\dfrac{dI}{dy}=3^{\cos y}.\sin y$, then I is equals to

(a) $3^{\cos y}+c$ (b) $-\dfrac{3^{\cos y}}{\log 3}+c$

(c) $\sin y+c$ (d) None

15. $\int x^2 e^{x^3}\cos(e^{x^3})dx =$

(a) $\sin(e^{x^3})+c$ (b) $3\sin(e^{x^3})+c$

(c) $\dfrac{1}{3}\sin(e^{x^3})+c$ (d) $e^x\sin(e^{x^3})+c$

16. $\int \dfrac{(1+\log x)^2}{x}dx =$

(a) $1+\log x$ (b) $3(1+\log x)^3$

(c) $\dfrac{1}{3}(1+\log x)^3$ (d) None

17. $\int \sec^m x\tan x dx =$

(a) $\dfrac{1}{m}\sec^m x+c$ (b) $-\dfrac{1}{m}\sec^m x+c$

(c) $\sec^m x+c$ (d) None

18. $\int \sec^3 x dx =$

(a) $\dfrac{1}{2}\tan x\sec x+c$

(b) $\dfrac{1}{2}\log|\sec x+\tan x|+c$

(c) $\dfrac{1}{2}\sec x\tan x+\dfrac{1}{2}\log|\sec x+\tan x|+c$ (d) None

19. $\int \dfrac{\log(x^2)}{x}dx =$

(a) $(\log x)^2+c$ (b) $\dfrac{(\log x)^2}{2}+c$

(c) $\log(x^2)+c$ (d) None

20. $\int \dfrac{2x+3}{x^2+2x+2}dx =$

(a) $\tan^{-1}(x+2)+c$

(b) $\tan^{-1}(x+1)-\log|x^2+2x+2|+c$

(c) $\log|x^2+2x+2|+x+c$

(d) $\tan^{-1}(x+1)+\log|x^2+2x+2|+c$

21. $\int \sqrt{\dfrac{\cos x-\cos^3 x}{1-\cos^3 x}}dx =$

(a) $-\dfrac{2}{3}\sin^{-1}(\cos^{3/2}x)+c$ (b) $\dfrac{2}{3}\cos^{-1}(\cos^{3/2}x)+c$

(c) $-\dfrac{3}{2}\sin^{-1}(\cos^{3/2}x)+c$ (d) $\dfrac{3}{2}\cos^{-1}(\cos^{3/2}x)+c$

22. $\int \dfrac{x}{(a^2-x^2)^{1/2}}dx =$

(a) $\dfrac{x}{\sqrt{a^2-x^2}}+c$ (b) $\dfrac{-1}{\sqrt{a^2-x^2}}+c$

(c) $\dfrac{1}{\sqrt{a^2-x^2}}+c$ (d) None

23. $\int e^{\sqrt{x}}dx =$

(a) $2e^{\sqrt{x}}(\sqrt{x}+1)+c$ (b) $2e^{\sqrt{x}}(\sqrt{x}-1)+c$

(c) $e^{\sqrt{x}}(\sqrt{x}-1)+c$ (d) None

24. $\int [\sin(\log x)+\cos(\log x)]dx =$

(a) $x\sin(\log x)+c$

(b) $\sin(\log x)+\cos(\log x)+c$

(c) $x\cos(\log x)+c$ (d) None

25. $\int \dfrac{dx}{\sqrt{(x-1)(4-x)}} =$

(a) $\sin^{-1}\dfrac{2x-5}{3}+c$ (b) $\sin^{-1}\dfrac{x-1}{3}+c$

(c) $\sin^{-1}\dfrac{4-x}{3}+c$ (d) None

26. $\int e^x(\log\sin x+\cot x)dx =$

(a) $e^x\cot x+c$ (b) $e^x\log\sin x+c$

(c) $e^x\tan x+c$ (d) None

27. $\int \dfrac{\sin 2x}{1+\sin^2 x}dx =$

(a) $\tan^{-1}(\sin x)+c$ (b) $\tan^{-1}(\cos x)+c$

(c) $\log(1+\sin^2 x)+c$ (d) $\log(\sin^2 x+x)+c$

28. A primitive of $|x|$, when $x<0$ is

(a) $\dfrac{1}{2}x^2+c$ (b) $-\dfrac{1}{2}x^2+c$ (c) $x+c$ (d) $-x+c$

29. $\int \dfrac{1}{\sqrt{2ax-x^2}} =$

(a) $\sin^{-1}\left(\dfrac{x-a}{a}\right)$ (b) $\tan^{-1}\left(\dfrac{x-a}{a}\right)$

(c) $\cos^{-1}\left(\dfrac{x-a}{a}\right)$ (d) $\dfrac{1}{a}\tan^{-1}\left(\dfrac{x-a}{a}\right)$

30. $\int \dfrac{a^{\sqrt{x}}}{\sqrt{x}}dx =$

(a) $2a^{\sqrt{x}}\log_e a$ (b) $2a^{\sqrt{x}}\log_a e$

(c) $2a^{\sqrt{x}}\log_{10} a$ (d) $2a^{\sqrt{x}}\log_a 10$

31. The primitive of $\dfrac{1}{1+e^x}$ is

(a) $\log(1+e^x)+c$ (b) $-\log(1+e^{-x})+c$

(c) $\log(1-e^{-x})+c$ (d) $-\log(1-e^{-x})+c$

32. $\int x\log x\,dx =$

(a) $\dfrac{x^2}{2}\log x + \dfrac{x}{4}\log x - \dfrac{x^2}{4}+c$

(b) $\dfrac{x^2}{2}\log x - \dfrac{x}{4}\log x - \dfrac{x^2}{4}+c$

(c) $\dfrac{x^2}{2}\log x - \dfrac{x}{4}\log x + \dfrac{x^2}{4}+c$

(d) $\dfrac{x^2}{2}\log x - \dfrac{x^2}{4}+c$

33. $\int a^{3x+3}\,dx, (a\neq -1)$ is equal to

(a) $\dfrac{a^{3x+3}}{3\log a}+c$ (b) $\dfrac{a^{3x+3}}{3x+4}+c$

(c) $\dfrac{a^{3x+3}}{\log a}+c$ (d) $\dfrac{a^{3x+3}}{3(x+1)}+c$

34. $\int e^x \sin x\,dx =$

(a) $e^x(\sin x - \cos x)+c$ (b) $e^x(\sin x + \cos x)+c$

(c) $\dfrac{1}{2}e^x(\sin x - \cos x)+c$ (d) $\dfrac{1}{2}e^x(\sin x + \cos x)+c$

35. $\int \dfrac{1}{3-2x-x^2}\,dx =$

(a) $\dfrac{1}{4}\log\left(\dfrac{3+x}{1-x}\right)+c$ (b) $\dfrac{1}{3}\log\left(\dfrac{3+x}{1-x}\right)+c$

(c) $\dfrac{1}{2}\log\left(\dfrac{3+x}{1-x}\right)+c$ (d) $\log\left(\dfrac{1-x}{3+x}\right)+c$

36. $\int e^x(1-\cot x+\cot^2 x)\,dx =$

(a) $e^x\cot x+c$ (b) $-e^x\cot x+c$

(c) $e^x\cos ec x+c$ (d) $-e^x\cos ec x+c$

37. $\int(x-1)e^{-x}\,dx =$

(a) $xe^{-x}+c$ (b) $-xe^{-x}+c$

(c) xe^x+c (d) $-xe^x+c$

38. $\int \dfrac{\sin^6 x}{\cos^8 x}\,dx =$

(a) $\tan^7 x+c$ (b) $\dfrac{\tan^7 x}{7}+c$

(c) $\dfrac{\tan 7x}{7}+c$ (d) $\sec^7 x+c$

39. $\int \tan x \tan 2x \tan 3x\,dx =$

(a) $\dfrac{1}{3}\log|\sec 3x| - \dfrac{1}{2}\log|\sec 2x| + \log|\sec x|+c$

(b) $\dfrac{1}{3}\log|\sec 3x| - \dfrac{1}{2}\log|\sec 2x| - \log|\sec x|+c$

(c) $\dfrac{1}{3}\log|\sec 3x| + \dfrac{1}{2}\log|\sec 2x| + \log|\sec x|+c$

(d) None

40. $\int\left(e^{a\log x} + e^{x\log a}\right)dx =$

(a) $\dfrac{x^{a+1}}{a+1}+c$ (b) $x^{a+1}+a^x+c$

(c) $\dfrac{x^{a-1}}{a-1}+\dfrac{\log a}{a^x}+c$ (d) $\dfrac{x^{a+1}}{a+1}+\dfrac{a^x}{\log a}+c$

HINTS

1. (b) $\int(\sec x \tan x + \cos ec x \cot x)dx$

2. (b) $\int \dfrac{2\sin^2 x}{2\cos^2 x}dx = \int(\sec^2 x - 1)dx$

3. (a) $\int \dfrac{(1-x)(1+x+x^2+x^3)}{1-x}dx$

4. (a) $\int \dfrac{1-\sin x}{1-\sin^2 x}dx = \int \dfrac{1-\sin x}{\cos^2 x}dx$

   $= \int(\sec^2 x - \sec x \tan x)dx$

5. (b) $\int(1+2\sin(x/2)\cos(x/2))dx = \int(1+\sin x)dx$

6. (b) $\int\left(x^2+\dfrac{1}{x^2}-2\right)dx$

7. (b) $\int \dfrac{1}{x\log x}dx = \int \dfrac{(1/x)}{\log x}dx$

8. (a) $\int \dfrac{x^{2/3}+x^{1/4}+x^{1/3}}{x^{1/2}}dx$

   $= \int\left(x^{1/6}+x^{-1/4}+x^{-1.6}\right)dx$

9. (c) Put $\sin\log x = t \Rightarrow \dfrac{\cos\log x}{x} = dt$ and

   proceed. OR differentiate back from options

10. (b) Put $\sqrt{x}=t \Rightarrow \dfrac{1}{2\sqrt{x}}dx = dt$. So

    $I = \int \sin t.2.dt$

11. (c) Put $e^{e^x} = t \Rightarrow e^{e^x}e^x dx = dt$

    $I = \int e^t dt = e^t +c$

12. (b) Put $e^x = t \Rightarrow I = \int \dfrac{2dt}{1+t^2}dt = 2\tan^{-1}t+c$

13. (a) $I = \dfrac{1}{2}\int \dfrac{\sqrt{\tan x}}{\tan x}\sec^2 x\,dx = \int \dfrac{\sec^2 x}{2\sqrt{\tan x}}dx$

    $= \sqrt{\tan x}+c$

14. (b) $I = 3^{\cos y}\sin y\,dy.$

    Put $\cos y = t \Rightarrow -\sin y\,dy = dt$

    $I = -\int 3^t dt = -\dfrac{3^t}{\log 3}+c$

15. (c) Put $e^{x^3}=t \Rightarrow e^{x^3}.3x^2.dx = dt$

    $I = \dfrac{1}{3}\int \cos t\,dt = \dfrac{1}{3}\sin t+c$

16. (c) $\dfrac{d}{dx}[1+\log x]=\dfrac{1}{x}$

17. (a) $\int \sec^{m-1} x.\sec x \tan x\,dx$

    Put $\sec x = t \Rightarrow \sec x \tan x\,dx = dt$

    $I = \int t^{m-1}dt = \dfrac{t^m}{m}+c$

18. (c) $\int \sec^2 x.\sec x\,dx = \int \sqrt{1+\tan^2 x}\sec^2 x\,dx$

    Put $\tan x = t \Rightarrow \sec^2 x\,dx = dt$

    $I = \sqrt{1+t^2}dt = \dfrac{t\sqrt{1+t^2}}{2}+\dfrac{1}{2}\log\left|t+\sqrt{1+t^2}\right|+c$

19. (a) $\int \dfrac{2\log x}{x}\,dx$

20. (d) $I = \int \dfrac{2x+2}{x^2+2x+2}\,dx + \int \dfrac{1}{(x+1)^2+1}\,dx$

$= \log\left|x^2+2x+2\right| + \tan^{-1}(x+1) + c$

21. (a) $I = \int \dfrac{\sqrt{\cos x}\,\sin x}{\sqrt{1-\left(\cos^{3/2}x\right)^2}}\,dx$

Put $\cos^{3/2}x = t \Rightarrow \dfrac{3}{2}\sqrt{\cos x}(-\sin x)dx = dt$

$I = -\dfrac{2}{3}\int \dfrac{1}{\sqrt{1-t^2}}\,dt = -\dfrac{2}{3}\sin^{-1}t + c$

22. (c) Put $x^2 = t \Rightarrow 2x\,dx = dt$

$I = \dfrac{1}{2}\int \dfrac{1}{\left(a^2-t\right)^{3/2}}\,dt = \dfrac{1}{2}\cdot\dfrac{\left(a^2-t\right)^{-1/2}\cdot(-1)}{-(1/2)}$

23. (b) Put $\sqrt{x} = t \Rightarrow dx = 2t\,dt$

$I = 2\int e^t t\,dt = 2e^t(t-1)+c$

24. (a) Put $\log x = t \Rightarrow \dfrac{1}{x}\,dx = dt \Rightarrow dx = e^t\,dt$

$I = \int (\sin t + \cos t)e^t\,dt = e^t \sin t + c$

$= e^{\log x}\sin\log x + c = x\sin\log x + c$

25. (a) $\int \dfrac{dx}{\sqrt{5x-4-x^2}} = \int \dfrac{dx}{\sqrt{\left(\frac{3}{2}\right)^2 - \left(x-\frac{5}{2}\right)^2}}$

$= \sin^{-1}\dfrac{x-(5/2)}{(3/2)} + c = \sin^{-1}\dfrac{2x-5}{3} + c$

26. (b) Since $\dfrac{d}{dx}(\log\sin x) = \cot x$

27. (c) $\dfrac{d}{dx}\left(1+\sin^2 x\right) = \sin 2x$

28. (b) $|x| = -x$ when $x < 0$, Sp primitive

$= \int |x|\,dx = \int -x\,dx = -\dfrac{x^2}{2} + c$

29. (a) $\int \dfrac{1}{\sqrt{a^2-(x-a)^2}}\,dx = \sin^{-1}\left(\dfrac{x-a}{a}\right) + c$

30. (b) Put $\sqrt{x} = t \Rightarrow \dfrac{dx}{2\sqrt{x}} = dt$

$I = 2\int a^t\,dt = \dfrac{2a^t}{\log_a a} = 2a^{\sqrt{x}}\log_a e$

31. (b) $\int \left(\dfrac{1+e^x}{1+e^x} - \dfrac{e^x}{1+e^x}\right)dx = x - \log\left(1+e^x\right) + c$

$= \log e^x - \log\left(1+e^x\right) + c = \log\left(\dfrac{e^x}{1+e^x}\right) + c$

$= \log\left(\dfrac{1}{1+e^{-x}}\right) + c = -\log\left(1+e^{-x}\right) + c$

32. (d) $\int x\log x\,dx = \log x \cdot \dfrac{x^2}{2} - \int \dfrac{1}{x}\cdot\dfrac{x^2}{2}\,dx + c$

$\dfrac{x^2\log x}{2} - \dfrac{x^2}{4} + c$

33. (a)

34. (c) $\int e^{ax}\sin bx\,dx = \dfrac{e^{ax}}{a^2+b^2}\left[a\sin bx - b\cos bx\right] + c$

$\int e^{ax}\cos bx\,dx = \dfrac{e^{ax}}{a^2+b^2}\left[a\cos bx + b\sin bx\right] + c$

35. (a) $\int \dfrac{1}{4-(x+1)^2}\,dx = \dfrac{1}{2.2}\log\left(\dfrac{2+x+1}{2-(x+1)}\right) + c$

36. (b) $\int e^x\left(-\cot x + 1 + \cot^2 x\right)dx$

$= \int e^x\left(-\cot x + \cosec^2 x\right)dx = -e^x\cot x + c$

37. (b) $(x-1)\dfrac{e^{-x}}{-1} - \int \dfrac{e^{-x}}{-1}\,dx + c$

$= -xe^{-x} + e^{-x} - e^{-x} + c = -xe^{-x} + c$

38. (b) $\int \tan^6 x\sec^2 x\,dx = \dfrac{\tan^7 x}{7} + c$

39. (b) $\tan 3x = \dfrac{\tan x + \tan 2x}{1 - \tan x\tan 2x}$

$\tan 3x - \tan x\tan 2x\tan 3x = \tan x + \tan 2x$

$\Rightarrow \tan x\tan 2x\tan 3x = \tan 3x - \tan x - \tan 2x$

Now integrate

40. (d) $\int \left(e^{\log x^a} + e^{\log a^x}\right)dx = \int \left(x^a + a^x\right)dx$

$= \dfrac{x^{a+1}}{a+1} + \dfrac{a^x}{\log a} + c$

BSc STATISTICS   Bridge Course

S.L.No	NAME	11/10	12/10 FN	12/10 AN				Mob: No:
1,	SANDRA . K	*signature*	*signature*	*signature*				9961609585
2,	SNEHA . SASIDHARAN	*signature*	*signature*	*signature*				7025760536
3,	NAYANA . SAJEEVAN	*signature*	*signature*	*signature*				6283575663
4	Aparna . P1	*signature*	*signature*	*signature*				8138848234
5	SAFA MANSOOR	*signature*	*signature*	*signature*				7619442779
6	SHAIMA	*signature*	*signature*	*signature*				9947030385
7	SREELAKSHMI PM	*signature*	*signature*	*signature*				7907953257

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23.	RIZWANA P	*sign*	*sign*	*sign*		7306424978
24.	Nasna Mehazin P.P	*sign*	*sign*	*sign*		9562261365
25.	Shada Shazin u	*sign*				9961949654
26.	Shahma P.M	*sign*	*sign*	*sign*		7994334152
27.	Kunhamina p k	*sign*	*sign*	*sign*		8921989608
	Shahbana mk	*sign*	*sign*	*sign*		7306489134
29.	Fath Saja Muthalib	*sign*	*sign*	*sign*		8113877426
30.	Rena Rasheed	*sign*	*sign*	*sign*		9567561533
31.	Fathimathul Afra	*sign*	*sign*	*sign*		9142225757
32.	RAZA RASIK	*sign*	*sign*	*sign*		6282921682
33.	NADHA FATHIMA	*sign*				9744434059
34.	Jasmine M	*sign*	*sign*	*sign*		9496190354
	Muhammed Thabsheer AM	*sign*	*sign*	*sign*		8089944895

BSc STATISTICS

Sl.No / Name	NAME	Signature					Mob No:
		11/10	12/10	12/10 AN			
8	MUHAJIR . K						9744149743
9	Nripanjay Sreedeep						9496863967
10	Rahul.P						7510966157
11	Muhammad Ibrahim A						9605807802
12	Ahamad Saood						8547731541
13	Muhd. Razeen. C.H						9656025009
14.	Muhammed Rizwin						9544219287
15.	Ramzan Muhammed.c						9061040044
16.	Aswanth.A						9778381026
17.	Fathima .k						9744432721
18.	Fathima.mp						8606002122
19.	Rishana muhammed Iqbal						9746012970.
20.	Fathimabi. pp						9567114918
21.	Fathimathul Nida T.K.P						
22.	Muhsina. c.K						8921496979
22.	Fathima. mj						7025505299

2022-23 Academic Year.

BRIDGE COURSE IN CHEMISTRY
FOR
BSc CHEMISTRY

SIR SYED COLLEGE
DEPARTMENT OF CHEMISTRY
2022-2025 BATCH

Coordinator   HoD
SHAHABANU.P   Dr.BIJU.A.R

SYLLABUS

CHEMISTRY BRIDGE COURSE

SIR SYED COLLEGE

DEPARTMENT OF CHEMISTRY

The syllabus is prepared based on an interdisciplinary approach and aim to provide the students a deep understanding of the basic concepts of chemical sciences by acquiring the knowledge of terms, facts, concepts, processes, techniques and principles of the subject

CONTACT HOURS-30

UNIT 1

STRUCTURE OF ATOM   **5 hours**

Discovery of Sub-atomic Particles ,Atomic Models ,Developments Leading to the Bohr's Model of Atom,Bohr's Model for Hydrogen Atom,Quantum Mechanical Model of the Atom

UNIT 2

CHEMICAL BONDING   **5 hours**

Ionic or Electrovalent Bond,The Valence Shell Electron Pair Repulsion (VSEPR) Theory, Valence Bond Theory , Hybridisation ,Molecular Orbital Theory, Bonding in Some Homonuclear Diatomic Molecules ,Hydrogen Bonding

UNIT 3

CLASSIFICATION OF ELEMENTS AND PERIODICITY IN PROPERTIES   **5 hours**

Genesis of Periodic Classification,Modern Periodic Law and the Present Form of the Periodic Table , Nomenclature of Elements with Atomic Numbers > 100 ,Electronic Configurations and Types of Elements,s, p, d, f Blocks, Periodic Trends in Properties of Elements

UNIT 4

Hydrogen, s-Block and p-Block Elements   **5 hours**

Dihydrogen- Preparation, Properties,Water,Heavy water,Hydrogen peroxide,Dihydrogen as fuel, Alkali & Alkaline Earth Matals-General Characteristics

Group 13 elements,Important Trends and Anomalous Properties of Boron,

Group 14 elements, Important Trends and Anomalous Properties of Carbon.

UNIT 5

SOME   **BASIC**   **CONCPETS**   **OF**   **CHEMISTRY**

5hours

Terms used in evaluation of analytical data – significant figures – Rounding of the numerical expression –

Errors – Ways to reduce systematic errors Precision and accuracy. Titrimetric analysis – Fundamental

concepts – mole, molarity,normality, molality, ppm, and ppb ,mole fraction–

UNIT 6

ORGANIC CHEMISTRY-SOME BASIC PRINCIPLES AND TECHNIQUES   **5 hours**

General Introduction,Nomenclature of Organic Compounds,Isomerism,Fundamental concepts in

Organic Reaction Mechanism.Introduction to Halo alkanes,Alcohols Phenols,Ethers, Aldehydes,

Ketones,Carboxylic acid,Amines

DESCRIPTION ABOUT BRIDGE COURSE

BRIDGE COURSE IN CHEMISTRY FOR FIRST YEAR GRADUATE STUDENTS:

A bridge course in chemistry typically serves as a preparatory or remedial program that helps students transition from one level of education to another, or to fill gaps in their knowledge and skills. These courses offer several benefits:

Smooth Transition: Bridge courses help students transition from one educational level to another, such as from high school to college or from undergraduate to graduate studies. They can help bridge the gap between the prerequisite knowledge and skills required for success at the next level.

❖ The main objective of the course is to bridge the gap between subjects studied at school level and subjects they would be studying in Graduation.

❖ The syllabus for the course is framed in such a way that they get basic knowledge on the subjects which they would be learning through graduation.

❖ Accordingly, the Bridge Course has been prepared with the dual objective of reviewing the studies done by the students in the previous academic year and helping them to learn the curriculum of the present class in this academic year.

❖ During the first week after the commencement of the classes, the bridge course curriculum can be delivered to the students.

Aim of the Bridge course in Chemistry

➢ To make "learning of Mathematics as a pleasant experience".

➢ To enhance the performance of students

SIR SYED COLLEGE
DEPARTMENT OF CHEMISTRY
BRIDGE COURSE ATTENDANCE
2022-2025 BATCH

SL. NO	ROLL NO	NAME	12/11/22	12/11/22	12/12/22	13/12/22	13/12/22	15/11/22	15/11/22	17/12/22	17/11/22
1	2325	AYISHATH LULU A R									
2	2326	FATHIMA N K									
3	2328	FATHIMATHUL NAHLA									
4	2329	FIDHA FATHIMA									
5	2330	JUMANA HARIS P									
6	2331	MARFIYA A K									
7	2332	MIHADH M									
8	2334	SAFA A M									
9	2335	SHAFNA SHERIN K K									
10	2336	SHAHEEDA K K									
11	2338	ARYA SURESH									
12	2339	DEVRAJ									
13	2340	FATHIMATHUL HANA M P									
14	2341	FATHIMATHUL SHINSINA P K									
15	2342	JISHANA N									
16	2343	KRISHNENDU V									
17	2345	NANDANA S									
18	2346	RISHA FARHEEN M K									
19	2347	SANAA ABDUL NASSAR									
20	2348	SANIYA A									
21	2349	SHAHANA SHERIN K									
22	2350	SREELAKSHMI K									
23	2351	THAMANNA GAFOOR									
24	2352	AFEENA M									
25	2354	AKSHAY KP									
26	2355	AMALJITH P									
27	2356	FABEENA RASHEED									

28	2357	FATHIMATH SHIFA VP									
29	2358	FATHIMATHUL FIDA V N									
30	2359	HANNA A V									
31	2360	IRFANA V									
32	2361	JALISHA K P									
33	2362	JINTO JAMES									
34	2363	MUHAMMAD SAHAL									
35	2364	NAFEESA YASMINE P C									
36	2365	RANA T									
37	2366	SAFA SULTHANA K V									
38	2367	SARA YASMINE P C									
39	2368	FATHIMATH HIBA BINTH HARIS									

SIR SYED COLLEGE
DEPARTMENT OF CHEMISTRY
BRIDGE COURSE ATTENDANCE
2022-2025 BATCH

SL. NO	ROLL NO	NAME	6/2/23	10/2/23	10/2/23	14/2/23	14/2/23	14/2/23	17/2/23	17/2/23	17/2/23	17/2/23
1	2325	AYISHATH LULU A R										
2	2326	FATHIMA N K										
3	2328	FATHIMATHUL NAHLA										
4	2329	FIDHA FATHIMA										
5	2330	JUMANA HARIS P										
6	2331	MARFIYA A K										
7	2332	MIHADH M										
8	2334	SAFA A M										
9	2335	SHAFNA SHERIN K K										
10	2336	SHAHEEDA K K										
11	2338	ARYA SURESH										
12	2339	DEVRAJ										
13	2340	FATHIMATHUL HANA M P										
14	2341	FATHIMATHUL SHINSINA P K										
15	2342	JISHANA N										
16	2343	KRISHNENDU V										
17	2345	NANDANA S										
18	2346	RISHA FARHEEN M K										
19	2347	SANAA ABDUL NASSAR										
20	2348	SANIYA A										
21	2349	SHAHANA SHERIN K										
22	2350	SREELAKSHMI K										
23	2351	THAMANNA GAFOOR										
24	2352	AFEENA M										
25	2354	AKSHAY KP										
26	2355	AMALJITH P										
27	2356	FABEENA RASHEED										

28	2357	FATHIMATH SHIFA VP										
29	2358	FATHIMATHUL FIDA V N										
30	2359	HANNA A V										
31	2360	IRFANA V										
32	2361	JALISHA K P										
33	2362	JINTO JAMES										
34	2363	MUHAMMAD SAHAL										
35	2364	NAFEESA YASMINE P C										
36	2365	RANA T										
37	2366	SAFA SULTHANA K V										
38	2367	SARA YASMINE P C										
39	2368	FATHIMATH HIBA BINTH HARIS										

SIR SYED COLLEGE
DEPARTMENT OF CHEMISTRY
BRIDGE COURSE ATTENDANCE
2022-2025 BATCH

SL. NO	ROLL NO	NAME	27/07/23	27/07/23	27/07/23	01/08/23	01/08/23	01/08/23	01/08/23	02/08/23	02/08/23	03/08/23
1	2325	AYISHATH LULU A R										
2	2326	FATHIMA N K										
3	2328	FATHIMATHUL NAHLA										
4	2329	FIDHA FATHIMA										
5	2330	JUMANA HARIS P										
6	2331	MARFIYA A K										
7	2332	MIHADH M										
8	2334	SAFA A M										
9	2335	SHAFNA SHERIN K K										
10	2336	SHAHEEDA K K										
11	2338	ARYA SURESH										
12	2339	DEVRAJ										
13	2340	FATHIMATHUL HANA M P										
14	2341	FATHIMATHUL SHINSINA P K										
15	2342	JISHANA N										
16	2343	KRISHNENDU V										
17	2345	NANDANA S										
18	2346	RISHA FARHEEN M K										
19	2347	SANAA ABDUL NASSAR										
20	2348	SANIYA A										
21	2349	SHAHANA SHERIN K										
22	2350	SREELAKSHMI K										
23	2351	THAMANNA GAFOOR										
24	2352	AFEENA M										
25	2354	AKSHAY KP										
26	2355	AMALJITH P										
27	2356	FABEENA RASHEED										

28	2357	FATHIMATH SHIFA VP									
29	2358	FATHIMATHUL FIDA V N									
30	2359	HANNA A V									
31	2360	IRFANA V									
32	2361	JALISHA K P									
33	2362	JINTO JAMES									
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35	2364	NAFEESA YASMINE P C									
36	2365	RANA T									
37	2366	SAFA SULTHANA K V									
38	2367	SARA YASMINE P C									
39	2368	FATHIMATH HIBA BINTH HARIS									

MARKS:20

TIME:2Hr

3X1=3 MARKS

SECTION A

(Answer all the questions)

1. Bohr's orbits are called stationary states because....
2. The orbitals having same energy are called _____ orbitals.
3. The shape of covalent molecule ClF_3 is _____

2X4=8 MARKS

SECTION B

(Answer all the questions)

4. What is the difference between bonding molecular orbital and antibonding molecular orbital?
5. Give the biological importance of Na and K
6. Why does boron trifluoride behave as a Lewis acid?
7. Calculate the molarity of a solution of ethanol in water in which the mole fraction of ethanol is 0.040.

3X3=9 MARKS

SECTION C

(Answer all the questions)

8. i) Draw the structure of propanone. Write the hybridisation of each carbon in propanone.
   ii) Arrange the following carbocations in the increasing order of their stability. Justify.
   CH_3^+, $CH_3CH_2^+$, $(CH_3)_2CH^+$
9. What is the basic difference in approach between Mendeleev's Periodic Law and the Modern Periodic Law?
10. What is heavy water? Mention one use of heavy water. Explain why hydrogen peroxide is not stored in glass vessels.

1. Bohr's orbits are called stationary states because the energies of the orbits in which the electrons revolve are fix.

2) The orbitals having same energy are called degenerating orbitals.

3) T shaped.

4) Bonding molecular orbitals have lower energy as compared to the parent atomic orbitals. Anti bonding molecular orbital possess higher energy comparatively. The spatial configuration of the BMO's represents the molecular geometry or shape. The spatial configuration of ABMO doesn't represent molecular geometry.

5) Biological importance of, Na:

The sodium in the body is used to regulate blood pressure and blood volume. Sodium is also required by body in order for your muscles and nerves to function properly.

Calcium:

Calcium is one of the most important minerals for the human body. It helps form

and maintain healthy teat teeth and bone.

6) It can form only three covalent bonds. Th means that there are only six electrons an boron and its octet remains incomplete. whe one atom of boron combines with three flou atoms, its octet remains incomplete. Hence boron trifluoride remains electron deficient act as a lewis acid.

10) Heavy water is a compound that is made up of oxygen and deuterium, a heavier isotope of hydrogen which is denoted by ^2H or D'. Heavy water is also called deuterium oxide and is denoted by D_2O.

Uses:
- Heavy water is used for the preparation of deuterium
- used as tracer to study the mechanism of respiration and photosynthesis.
- Heavy water is used as a moderator in nuclear reactor.

Hydrogen peroxide is a highly reactive che-
mical. It is highly unstable and slowly decomp-
oses when kept in presence of light. Due to
this H_2O_2 kept in ambered coloured bottles.

9) Mendaeleev's periodic law states that physical
and chemical properties of elements are perio-
dic function of their atomic weights.

Modern periodic law states that the physical
and chemical properties of elements are
periodice function of their atomic number

Mendaleev's periodic table contains significantly
less elements than modern periodic table.
Mendaleev's table didn't cetegorize the eleme-
nts as metals, metalloids and non metals.
Mendaleev arranged elements ascendinly
according to atomic masses while Mosely
arranged them ascendingly according to
atomic number.

Detailed Syllabus (Theory and Practical) with references and model question paper

Name of Bridge Course-:   Introduction to Forestry

Duration of the course	Course Code	Hours per week	Credit and Modules	Exam Hours
30 hours		3	III	1

Module I: Forests   (10 Hrs)

Forests - definitions and role. Benefit - direct and indirect. History of Forestry Forestry - definitions, divisions and interrelationships. Classification of forests. Basic concepts on Forest types of India. Important acts and policies related to Indian forests

Module II: Biomes of the World   (10 Hrs)

Introductions to world forests - Geographical distribution of forests and theirclassification. Factors influencing global forest distribution - productivity potential and increment of world forests.Forest resources and forestry practices in different eco-regions of the world. Generalproblems of forest development and economy

Module III: Forest and current affairs   (10 Hrs)

Global warming and climate change- GHG emissions- forestry options for mitigation and Adaptation - carbon sequestration/carbon conservation/carbon substitution- AR-CDM projects. Recent trends in forestry development in the world. National and international organizations in forestry. Important events/dates related to forests and environment-themes and philosophy.

References

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