

# SYLLABUS

SESSION 2024–25

CLASS – XII

For further details students must go through I.S.C. 2025 Syllabus Booklet.

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## ENGLISH LANGUAGE

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### Term 1

#### March

1

#### Pattern of English language paper-ISC

##### Learning outcome –

Through this particular exercise the students will come to know about the exact format of the ISC questions paper.

2

#### The art of writing Essays [NARRATIVE ESSAY]

##### Learning outcome –

Children will learn to write effective narration. This is the most common kind of essay selection

#### The art of writing Essays [DESCRIPTIVE ESSAY]

##### + Test paper-1

##### Learning outcome –

Here the children will learn to describe an action, incident or a phenomenon through the art of descriptive writing.

#### The art of writing Essays [REFLECTIVE ESSAY]

##### Learning outcome –

Children learn here to transform their ideas and channel them through reflection.

##### + Test paper-2

#### The art of writing Essays [ARGUMENTATIVE ESSAY]

##### Learning outcome –

Children will learn to express their opinions which will enable them to remain highly opinionated throughout their life.

#### The art of writing Essays [SHORT STORY]

##### Learning outcome –

Students will be able to spin tall yarn into stories which will promote their creative thinking and writing.

#### April

3

#### Directed writing

A

#### Article writing

##### + Test paper-3

##### Learning outcome –

Students will learn to identify the difference between newspaper report and article writing, they will learn to describe an event, experience, place or person.

B

#### Report Writing

##### Learning outcome –

Student will learn to write magazine and newspaper Report. The exercise will help to sum up an event or an accident.

C

#### Book/Film review

##### + Test paper-4

##### Learning outcome –

Students will be able write and understand the art of review writing.

D

#### Speech Writing

##### + Test paper-5

##### Learning outcome –

The students will be able to write effective and eloquent speeches.

E

#### Statement of purpose

##### Learning outcome –

Students learn to write SoP's which in long run will help them to build up their college portfolios.

**May**

**Proposal Writing**

**+ Test paper-6**

**Learning outcome –**

Students will learn to write proposals which will benefit them in taking grants for academic purpose.

**Grammar section**

**Learning outcome-**

Students will learn to solve grammatical errors. It will help them perform better at prepositions and transformation of sentences.

**July**

**Comprehension**

**+ Test paper-7**

**Learning outcome –**

Students will be able to concentrate as the following exercise will boost their concentration and critical thinking

**A**

**Tenses**

**Learning outcome –**

Students will be able to identify tenses in sentences.

**I Unit Test Syllabus**

**Article writing and transformation of sentences.**

**Term 2**

**July**

**+ Test paper-8**

**August**

**Sequence of Tenses**

**+ Test paper-9**

**Learning outcome –**

Through this chapter students will be able to determine the order of events in a sentence.

**B**

**Active and passive voice**

**Learning outcome –**

Students will learn to transform active sentences into passive and vice-versa.

**C**

**Direct and indirect speech**

**+ Test paper-10**

**Learning outcome –**

Students will learn to transform direct sentences into indirect sentences and vice-versa.

**D**

**Comparison of adjectives**

**+ Test paper-11**

**Learning outcome-**

The students will be able to adjudicate the degrees of comparison between adjectives.

**September**

**E**

**Conditional sentences**

**+ Test paper-12**

**Learning outcome –**

Children will learn the usages of hypothetical conditional sentences [imaginary sentences]

**F**

**Transformation of sentences I**

**+ Test paper-13**

**Learning outcome –**

Students will learn to define and transform sentences.

**G**

**Transformation of sentences II**

**+ Test paper-14**

**Learning outcome –**

Students will learn to define and transform sentences.

**H**

**prepositions**

**+ Test paper-15**

**Learning outcome –**

Children will learn the usages of different types of Prepositions.

**October**                                  **Test paper-16-20**

**Term 3**

**November**                              **Revision Test paper-21-25**

**December**                              **Revision**

**January**                                  **Revision**

**February**                                **Revision**



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**ENGLISH LITERATURE**

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**Term 1**

**March**

**Play**                                      **Act III sc I (Pages 106 – 119) + WB**

**Learning outcome –**

Children learn about the villainy of Macbeth and they will also witness how he became a hardened criminal after plotting the murder of his best friend Banquo.

**Prose**                                    **Atithi/Guest + WB**

**Learning outcome –**

Children will learn about the natural and wanderlust nature of the main character which will enrich their mindset and broaden their horizon.

**Poetry**                                  **Telephone conversation + WB**

**Learning outcome –**

Students will learn the darkness of racial discrimination. The poem is a biting satire on the racist attitude of the white people. .

**April**

**Play**                                      **Act III Sc II (Pages 120 – 125) + WB**

**Learning outcome –**

Through these scenes children will learn that lady Macbeth is disillusioned and is regretful for killing the king. Macbeth on the other hand hallucinates the ghost of his friend Banquo.

**Prose**                                    **The cookie lady + WB**

**Learning outcome –**

Students here will explore the concept of loneliness and will focus on their social behavioral skills.

**Poetry**                                  **Tithonus + WB**

**Learning outcome –**

Through this poem, the children will get a sneak-peek in the Greek mythology and they will come to know about Tithonus –son of king Laomedon who talks about his sorrows, sufferings and pain as an old man living with a goddess and experiencing agony due to the boon of immortality the poem teaches them the bizarre concept of wanting to live forever.

**May**

**Play**                                      **Act III Sc III and IV (Pages 126 – 145) + WB**

**Learning outcome –**

Through the delirious talks Macbeth will disclose his crimes. The ghost of Banquo seen by no one except Macbeth rebukes him, this will teach the children that treachery never comes in handy.

**Prose**                                    **There will come soft rains + WB**

**Learning outcome –**

Here the learner will come to a closure that AI is destructive and how future is controlled by them with no signs of humans around. The theme of the story is the great hold of machinery on human beings.

**Poetry**                                  **Beethoven + WB**

**Learning outcome –**

Students are able to learn to demonstrate the values of love and compassion.

**July**

**Play**                                      **Act III Sc V– VI (Pages 146 – 151)**

**Learning outcome –**

They learn about the strong and evil character of Hecate and how she is influencing the fateful meeting. They also learn here the atrocities of human misery .however scene VI is taken as a choice commentary which will introduce the children to the tyrannical rule of Macbeth.

**Prose** -

**Poetry** -

**I Unit Test Syllabus**

**Atithi / Guest**

**Term 2**

**July**

**Play** Introduction of Act IV

**Prose**

**Poetry** -

**August**

**Play** Act IV Sc I-III + WB (Pages152– 201)

**Learning outcome –**

Children learn about the false sense of security instilled in Macbeth by the witches they will also learn how evil, vulgar and ugly the witches are to the core. In sc II Macduff is seen fleeing to the court of England in order to seek assistance.

**Prose** Indigo + WB

**Learning outcome**

The students will learn a gripping story of horror and suspense where in the main character Aniruddha will encounter an almost paranormal phenomenon.

**Poetry** Small Towns and the River + WB

**Learning outcome –**The poetry teaches us that the dull and monotonous life of villages, despite all odd is beautiful.

**September**

**Play** Act V SC I-IX (Pages 202-243)

**learning outcome –**

Students learn about the plot development, character development, karma and how nothing good can ever churn out from evil and causing pain to others. The play teaches morals to the young learners and polishes their characters by delivering the message that greed is always the cause of all human misery.

**Prose** -

**Poetry** -

**October**

**Play** -

**Prose** The medicine bag+ WB

**Learning outcome –**

Through this story the Students learn about significance of culture and know the value of preserving it.

**Poetry Death be not proud+ WB**

**Learning outcome –**

Here the children learn two vital things, one their most precious childhood experiences and next is the formulation of adult identities and family relationships.

**Term 3**

**November-  
Play**

**Revision  
Act Reflection and Group Discussion**

**Prose** Discussion on conclusion

**Poetry** poet's introspect

**December**

**Play**

**Prose** Revision

<b>Poetry</b>	<b>Revision</b>
<b>January</b>	<b>Revision</b>
<b>Play</b>	<b>Plot Development + Sub Plot</b>

**Learning outcome –**

Through Plot Development students learn action and event, change, wonder and surprises in a play. Through sub – plot students learn about the turns and twists in a story.

<b>Prose</b>	<b>Revision</b>
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<b>Poetry</b>	<b>Revision</b>
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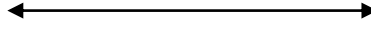
<b>February</b>	<b>Revision</b>
<b>Play</b>	<b>Character Description, Theme and Message (Revision)</b>

**Learning outcome –**

Students will be able to brush up all the characters, Theme of the play and what message does it give.

<b>Prose</b>	<b>Revision</b>
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<b>Poetry</b>	<b>Revision</b>
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## HINDI LANGUAGE

### Term 1

#### **March**

निबन्ध 29. समय का महत्व  
**सीखने का प्रतिफल–**  
समय के महत्व को समझकर छात्रों में अनुशासन की भावना का विकास होगा।

निबन्ध 30. हमारा प्यारा भारत वर्ष  
**सीखने का प्रतिफल–**  
देश प्रेम की भावना का विकास होगा।

निबन्ध 31. वह दुर्घटना जिसे मैं भुला न पाई  
**सीखने का प्रतिफल–**  
प्रकृति की सर्वोच्चता का ज्ञान प्राप्त होगा।

निबन्ध 32. स्वस्थ शरीर में स्वस्थ मस्तिष्क का वास  
**सीखने का प्रतिफल–**  
स्वास्थ्य रक्षा के महत्व तथा उपायों का ज्ञान मिलेगा।

निबन्ध 34. खेल कूद का जीवन में महत्व  
**सीखने का प्रतिफल–**  
खेलों के महत्व का ज्ञान प्राप्त होगा।

अपठित गद्यांश पेज नं0 108 से 111  
**सीखने का प्रतिफल–**  
प्रश्न का उत्तर देने की क्षमता का विकास होगा।

#### **April**

निबन्ध 35. बेरोजगारी की समस्या  
**सीखने का प्रतिफल–**  
बेरोजगारी के कारणों एवं निवारण का ज्ञान प्राप्त होगा।

निबन्ध 33. भारतीय नारी का आदर्श  
**सीखने का प्रतिफल–**  
समाज में नारियों के महत्व का बोध होगा।

निबन्ध 36. कम्प्यूटर: एक आवश्यकता  
**सीखने का प्रतिफल–**  
कम्प्यूटर का देश के विकास में योगदान की जानकारी मिलेगी।

निबन्ध 37. प्रदूषण की समस्या

**सीखने का प्रतिफल-**

प्रदूषण के कारणों को जानकर इनसे बचाव की प्रेरणा मिलेगी।

निबन्ध

38. सिनेमा का समाज पर प्रभाव

**सीखने का प्रतिफल-**

सिनेमा के हानि लाभों को समझकर इसके सदुपयोग की प्रेरणा मिलेगी।

मुहावरे

पेज नं0 178 से 181

**सीखने का प्रतिफल-**

मुहावरों के प्रयोग से भाषा प्रवाहपूर्ण एवं प्रभावशाली बनेगी।

लोकोक्तियाँ

पेज नं0 190

**सीखने का प्रतिफल-**

लोकोक्तियों के प्रयोग से भाषा प्रवाहपूर्ण, आकर्षक एवं प्रभावशाली बनेगी।

**May**

निबन्ध

39. परिश्रम का महत्व

**सीखने का प्रतिफल-**

परिश्रम के महत्व को समझकर जीवन को सुखी बनाने की प्रेरणा मिलेगी।

निबन्ध

40. मन के हारे हार है मन के जीते जीत

**सीखने का प्रतिफल-**

आत्मविश्वास के महत्व का बोध होगा।

निबन्ध

41. प्रकृति का संदेश

**सीखने का प्रतिफल-**

प्रकृति के महत्व को समझने में सहायता मिलेगी।

अपठित गद्यांश

पेज नं0 112 से 116

**सीखने का प्रतिफल-**

प्रश्न का उत्तर देने की क्षमता का विकास होगा।

व्यवहारिक व्याकरण

पेज नं0 196 से 200

**सीखने का प्रतिफल-**

वाक्य लेखन की क्षमता का विकास होगा।

**July**

निबन्ध

42. करुणामूर्ति मदर टेरेसा

**सीखने का प्रतिफल-**

मदर टेरेसा के जीवन चरित्र से उच्चादर्शों की प्रेरणा मिलेगी।

निबन्ध

43. मेरे सपनों का भारत

**सीखने का प्रतिफल-**

देश प्रेम के भाव से प्रेरित होकर इच्छाओं की अभिव्यक्ति की प्रेरणा मिलेगी।

अपठित गद्यांश

पेज नं0 117 से 120

**सीखने का प्रतिफल-**

प्रश्न का उत्तर देने की क्षमता का विकास होगा।

व्यवहारिक व्याकरण

पेज नं0 201 से 203

**सीखने का प्रतिफल-**

नये वाक्यों को लिखने की क्षमता का विकास होगा।

**I Unit Test Syllabus**

व्यवहारिक व्याकरण

पेज नं0 196 से 204

**Term 2**

**July**

निबन्ध

43. मेरे सपनों का भारत

**August**

निबन्ध

44. विद्यालय द्वारा आयोजित एक पर्यटन (गोवा यात्रा)

**सीखने का प्रतिफल—**

यात्रा साहित्य लेखन कला का विकास होगा।

अपठित गद्यांश

पेज नं० 121 से 125

**सीखने का प्रतिफल—**

प्रश्न का उत्तर देने की क्षमता का विकास होगा।

व्यावहारिक व्याकरण

पेज नं० 204 से 207

**सीखने का प्रतिफल—**

नये वाक्यों के ज्ञान से भाषा प्रभावशाली बनेगी।

**September**

व्यवहारिक व्याकरण

पेज नं० 208 से 214

**सीखने का प्रतिफल—**

नये वाक्यों को सीखने से भाषा प्रभावशाली बनेगी।

अपठित गद्यांश

पेज नं० 126 से 132

**सीखने का प्रतिफल—**

प्रश्न का उत्तर देने की क्षमता का विकास होगा।

मुहावरे

पेज नं० 182 से 186

**सीखने का प्रतिफल—**

मुहावरों के प्रयोग से भाषा प्रवाहपूर्ण एवं प्रभावशाली बनेगी।

**October**

व्यवहारिक व्याकरण

पेज नं० 215 से 218

**सीखने का प्रतिफल—**

नये वाक्यों के ज्ञान से लेखन प्रभावशाली हो जायेगा।

अपठित गद्यांश

पेज नं० 133 से 135

**सीखने का प्रतिफल—**

प्रश्न का उत्तर देने की क्षमता का विकास होगा।

**Term 3**

**November**

**Revision**

निबन्ध 1 से 4

मुहावरे पेज नं० 168 से 173

लोकोक्तियाँ 187 से 188

**December**

**Revision**

निबन्ध 5 से 8

मुहावरे पेज नं० 174 से 178

लोकोक्तियाँ 188 से 190

**January**

**Revision**

प्रतिदर्श प्रश्न पत्र 1 से 4

**February**

**Revision**

व्यवहारिक व्याकरण पेज नं० 217 से 218



**HINDI LITERATURE**

**Term 1**

**March**

गद्य संकलन

8. भक्तिन

**सीखने का प्रतिफल—**

भारतीय समाज में पुरुषों की प्रधानता तथा नारियों के साथ पक्षपात पूर्ण व्यवहार का ज्ञान।

**April**

नाटक

आषाढ़ का एक दिन (अंक-3)

**सीखने का प्रतिफल—**

ऐतिहासिक पृष्ठ भूमि के माध्यम से भारतीय समाज में नर—नारी सम्बन्धों का ज्ञान।

**May**

काव्य मंजरी 8. उद्यमी नर

**सीखने का प्रतिफल—**

परिश्रम के माध्यम से ही बड़े लक्ष्य की प्राप्ति सम्भव है।

**July**

काव्य मंजरी 9. बादल को घिरते देखा है

**सीखने का प्रतिफल—**

प्राकृतिक सौंदर्य के शब्द चित्र का बोध।

**I Unit Test Syllabus**

गद्य संकलन भक्तिन

**Term 2**

**July**

नाटक आषाढ़ का एक दिन (अंक 3)

**सीखने का प्रतिफल—**

साहित्यकार के अहं के साथ नर—नारी सम्बन्धों का ज्ञान

**August**

काव्य मंजरी 10. अँधेरे का दीपक

**सीखने का प्रतिफल—**

मनुष्य को कभी धैर्य नहीं खोना चाहिए।

नाटक आषाढ़ का एक दिन (अंक 3)

**सीखने का प्रतिफल—**

मनुष्य रूढ़िवादी नहीं होना चाहिए।

गद्य संकलन 9. संस्कृति क्या है?

**सीखने का प्रतिफल—**

विभिन्न सांस्कृतिक विशेषताओं और लक्षणों का ज्ञान।

**September**

गद्य संकलन 10. मजबूरी

**सीखने का प्रतिफल—**

बच्चों के उज्ज्वल भविष्य हेतु माता—पिता द्वारा उनको अपने पास रखने की भावना त्याग आवश्यक।

नाटक आषाढ़ का एक दिन (अंक 3)

**October**

गद्य संकलन

काव्य मंजरी

**Revision**

1. पुत्र प्रेम

2. गौरी

3. शरणागत

1. साखी

2. बाल लीला

3. एक फूल की चाह

**Term 3**

**November**

नाटक

गद्य संकलन

**Revision**

आषाढ़ का एक दिन (अंक—1)

4. सती

5. आउट साइडर

6. दासी

**December**

नाटक

काव्य मंजरी

**Revision**

आषाढ़ का एक दिन (अंक 2 व 3)

4. आ: धरती कितना देती है।

5. नदी के द्वीप

6. तुलसी के पद

7. जाग तुझको दूर जाना है

8. उद्यमी नर

9. बादल को घिरते देखा है।

10. अँधेरे का दीपक

**January**

7. क्या निराश हुआ जाए



8. भक्तिन
  9. संस्कृति क्या है?
  10. मजबूरी
- मॉडल टेस्ट पेपर- 1, 2, 3

February

मॉडल टेस्ट पेपर- 4



## PHYSICS

### Term 1

March

#### Chapter 1 Electric Charges and Fields

##### Learning Outcome-

After studying this chapter, students will be able to understand about frictional electricity (Types of charges), electrostatic induction, coulomb's law, dielectric constant. They will study about the concept of electric field (uniform and non-uniform), force on a charge in an electric field and electric dipole.

#### Chapter 2 Gauss' Theorem

##### Learning Outcome-

In this chapter students will be able to understand to unify different concepts of electrostatics, strength of electric field due to multiple charge configuration, Area vector, flux of a vector field, electric flux, solid angle, Gauss' Theorem and its applications.

#### Chapter 3 Electric Potential

##### Learning Outcome-

By studying this chapter, students will be able to understand about the concept of electric potential, potential energy, electric potential due to a point charge and electric potential, potential energy due to electric dipole, equipotential surface and electric intensity due to a conducting sphere etc.

### Experiment 1-

To find focal length of a convex lens by using u-v method (no parallax method). Using a convex lens, optical bench / metre scales and two pins, obtain the positions of images for various positions of the object;  $f < u \leq 2f$ ,  $u \sim 2f$ ,  $u > 2f$ . Draw the following set of graphs using data from the experiments.

- (i)  $v$  against  $u$ . It will be a curve
- (ii) Magnification  $\left(m = \frac{v}{u}\right)$  against  $v$  which is a straight line and to find focal length by intercept.
- (iii)  $y = \frac{100}{v}$  against  $x = \frac{100}{u}$  which is a straight line and find  $f$  by intercepts.

### Experiment 2-

To determine the focal length of the given convex lens by no parallax method.

April

#### Chapter 4 Capacitors And Dielectrics

##### Learning Outcome-

In this chapter students will be able to understand about free and bound charges inside a conductor, capacitor or condenses, capacitance and its SI unit, capacitance of an isolated spherical conductor, capacitance of parallel and series plate of capacitors, energy and energy density of a charged capacitor, dielectrics, polar and non-polar dielectrics, types and uses of a capacitor

#### Chapter 5 Electric Current – Ohm's Law

##### Learning Outcome-

Students will be able to understand about the concept of electric current and its direction, free electron theory of conduction, drift velocity of charges, relaxation time and mean free path, electron mobility, ohm's law, electric energy and power, electricity consumption and billing, colour code of resistors etc.

#### Chapter 6 Direct Current Circles

##### Learning Outcome-

Students will be able to understand about emf of a cell, internal resistance of a cell, lost volt of back emf and terminal PD, combination of resistors, kirchhoff's laws, wheatstone bridge, slide wire bridge or Metre bridge, Potentiometer and applications of potentiometer etc.

#### Chapter 7 Moving charges and Magnetism

##### Learning Outcome-

After studying this chapter you should be able to understand about concept of magnetic field, Biol-Savant law, Ampere's circuital law and its applications, motion of charged particles in a uniform magnetic field,

Motion of a charged particle under crossed electric and magnetic field, force between two parallel current carrying wires and force between parallel conductors carrying current.

## **Chapter 8 Torque on a Current – carrying Loop – Moving Coil Galvanometer**

### **Learning Outcome-**

By studying this chapter you should be able to understand about the magnetic dipole moment, Right hand rule to find the direction of dipole moment, Torque experienced by a current loop in a uniform magnetic field, Moving coil Galvanometer, current sensitivity of a Galvanometer, Voltage sensitivity of a galvanometer, orbital magnetic moment of electrons in Bohr model of Hydrogen atom, conversion of Galvanometer into Ammeter and Voltmeter and sensitivity of a voltmeter etc.

## **Chapter 9 Magnetism And Matter**

### **Learning Outcome-**

After studying this chapter you should be able to understand about magnetic dipole moment of a revolving electron, PE of a magnetic dipole kept in a magnetic field, magnetic field and magnetic flux, bar magnet as an equivalent solenoid, The earth's magnetic field, elements of earth's magnetic field and relation between Dip and Horizontal intensity etc.

### **Experiment 3-**

To find focal length (f) of a convex lens by displacement method.

### **Experiment 4-**

Using a metre bridge determine the resistance of about 100cm of (constantan) wire. Measure its length radius and hence, calculate the specific resistance of the material.

### **Experiment 5-**

Verify ohm's law for the given unknown resistance (a 60cm constantan wire), plotting a graph of potential difference versus current. Also calculate the resistance per cm of the wire from the slope of the graph and the length of the wire.

### **Experiment 6-**

To study variation of potential difference with the length of wire.

## **May**

## **Chapter 10 Properties of Magnetic Substances**

### **Learning Outcome-**

After studying this chapter students should be able to understand about modern electric theory of magnetism, Magnetic intensity (H), Intensity of magnetism (M), Magnetic induction (B), susceptibility, Permeability, Diamagnetism based on modern electron theory, Hysteresis and electromagnets etc.

## **Chapter 11 Electromagnetic Induction**

### **Learning Outcome-**

After studying this chapter you should be able to understand about the concept of magnetic field and magnetic flux, electromagnetic induction, Faraday's law of electromagnetic induction, Lenz's law, Motional EMF, Lorentz force, Fleming's Right Hand Rule, Generator, Eddy or Foucault Currents, Self induction and inductance, Energy stored in an inductor, Mutual induction and inductance etc.

## **Chapter 12 Alternating Current**

### **Learning Outcome-**

After studying this chapter you should be able to understand about time period and frequency of AC, amplitude or peak value, mean value of AC, RMS value or virtual value of AC circuit (Lead and Lag), AC circuit containing pure Resistance (R), Inductor (L) and pure capacitor only, AC circuits of combinations of L, R and C, electrical resonance – Resonance in series LCR circuit, Q factor, Power associated with LCR series circuit, voltage magnification, Transformer and energy loss in it, advantages of AC in long distance power transmission and AC generator.

## **Chapter 13 Electromagnetic Waves**

### **Learning Outcome-**

After studying this chapter you should be able to understand about concept of magnetic waves, displacement current, Maxwell's correction to Ampere's Law, Maxwell's equations, nature of electromagnetic wave and its characteristics, energy, momentum and radiation pressure, electromagnetic spectrum etc.

## **Chapter 14 Ray optics – Reflection of Light by Spherical Mirrors**

### **Learning Outcome-**

By this chapter students should be able to understand about reflection of light at plane surfaces, laws of reflection, spherical mirrors and terms related to spherical mirrors formation of images by convex and concave mirrors, mirror formula – Relation between u, v and f, and linear magnification etc.

### **Experiment 7-**

To determine the internal resistance of a cell by a potentiometer.

### **Experiment 8-**

To compare emfs of two cells using a potentiometer.

### **Experiment 9-**

To measure e.m.f. of a dry cell using potentiometer.

### **Experiment 10-**

To determine the specific resistance of the material of the given wire using principle of wheatstone bridge.

**July**

#### **Chapter 15 Refraction of light at plane Surfaces**

##### **Learning Outcome-**

In this chapter students should be able to understand about concept of refraction of light, refractive index, principle of reversibility of light, refraction through rectangular glass slab, Total internal reflection and critical angle, Atmospheric refraction, optical fibres and its application etc.

#### **Chapter 16 Refraction of light at spherical Surfaces – Lenses**

##### **Learning Outcome-**

After studying this chapter you should be able to understand about refraction through spherical surface (convex and concave), reason for convergence and divergence of a parallel beam by a lens, formation of images, Lens formula, Lateral magnification, relation between focal length, magnification and displacement of a convex lens and object, Lens Maker's formula, formula for focal length of two thin lenses in contact, and combination of lenses and mirrors.

#### **Chapter 17 Refraction through a Prism – Dispersion**

##### **Learning Outcome-**

After studying this chapter you should be able to understand about refraction through a prism (all special cases), dispersion of light, angular dispersion, dispersive power, types of spectra, scattering of light and its natural phenomenon etc.

### **Experiment 11-**

To determine focal length of Concave mirror by using two pins (by u.v method).

### **Experiment 12-**

To determine the refractive index of a liquid by using a convex lens and a plane mirror.

### **Term 2**

**July**

#### **Chapter 18 Optical Instruments**

##### **Learning Outcome-**

By studying this chapter you should be able to understand about human eye, visual angle, microscopes; simple microscope, compound microscope, Telescopes, uses of telescopes, characteristics of telescope and resolving power etc.

**August**

#### **Chapter 19 Wave optics – Huygen's Principle**

##### **Learning Outcome-**

After studying this chapter you should be able to understand about wave theory of light, wavefront and rays, types of wavefront, Huygen's Principle, proof of laws of reflection using Huygen's theory, Laws of refraction by Huygen's theory, and change in wavelength of light on passing from one medium to another.

#### **Chapter 20 Interference of Light**

##### **Learning Outcome-**

By studying this chapter you should be able to understand about Interference of light, Coherent and Incoherent sources, Young's Double – Slit Experiment, Interference and law of conservation of energy, Bandwidth or spacing of fringes, conditions for sustained. Interference of light waves, path difference in double slit experiment and interference in thin films.

#### **Chapter 21 Diffraction of light**

##### **Learning Outcome-**

After studying this chapter you should be able to understand about concept of diffraction, Fraunhofer diffraction at a single slit, distribution of intensity with angular distance, angular width of the central bright fringe, and difference between interference and diffraction.

#### **Chapter 22 Polarisation of light**

##### **Learning Outcome-**

After studying this chapter you should be able to understand about the concept of polarization of light, unpolarised and polarized light, methods of producing polarized light, polarisation of light by reflection and refraction, Malus law, detection of plane polarised light, unpolarised and partially polarized light and uses of polarised light.

### **Chapter 23                      Photoelectric Effect**

#### **Learning Outcome-**

By studying this chapter you should be able to understand about the concept of photoelectric effect, Laws of photoelectric Emission, failure of wave theory and planck's Quantum theory, particle nature of radiation, work function, Threshold frequency, stopping potential, energy and momentum of photon, Einstein's photoelectric equation and determination of planck's constant.

### **Chapter 24                      Matter Waves**

#### **Learning Outcome-**

In this chapter you should be able to understand about wave nature and particle nature of light or radiation, de Broglie waves and wavelength, phenomenon of electron diffraction etc.

### **Chapter 25                      X-Rays**

#### **Learning Outcome-**

After studying this chapter you should be able to understand about production of X-Rays, Intensity and quality of X-Rays, properties of X-Rays, X-Ray spectra, Characteristic X-ray spectrum, origin of line spectra, Moseley's Law and its importance etc.

### **Chapter 26                      Atoms – Energy Levels**

#### **Learning Outcome-**

By studying this chapter you should be able to understand about Atoms and energy levels, Thomson's atomic model, observations made by Rutherford, theory of  $\alpha$ -particle scattering, Distance of closest approach – size of nucleus, Rutherford's nuclear model of atom and its drawbacks, Bohr's atomic model, Hydrogen model, radius of orbit, total energy of electron, Line spectra of Hydrogen, Emission and Absorption spectra of Hydrogen.

#### **Experiment 13-**

From a potentiometer set up, measure the fall in potential for increasing length of a constantan wire, through which a steady current is flowing, plot a graph of pd. (V) vs length (l), Calculate potential gradient of the wire and specific resistance of its material.

#### **Experiment 14-**

To verify the laws of combination of resistances (series and parallel using metre bridge.)

#### **Experiment 15-**

To study variation of resistance with length using wheatstone bridge principle.

#### **Experiment 16-**

To study balanced wheatstone bridge.

### **September**

### **Chapter 27                      Nuclei**

#### **Learning Outcome-**

After studying this chapter you should be able to understand about composition of nucleus, characteristics of nucleus, unified atomic mass unit (u), nuclear forces, mass – energy relation, mass defect and binding energy etc.

### **Chapter 28                      Radioactivity**

#### **Learning Outcome-**

Students should be able to understand about phenomenon of radioactivity, properties of radioactive radiations, Soddy – Fajan's displacement law, derivation of  $N = N_0 e^{-\lambda t}$ , Relation between half-life period and decay constant, Relation between mean life  $\tau$  and decay constant  $\lambda$ , radiocarbon dating, nuclear mass-energy relation etc.

### **Chapter 29                      Nuclear Energy – Fission and Fusion**

#### **Learning Outcome-**

After studying this chapter you should be able to understand about nuclear reaction, variation of binding energy per nucleon with mass number, nuclear fission, critical size and multiplication factor, nuclear reactor, Nuclear fusion, production of thermonuclear energy in the sun and stars, advantage of fusion over fission etc.

### **Chapter 30                      Semiconductor Electronics**

#### **Learning Outcome-**

After studying this chapter you should be able to understand about electronics, energy band in Silicon, conductors, Insulators and Semiconductors, Intrinsic and Extrinsic semiconductors, current conduction in semiconductors, drift velocity and mobility, and difference between n-type and p-type semiconductors.

### **Chapter 31 Semiconductor Diodes**

#### **Learning Outcome-**

After studying this chapter you should be able to understand about P-N function, depletion layer and potential barrier of a function diode, semiconductor diode, characteristics of a P-N function diode, Diode as rectifier, Half wave rectifier, Full wave rectifier, zener diode, photodiode, LED and solar cell etc.

### **Chapter 32 Junction Transistor**

#### **Learning Outcome-**

By studying this chapter you should be able to understand about working of junction transistor, current amplification factor, characteristics of transistor, common emitter transistor amplifier, gain of an amplifier and transistor as an oscillator.

#### **Experiment 17-**

To determine the focal length of a given convex lens with the help of an auxiliary convex lens.

#### **Experiment 18-**

To determine the focal length of a convex mirror using convex lens.

#### **Experiment 19-**

To determine the focal length of a convex lens by Combining it co-axially with another lens.

### **October**

### **Chapter 33 Digital Electronics – Logic Gates**

#### **Learning Outcome-**

After studying this chapter you should be able to understand about digital electronics, discrete and integrated circuits, Analog and Digital circuits, Logic Gates, OR gate, AND gate, NOT gate, Combination of gates, NAND Gate, NOR gate and universal gate etc.

### **Chapter 34 Communication Systems**

#### **Learning Outcome-**

After studying this chapter you should be able to understand about terms used in communication system, bandwidth of signals, propagation of electromagnetic waves, ground and space waves propagation, principle of satellite communication modulation, types of modulation, Amplitude modulation, modulation factor or modulation index, Bandwidth, frequency modulation (FM), advantage of FM over AM, Internet, GPS (Global Positioning System) and mobile network etc.

#### **Experiment 20-**

To determine the focal length of a concave lens by combining it co-axially with a convex lens.

#### **Experiment 21-**

To determine the focal length of a concave lens, using an auxiliary convex lens not in contact and plotting appropriate graph.

### **Term 3**

#### **November**

Chapter 1  
Chapter 2  
Chapter 3  
Chapter 4  
Chapter 5  
Chapter 6  
Chapter 7  
Chapter 8  
Chapter 9

#### **Revision**

Electric Charges And Fields  
Gauss' Theorem  
Electric Potential  
Capacitors And Dielectrics  
Electric Current – Ohm's Law  
Direct Current Circuits  
Moving Charges And Magnetism  
Torque on A Current – Carrying Loop Moving Coil Galvanometer  
Magnetism And Matter

#### **December**

Chapter 10  
Chapter 11  
Chapter 12  
Chapter 13  
Chapter 14  
Chapter 15  
Chapter 16  
Chapter 17  
Chapter 18  
Chapter 19  
Chapter 20  
Chapter 21  
Chapter 22

#### **Revision**

Properties of Magnetic Substances  
Electromagnetic Induction  
Alternating Current  
Electromagnetic Waves  
Ray Optics – Reflection of light By Spherical Mirrors  
Refraction of light at Plane Surfaces  
Refraction of light at spherical surfaces - Lenses  
Refraction Through A Prism – Dispersion  
Optical Instruments  
Wave Optics – Huygen's Principle  
Interference of Light  
Diffraction of Light  
Polarisation of Light

## January

Chapter 23  
Chapter 24  
Chapter 25  
Chapter 26  
Chapter 27  
Chapter 28  
Chapter 29  
Chapter 30  
Chapter 31  
Chapter 32  
Chapter 33  
Chapter 34

## Revision

Photoelectric Effect  
Matter Waves  
X-Rays  
Atoms – Energy Levels  
Nuclei  
Radioactivity  
Nuclear Energy – Fission And Fusion  
Semiconductor Electronics  
Semiconductor Diodes  
Junction Transistor  
Digital Electronics – Logic Gates  
Communication Systems

## February

## Revision



# CHEMISTRY

## TERM 1

### March

#### Chapter 2

#### Solutions

#### Learning outcome-

After studying this unit thoroughly, the students should be able to:

- Have an idea of different types solutions.
- Have an idea of intensive, extensive, and colligative properties.
- Learn Raoult's Law and nature of ideal solution. Characteristics of non-ideal solutions and azeotropic mixtures.
- Have an idea of solubility of gases in liquids and Henry's Law. Colligative properties and determination of molecular mass
- Have an idea of Van't Hoff factor and calculation involving colligative properties.
- Solve numericals on the above topics of colligative properties.

#### Chapter 3

#### Electrochemistry

#### Learning outcome-

After studying this unit thoroughly, the students should be able to:

- Have an idea of electrolytic and electrochemical cells. Redox reactions
- Have an idea of electromotive force of a cell, standard electrode potential, Nernst equation and its application to chemical cells.
- Have an idea of relation between Gibbs energy change and emf of a cell.
- Have an idea of Conductance in electrolytic solutions, specific, equivalent and molar conductivity, variations of conductivity with concentration, graphs; Kohlrausch's Law of electrolysis and Faraday's Laws of electrolysis. Dry cell, fuel cells, corrosion.
- Solve numerical on the basis of emf of a cell, Kohlrausch's Law, Faraday's Law of electrolysis.

#### Practical work:

Volumetric analysis (Titration)

(i) Potassium manganate (VII) with ammonium iron (II) Sulphate

### April

#### Chapter 4

#### Chemical Kinetics

#### Learning outcome-

After studying this unit thoroughly, the students should be able to:

- Understand chemical Kinetics – slow and fast reactions.
- Understand factors affecting rate of reaction: surface area, nature of reactants, concentration, temperature, catalyst and radiation.
- Explain order and molecularity of a reaction, rate law.
- Explain integrated rate equations and half-life for zero and first order reactions, concept of collision theory. Concept of threshold and activation energy, Arrhenius equation.
- Solve numerical on the basis of zero order reaction, first order reaction and activation energy.

#### Chapter 10

#### Haloalkanes and Haloarenes

#### Learning outcome-

After studying this unit thoroughly, the students should be able to:

- Write the names of haloalkanes and haloarenes according to the common and IUPAC systems of nomenclature.
- Have an idea general formula, nomenclature and classification. Nature of C–X bond, physical and chemical properties, mechanism of substitution reactions, optical rotation.
- Have an idea about basic idea, nature of C–X bond in haloarenes, substitution reactions
- Explain uses and stereo types and environmental effects of dichloromethane, trichloromethane, tetrachloromethane, iodoform, freons and DDT.

## Chapter 11 Alcohols, Phenols and Ethers

### Learning outcome-

After studying this unit thoroughly, the students should be able to:

- Understand classification, Methods of preparation,
- Learn physical and chemical properties identification of primary, secondary and tertiary alcohols,
- Learn mechanism of dehydration, uses with special reference to methanol and ethanol.
- Learn methods of preparation of phenol and ether, physical and chemical properties of phenol and ether, acidic nature of phenol, electrophilic substitution reactions, uses of phenols.

### Practical work:

- (i) Identification of compounds and functional groups  
(a) Alcoholic group – glycerol (b) Aldehydic group-Formaldehyde
- (ii) Qualitative analysis (single salt) Cation: Group zero-  $\text{NH}_4^+$ , Group I-  $\text{Pb}^{2+}$ , Anion:  $\text{CO}_3^{2-}$ ,  $\text{Cl}^-$ ,  $\text{NO}_3^-$

## May

### Chapter 8 d- and f-block elements

#### Learning outcome-

After studying this unit thoroughly, the students should be able to:

- Learn electronic configuration, characteristics and definition of transition elements,
- Have an idea general trends in properties of the 3d-series of transition metals - metallic character, ionisation enthalpy, oxidation states, ionic radii, colour of ions, catalytic property, magnetic properties, interstitial compounds, alloy formation,
- Explain preparation and properties of  $\text{K}_2\text{Cr}_2\text{O}_7$  and  $\text{KMnO}_4$ . Lanthanoids and actinoids.

### Chapter 9 Coordination compounds

#### Learning outcome-

After studying this unit thoroughly, the students should be able to:

- Learn definition of ligands, coordination number, oxidation number. IUPAC nomenclature of mononuclear coordination compounds. Isomerism (structural and stereo).
- Learn the nature of bonding in co-ordination compounds
- Have an idea of application of co-ordination compound.

### Practical work:

- Volumetric analysis (Titration)
- (i) Potassium manganate (VII) with oxalic acid  
Qualitative analysis (single salt)  
Cation: Group II-  $\text{Cu}^{2+}$ ,  $\text{Pb}^{2+}$  Anion:  $\text{SO}_4^{2-}$ ,  $\text{CH}_3\text{COO}^-$

## July

### Chapter 12 Aldehydes, Ketones and Carboxylic acid

#### Learning outcome-

After studying this unit thoroughly, the students should be able to:

- Learn the nomenclature of aldehydes, ketones and carboxylic acids according to the common and IUPAC systems.
- Learn methods of preparation of aldehydes and ketones, physical and chemical properties, mechanism of nucleophilic addition, reactivity of alpha hydrogen in aldehydes and uses.
- Learn carboxylic Acids nomenclature, acidic nature, methods of preparation, physical and chemical properties and uses.

### Chapter 13 Organic compounds containing nitrogen

#### Learning outcome-

After studying this unit thoroughly, the students should be able to:

- Learn the chemistry of nitro compounds, nitrites cyanides, and isocyanides.
- Learn amines classification of amines.nomenclature. Methods of preparation, physical and chemical properties, uses, identification of primary, secondary and tertiary amines.
- explain diazonium salts: Preparation, chemical reactions and importance in synthetic organic chemistry.
- Distinguish different types of amines.

### Practical work:

- (i) Identification of compounds and functional groups  
(a) Ketone group- Acetone  
(b) Carboxylic group- Benzoic acid  
(c) Amino group- Aniline
- (ii) Qualitative analysis (single salt)  
Cation: Group III:  $\text{Al}^{3+}$ ,  $\text{Fe}^{3+}$ , Anion:  $\text{PO}_4^{3-}$ ,  $\text{Cl}^-$

## I Unit Test Syllabus

### Chapter 2

### Solutions

## **TERM 2**

**July**

### **Chapter 1 Solid State**

#### **Learning outcome-**

After studying this unit thoroughly, the students should be able to:

- Classification of solids based on different binding forces such as ionic, covalent molecular; amorphous and crystalline solids (difference), metals.
- Explain type of unit cell in two dimensional and three dimensional lattices, number of atoms per unit cell (all types).
- Calculate density of unit cell, packing in solids, packing efficiency, voids, point defects, electrical and magnetic properties.
- Learn band theory of metals. Conductors, semiconductors (n and p type) and insulators.

**August**

### **Chapter 1 Solid State Chapter 14 Biomolecules**

#### **Learning outcome-**

After studying this unit thoroughly, the students should be able to:

- Have an idea about Carbohydrates – Definition, classification monosaccharides, oligosaccharides, polysaccharides, reducing sugars and non-reducing sugars – examples and uses.
- Learn proteins, amino acids, peptide bond, polypeptides, proteins, structure of proteins primary, secondary, tertiary structure and quaternary structures, denaturation of proteins. Enzymes
- Learn vitamins - Classification and functions. Nucleic Acids - DNA and RNA

### **Chapter 6 General principles and processes of Isolation of Elements**

#### **Learning outcome-**

After studying this unit thoroughly, the students should be able to:

- Have an idea about metallurgy, ores, principles and methods of extraction - concentration, oxidation, reduction, electrolytic refining. Occurrence and principles of extraction of aluminium, copper, zinc, iron and silver.

#### **Practical work:**

Qualitative analysis (single salt)

Cation: Group IV:  $Zn^{2+}$ ,  $Mn^{2+}$ ,  $Ni^{2+}$ ,  $Co^{2+}$

Anion:  $C_2O_4^{2-}$ ,  $S^{2-}$

Study of rate of reaction: Reaction between sodium Thiosulphate and hydrochloric acid

**September**

### **Chapter 7 p-Block elements [(i) Group 15 elements (ii) Group 16 elements (iii) Group 17 elements (iv) Group 18 elements (The Noble gases)]**

#### **Learning outcome-**

After studying this unit thoroughly, the students should be able to:

- Understand and explain the periodic trends in the physical and chemical properties of following groups of elements :  
Group 15, Group 16, Group 17, Group 18,
- Correlate the properties of these elements with their electronic configurations.
- Have a brief idea of nitrogen, phosphorous, sulphur, interhalogen compounds and compounds of Xenon.
- Learn the manufacture and uses of nitric acid and sulphuric acid.

### **Chapter 5 Surface Chemistry**

#### **Learning outcome-**

After studying this unit thoroughly, the students should be able to learn:

- Absorption and adsorption physisorption and chemisorption, factors affecting adsorption of gases on solids and liquids. homogenous catalysis; and heterogenous, activity and selectivity, enzyme catalysis.
- Colloidal state distinction between true solutions, colloids and suspension; lyophilic, lyophobic multi-molecular, macromolecular and associated colloids;
- Properties of colloids; Brownian movement, Tyndall effect, coagulation and electrophoresis. Emulsion - types of emulsions

#### **Practical work:**

(i) Qualitative analysis (single salt)

Cation: Group V:  $Ba^{2+}$ ,  $Ca^{2+}$ ,  $Sr^{2+}$  Group VI:  $Mg^{2+}$

(ii) Study of rate of reaction: Reaction between magnesium and dil. Sulphuric acid

**October**

### **Chapter 15 Polymers**

#### **Learning outcome-**

After studying this unit thoroughly, the students should be able to:



- Explain polymers definition and classification on different parameters. Methods of polymerisation, copolymerisation, and some important polymers like polythene, nylon polyesters, bakelite, rubber. Biodegradable and non-biodegradable polymers

## Chapter 16 Chemistry in everyday life

### Learning outcome-

After studying this unit thoroughly, the students should be able to:

- Have an idea about chemicals in medicines tranquilizers antiseptics, antimicrobials,- analgesics, disinfectants, antifertility drugs,antibiotics, antacids, antihistamines.
- Have an idea about chemicals in food - preservatives, artificial sweetening agents, elementary idea of antioxidants.
- Learn soaps and detergents - classification and their cleansing action

### TERM 3

#### November

Chapter 1  
Chapter 2  
Chapter 3  
Chapter 4

#### Revision

Solid State  
Solutions  
Electrochemistry  
Chemical Kinetics

#### December

Chapter 5  
Chapter 6  
Chapter 9  
Chapter 7

#### Revision

Surface Chemistry  
General Principles and processes of Isolation of elements.  
Co-ordination compounds  
p-Block elements  
[(i) Group 15 elements (ii) Group 16 elements (iii) Group 17 elements  
(iv) Group 18 elements (The Noble gases)]

#### January

Chapter 8  
Chapter 10  
Chapter 11  
Chapter 12

#### Revision

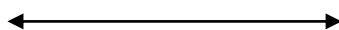
d- and f-block elements  
Haloalkanes and Haloarenes  
Alcohols, Phenols and Ethers  
Aldehydes, Ketones and Carboxylic acid

#### February

Chapter 13  
Chapter 14  
Chapter 15  
Chapter 16

#### Revision

Organic compounds containing nitrogen  
Biomolecules  
Polymers  
Chemistry in everyday life



## BIOLOGY

### Term 1

#### March

#### Chapter 1

#### Reproduction in organisms

#### Learning Outcome-

After studying this chapter you should be able to understand the following topics-

Reproduction - A characteristic features of all organisms for continuation of species.

Modes of Reproduction – Asexual and Sexual reproduction. Life span of different organisms.

Asexual reproduction – Binary fission, sporulation, budding, gemmule formation, fragmentation with examples. Diagram of each type.

Different types of vegetative propagation in Plants.

Sexual reproduction – Plants – Definition, phases of life cycle (juvenile / vegetative, reproductive and senescence).

Unusual flowering phenomenon in bamboo and Strobilanthes kunthina.

Animals – continuous and seasonal breeders (definition differences and examples.)

Events in sexual reproduction – pre fertilization (gametogenesis and gamete transfer in plants and animals.)

Chromosome number in the of housefly, fruit fly,butterfly, humans, rats, dog, maize, apple, onion, cat, rice, ophioglossum.

External and internal fertilization.

Post fertilization – (embryogenesis)

Definition and example of parthenogenesis.

Differences between Asexual and sexual reproduction.

#### Experiment 1-

To study the floral characteristics of family Malvaceae by dissection of flowers of china rose.

### **Experiment 2-**

To study the floral Characteristics of family Solanaceae by dissection of flowers of Petunia / Datura

**April**

#### **Chapter 2 Sexual reproduction in flowering plants**

##### **Learning Outcome-**

After studying this chapter you should be able to understand the following topics-  
Structure of flower.

Development of Male and female gametophyte.

Pollination – Types, agencies and examples.

Pollen pistil interaction, Events during pollination and fertilization. Double fertilization.

Post fertilization events – Development of endosperm and Embryo. Definition of perisperm.

Development of seed and formation of fruit.

Special modes of reproduction – Apomixis, parthenocarpy, polyembryony.

Significances of seed dispersal and fruit formation.

#### **Chapter 3 Human Reproduction**

##### **Learning Outcome-**

After studying this chapter you should be able to understand the following topics-

Male and female reproductive organs.

Anatomy (T.S.) of Testis and Ovary.

Gametogenesis – Spermatogenesis and oogenesis.

Menstrual cycle – its different phases.

Embryonic development upto blastocyst formation.

Implantation, Gestation and pregnancy.

Placenta and its roles, process of its formation.

Parturition and lactation (Brief idea)

#### **Chapter 4 Reproductive health**

##### **Learning Outcome-**

After studying this chapter you should be able to understand the following topics.

Definition of reproductive health. Programs of reproductive health (family planning, RCH).

Population explosion – Role of government in controlling the population.

Contraceptive methods and their methods of action.

Medical termination of pregnancy (MTP) and reasons for it.

Amniocentesis and its role in detecting genetic disorders.

Causes of infertility in females and males.

Assisted reproductive technologies (ARTs)- IVF, IUT, ZIFT, ICSI, GIFT, AI, IUI – Definition and application.

Sexually transmitted diseases (STDs) – Causes, Symptoms and methods of prevention.

The diseases are – Gonorrhoea, Syphilis, genital herpes, chlamydiasis, genital warts, trichomoniasis, hepatitis – B, AIDS.

#### **Chapter 19 Biodiversity and conservation**

##### **Learning Outcome-**

After studying this chapter you should be able to understand the following topics:

Concept of Biodiversity.

Importance of biodiversity, loss of biodiversity.

Patterns of biodiversity (latitudinal gradients, species- area relationship – graph and equation), Rivet popper hypothesis.

Biodiversity conservation.

In-situ methods – protected areas – biosphere reserves national parks, wildlife sanctuaries, sacred groves.

Ex-situ methods – captive breeding, zoo, botanical gardens, cryopreservation, wild life safari, seed banks, tissue culture.

Definitions and examples of Hotspots, Ramsar sites and Red data book.

### **Experiment 3-**

To study the floral characteristics of sub-family papilionaceae (leguminosae) by dissection of flowers of Pisum sativum. (Pea)

### **Experiment 4-**

To study the floral characteristics of family Amaryllidaceae by dissection of flowers of Lily.

### **Experiment 5-**

To identify and comment on Permanent slides (spotting)

**May**

#### **Chapter 5 Principles of inheritance and variation.**

##### **Learning Outcome-**

After studying this chapter you should be able to understand the following topics-

Heredity and variation – Mendelian inheritance.

Mendel's principles and laws of inheritance.

Back cross and testcross, Monohybrid & Dihybrid cross.

Reasons for Mendel's success.

Definition of homologous chromosome, Autosomes and sex- chromosomes.

Terms related to heredity.

Deviations from Mendel's law – incomplete dominance, co-dominance, multiple alleles, inheritance of blood groups, pleiotropy with reference to PKU and starch synthesis in pea seed.

Idea regarding polygenic inheritance.

Pedigree chart showing the pattern of inheritance.

## **Chapter 6 Chromosomes, Sex linked inheritance and human genetic disorders.**

### **Learning Outcome-**

After studying this chapter you should be able to understand the following topics:

Chromosomal theory of inheritance – chromosomes and genes.

Sex determination in humans, fruitfly, birds and honeybee, grass hopper.

Sexlinked inheritance – with reference to *Drosophila*.

Definition and Significance of linkage and crossing over.

Mutation and its types.

Sex linked inheritance in man (colour blindness and haemophilia).

Human genetic disorders – phenylketonuria, thalassaemia, colourblindness, Sickle cell anaemia.

Chromosomal disorders – Down's syndrome, Klinefelter's Syndrome, Turner's syndrome.

## **Chapter 8 Evolution – Origin of life**

### **Learning Outcome-**

After studying this chapter you should be able to understand the following topics:

Concept of origin of life- Abiogenesis and biogenesis, effects of O<sub>2</sub> on evolution to show that reducing atmosphere is essential for abiotic synthesis.

Important views on the origin of life.

Oparin Haldane theory. Millar Urey experiment.

Concept of protobionts, Coacervates.

Evidences for biological evolution (Palaeontology, Biogeography, Comparative anatomy, Embryology,

Darwin's finches, molecular evidences with different examples).

### **Experiment 6-**

To study the water holding capacity and p<sup>H</sup> of soil from two different sites.

### **Experiment 7-**

To prepare a temporary slide of T.S. of any locally available flower to show (i) axile placentation (ii) Marginal placentation.

### **Experiment 8-**

To prepare a temporary slide of T.S. of a xerophytic leaf eg-Nerium.

**July**

## **Chapter 7 Molecular basis of inheritance**

### **Learning Outcome-**

After studying this chapter you should be able to understand the following topics-

Search for genetic material and DNA as genetic material.

Structure of DNA and RNA.

Experiments based to prove that DNA is genetic material. Process of DNA replication.

Central dogma of molecular biology.

Transcription and its steps. Post transcriptional processing.

Intron, exon and cistron

Genetic code and its features.

Protein Synthesis – translation in Prokaryotes.

Human genome project and Rice genome project.

DNA fingerprinting.

### **Experiment 9-**

To study the texture of soil samples collected from two different sites.

### **Experiment 10-**

To study the moisture content of soil from two different sites.

## **I Unit Test Syllabus**

### **Chapter 1**

### **Reproduction in organisms**

### **Term 2**

**July**

### **Chapter 9**

### **Theory of Evolution and evolution of man.**

### **Learning Outcome-**

After studying this chapter you should be able to understand the following topics:

Darwins theory of natural selection.  
Drawbacks of Darwinism. Neo-Darwinism.  
Lamarcks theory of Evolution.  
Criticism of Lamarckism.  
Types of natural selection, Examples.  
Hardy – Weinberg’s principle.  
Genetic variation and factors affecting Hardyweinberg equilibrium.  
Adaptive Radiations.  
Evolution of man features of each of the ancestors – Dryopithecus, Ramapithecus, Australopithecus, Homo habilis, homo erectus, Homonean derthalensis, Cro-magnon man and Homosapiens leading to man of today.

## **August**

**Chapter 9 Theory of Evolution and evolution of man.**

**Chapter 10 Human health and diseases**

### **Learning Outcome-**

After studying this chapter you should be able to understand the following topics:

Concept of Pathogen, Parasites.

Parasites causing diseases (common cold, dengue, chikungunya, typhoid, pneumonia, amoebiasis, malaria, filariasis, ring worm, ascariasis) – their symptoms and control measures.

Concept of immunology, Types of immunity structure of a typical antibodies, its diagram and types.

Concept of vaccination, immunisation, Allergy and Allergens.

Concept of AIDS – Causative agent (HIV), modes of transmission, diagnosis (ELISA), Symptoms, replication of retrovirus and prevention of AIDS and its diagrams.

Concept of cancer.

**Chapter 11 Adolescent issues: Alcoholism and drugs**

### **Learning Outcome-**

After studying this chapter you should be able to understand the following topics:

Alcoholism and smoking effects on health.

Drugs – Effects and sources of opioids, cannabinoids, cocaine and barbiturates.

Reasons for addiction, prevention and control of alcohol and drug abuse.

**Chapter 12 Animal breeding for improvement in Food production.**

### **Learning Outcome-**

After studying this chapter you should be able to understand the following topics:

Concept of inbreeding, out-breeding, cross-breeding and artificial insemination, Multiple ovulation. Embryo transfer technology (MOET), Advantages of artificial insemination.

Concept of Dairy farm, Animal husbandry and its proper maintenance.

Concept of Poultry farms, Apiculture and Pisciculture.

**Chapter 13 Plant breeding to enhance food production**

### **Learning Outcome-**

After studying this chapter you should be able to understand the following topics:

Improvement in food production.

Concept of green revolution.

Concept of Plant breeding its main objectives and methods. Application of Plant breeding.

Tissue culture its method and applications.

Concept of Single cell protein (SCP), Biofortification with examples.

**Chapter 14 Microbes in human welfare**

### **Learning Outcome-**

After studying this chapter you should be able to understand the following topics:

Concept of microbes role in – house hold food processing industrial production, Sewage treatment, energy production and microbes as biocontrol agents and as biofertilisers.

Structure of biogas plant and production of biogas.

IPM (Integrated Pest Management)

Harmful effects of chemical pesticides.

### **Experiment 11-**

To study about the humus content of soil.

### **Experiment 12-**

To demonstrate the effect of temperature on the activity of enzyme (Salivary amylase).

### **Experiment 13-**

To study the effect of  $p^H$  on the action of diastase.

### **Experiment 14-**

To isolate DNA from Banana pulp.

**September**

**Chapter 15**

**Biotechnology: Principles and processes**

**Learning Outcome-**

After studying this chapter you should be able to understand the following topics-

Concept of biotechnology, its principles and processes.

Genetic engineering (rDNA technology) its different steps.

Gene Amplification by PCR technique.

Features and roles of restriction enzymes (EcoRI; Hind II) and role of ligase. Concept of Gel Electrophoresis.

Cloning vectors- its features and examples.

Methods of transfer of rDNA into a competent host e.g by direct method and indirect methods.

Bioreactor (basic features and uses of stirred tank and sparged tank bioreactors)

Concept of Down stream processing.

**Chapter 16**

**Biotechnology and its Applications**

**Learning Outcome-**

After studying this chapter you should be able to understand the following topics:

Application of biotechnology in the field of health and Agriculture.

In Medicine – Production of human insulin, gene therapy with reference to treatment of SCID, molecular diagnosis by PCR, ELISA and use of DNA / RNA probe.

Transgenic animals and its uses, GMOs (Genetically modified organisms and their uses)

In Agriculture – Bt crops, crops tolerant to abiotic stresses, pest resistant crops – RNAi with reference to Meloidogyne incognita, crops with enhanced nutritional value (golden rice)

Role of GEAC, concept of Biopiracy, Biopatent.

**Chapter 17**

**Organisms and population**

**Learning Outcome-**

After studying this chapter you should be able to understand the following topics:

Concept of organisms and environment - Habitat and niche, population and ecological adaptations.

Population interactions – mutualism, Competition, predation, parasitism with examples.

Population attributes – Growth rate, birthrate and Death rate, Age distribution.

Concept of ecology, Major biomes of India.

Concept of sex ratio, types of age distribution pyramids.

Concept of population density, natality, mortality, emigration, immigration, carrying capacity. Ways to measure population density. Calculation of natality and mortality.

Population growth models, factors affecting growth. Life history variations.

Concept of reproductive fitness and its examples.

**Chapter 18**

**Ecosystem**

**Learning Outcome-**

After studying this chapter you should be able to understand the following topics:

Concept of Ecosystem – Patterns and its components (Biotic and Abiotic)

Productivity and decomposition, Energy flow. Pyramids of number, biomass and energy.

Nutrient cycles (carbon and phosphorous) ecological succession, ecological services carbon fixation, pollination, seed dispersal oxygen release.

Structure and functions of a pond Ecosystem.

Concept of Productivity (GPP) and (NPP).

Concept of decomposition and factors affecting it.

Various types of food chains – grazing and detritus, food webs, trophic levels.

Concept of Photosynthetic active radiation (PAR).

Concept of 10% law, standing crop and standing state.

**Experiment 15-**

To prepare temporary slides of-

(i) L.S. of a Monocot seed (maize)

(ii) L.S. of a Dicot seed (Gram or Pea)

**Experiment 16-**

To study the arrangement / distribution of stomata on isobilateral and dorsiventral leaves.

**Experiment 17-**

To identify and comment on plant and Animal specimens.

**Experiment 18-**

To prepare a temporary slide of T.S. of hydrophyte stem-eg Hydrilla.

**October**

**Chapter 20**

**Environmental issues**

**Learning Outcome-**

After studying this chapter you should be able to understand the following topics:

Air Pollution and its control, water pollution and its control.  
Agrochemicals and their effects.  
Solid waste management, Green house effect and climate change.  
Ozone layer depletion. (causes, effects)  
Any one case study as success story addressing environmental issues.  
Sources of gaseous and particulate pollutants.  
Control devices for Air pollution such as – Scrubbers electrostatic precipitators, Catalytic converter CNG, Bharat Stages.  
Noise pollution – Harmful effects and control.  
Thermal pollution, eutrophication.  
Cultural or accelerated BOD  
Effect of sewage discharge on BOD and DO<sub>2</sub> content in River.  
Case studies of waste water treatment (FOAM and Eco San).  
Soil pollution – Sources, effects and control.  
Integrated farming of Ramesh Chandra Dagar.  
Solid waste management, Radioactive waste management, e-waste.  
Concept of Slash and burn agriculture, Jhum cultivation.  
Concept of global warming and its effects.  
El Nino effect – impact on animals and Plants due to climatic changes.  
Concept of Montreal protocol and environmental protection Acts – Air and water (Prevention and control of pollution act)

**Experiment 19-**

To identify and comment of Permanent Slides. (Spotting)

**Experiment 20-**

To observe germination of pollen grains in a nutrient medium.

**Term 3**

**November**

Chapter 1  
Chapter 2  
Chapter 3  
Chapter 4  
Chapter 5

**Revision**

Reproduction in organisms  
Sexual reproduction in flowering plants  
Human reproduction  
Reproductive health  
Principles of inheritance and variation

**December**

Chapter 6  
Chapter 7  
Chapter 8  
Chapter 9  
Chapter 10  
Chapter 11  
Chapter 12

**Revision**

Chromosomes, Sex-linked inheritance and human genetic disorders  
Molecular basis of inheritance  
Evolution – origin of life  
Theory of evolution and evolution of man  
Human health and diseases  
Adolescent issues: Alcoholism and Drugs  
Animal breeding for improvement in food production

**January**

Chapter 13  
Chapter 14  
Chapter 15  
Chapter 16  
Chapter 17  
Chapter 18  
Chapter 19

**Revision**

Plant breeding to enhance food production  
Microbes in human welfare  
Biotechnology Principles and processes  
Biotechnology and its Applications  
organisms and populations  
Ecosystem  
Biodiversity and conservation

**February**

Chapter 20

**Revision**

Environmental issues



**MATHEMATICS**

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**Term 1**

**March**

**Chapter 1**

**Learning Outcome-**

Students will learn about the concept of Cartesian product and different types of relations.  
Students will learn about equivalence relation.

**Section (A)**

**Relations**

**Chapter 2**

**Functions**

**Learning Outcome-**

Students will learn the concept of range and domain.  
They will understand the concept of bijective functions and invertible functions.

**Chapter 3 Binary operations**

**Learning Outcome-**

Students will understand all the properties of binary operations and how to perform these operations.

**Chapter 4 Inverse trigonometric functions**

**Learning Outcome-**

Students will know the range and domain of all inverse trigonometric functions.

Students will understand the properties of inverse trigonometric functions.

**April Section (A)**

**Chapter 7 Continuity and Differentiability of functions**

**Learning Outcome-**

Students will know the concept of limit and how to apply it in checking continuity of functions.

Students will learn how to check differentiability of functions using first principle of differentiation.

**Chapter 8 Differentiation (continued from Book I)**

**Learning Outcome-**

Students will learn how to apply chain rule, product rule, quotient rule, to find derivative of functions.

Students will learn to find the derivatives of inverse trigonometric functions, exponential function and logarithmic functions.

**Chapter 9 Indeterminate forms of limits**

**Learning Outcome-**

Students will understand L' Hospital's theorem for finding limits of functions.

**Chapter 10 Mean value theorems**

**Learning Outcome-**

Students will learn about Rolle's mean value theorem and Lagrange's Mean value theorem with its geometrical interpretation.

**Section (B)**

**Chapter 21**

**Vectors**

**Learning Outcome-**

Students will be able to understand the concept of magnitude and direction of a vector.

Students will learn about different types of vectors, addition of vectors and multiplication of vectors.

Students will learn the properties and application of scalar and vector product of vectors.

**May Section (A)**

**Chapter 11 Applications of Derivatives**

**Learning Outcome-**

Students will be able to know and apply the concept of derivatives in finding equations of tangents and normals and for checking increasing and decreasing functions.

**Chapter 12 Maxima and Minima**

**Learning Outcome-**

Students will know about the first derivative test and second derivative test for maxima and minima.

Students will be able to solve some practical problems on it.

**Section (B)**

**Chapter 22**

**Vectors (continued)**

**Learning Outcome-**

Students will learn the concept of cross product, its properties and how to find area of triangle area of parallelogram using cross product.

They will understand the geometrical significance of scalar products of vectors.

They will understand the concept of scalar triple product.

**Section (C)**

**Chapter 26**

**Application of calculus in commerce and economics**

**Learning Outcome-**

Students will understand the meaning of cost function, average cost, demand function, revenue function, and their marginal functions.

Students will be able to draw rough sketches of the given curves, and their mathematical interpretation using concept of maxima and minima.

**July Section (A)**

**Chapter 6**

**Matrices**

**Learning Outcome-**

Students will understand the concept and notation of matrices.

Students will study about different types of matrices.

Students will learn about different operations on matrices.

Students will learn the concept of elementary row and column operations, uniqueness of inverse as well.

**Chapter 5 Determinants**

**Learning Outcome-**

Students will learn the concept of determinants and properties of determinants, minors, co-factors and applications of determinants.

Students will learn how to find the inverse of a square matrix.

Students will understand how to solve linear equations in two or three variables (Martin's Rule)

**Section (C)**

**Chapter 27 Linear regression**

**Learning Outcome-**

Students will learn the method of least squares, scatter diagrams, Lines of regression, equation of regression lines.

Students will be able to find angle between regression lines and their properties.

**I Unit Test Syllabus**

**Chapter 8 Differentiation (continued from Book I)**

**Term 2**

**July**

**Section (A)**

**Chapter 13**

**Indefinite Integral – 1 (Standard forms)**

**Learning Outcome-**

Students will learn about integration as an inverse process of differentiation, and some standard forms of indefinite Integral.

**August**

**Section (A)**

**Chapter 14**

**Indefinite Integral – 2 (Methods of Integration)**

**Learning Outcome-**

Students will learn about different methods of solving Integration.

Students will understand the rule of partial fractions, method of substitutions and product rule.

**Chapter 15**

**Indefinite Integral – 3 (Special Integrals)**

**Learning Outcome-**

Students will study about some special types of integrals, and integration by parts.

**Chapter 16**

**Definite integrals**

**Learning Outcome-**

Students will learn about fundamental theorem of calculus.

Students will understand Definite Integral as a limit of the sum.

Students will understand how to solve definite integrals using their properties.

**Chapter 17**

**Differential Equations**

**Learning Outcome-**

Students will be able to find order, degree, general and particular solutions of a differential equations.

They will learn how to form differential equation and find solution of differential equations using separation of variables, linear differential equations and homogeneous differential equations.

**September**

**Section (A)**

**Chapter 18**

**Probability**

**Learning Outcome-**

Students will know about laws of probability, addition theorem, multiplication theorem, conditional probability.

Students will understand the concept of dependent and independent events.

**Chapter 19**

**Baye's Theorem**

**Learning Outcome-**

Students will be able to use theorem of total probability and Baye's Theorem in real life.

**Chapter 20**

**Theoretical Probability Distribution**

**Learning Outcome-**

Students will understand the concept of probability distribution function: Mean and variance.

Students will understand about binomial distribution and its mean and variance.

**Section (B)**

**Chapter 23**

**Three Dimensional Geometry**

**Learning Outcome-**

Students will understand the concept of direction cosines and direction ratios, coplanar and skew lines, distance of a point from a line and the shortest distance between two lines.

**Chapter 24**

**Plane**

**Learning Outcome-**

Students will understand the Cartesian and vector equation of a plane, its normal form, intercept form.

Students will be able to find the angle between two planes, a line and a plane, intersection of the line and a plane.



**October**  
**Chapter 25**                      **Section (B)**  
**Application of Integrals**

**Learning Outcome-**

Students will learn how to find area bounded by curves, lines, circles / parabolas / ellipse, polynomials, and other functions.

**Chapter 28**                      **Section (C)**  
**Linear Programming**

**Learning Outcome-**

Students will learn different terminology such as constraints, objective function and optimization. Students will know about different types of linear programming problems, its mathematical formulation, graphical method.

Students will learn how to find feasible and infeasible regions and solutions, and optimal solutions.

**Term 3**

**November**

Chapter 1  
Chapter 2  
Chapter 3  
Chapter 4  
Chapter 5  
Chapter 6

**Section A (Revision)**

Relations  
Functions  
Binary operations  
Inverse trigonometric functions  
Determinants  
Matrices

**December**

Chapter 7  
Chapter 8  
Chapter 9  
Chapter 10  
Chapter 11  
Chapter 12  
Chapter 13  
Chapter 14

**Section A (Revision)**

Continuity and Differentiability of functions  
Differentiation  
Indeterminate forms of limits  
Mean value Theorems  
Applications of Derivatives  
Maxima and Minima  
Indefinite Integral – 1 (standard forms)  
Indefinite Integral – 2 (methods of Integration)

Chapter 21  
Chapter 22

**Section B (Revision)**

Vectors  
Vectors (continued)

**January**

Chapter 15  
Chapter 16  
Chapter 17  
Chapter 18  
Chapter 19  
Chapter 20

**Section A (Revision)**

Indefinite Integral – 3  
Definite Integrals  
Differential Equations  
Probability  
Baye's Theorem  
Theoretical Probability Distribution

Chapter 23  
Chapter 24  
Chapter 25

**Section B (Revision)**

Three Dimensional Geometry  
The Plane  
Application of integrals

Chapter 26  
Chapter 27

**Section C (Revision)**

Application of Calculus in Commerce and Economics  
Linear Regression

**February**

Chapter 28

Linear Programming



**ACCOUNTS**

For further details, students must go through I.S.C. 2025 Syllabus Booklet.

**Term 1**

**March**

**Chapter 1**

**VOLUME – I**

**Accounting for Partnership Firms - Fundamentals**

**Learning Outcome-**

After studying this chapter you should be able to understand:

A. Fundamentals of Partnership

(i) Definition, meaning and features of a Partnership. Self-explanatory.

(ii) Provisions of The Indian Partnership Act, 1932, with respect to books of accounts.

- (i) Meaning and importance.
- (ii) Rules applicable in the absence of a partnership deed.
- (iii) Preparation of Profit and Loss Appropriation Account and Partners' Capital and Current Accounts.
- (a) Profit and Loss Appropriation Account. (b) Partners' capital accounts: fixed and fluctuating. (c) Partners' Current Accounts when fixed capital method is followed. Interest on capital, interest on drawings, interest on current accounts (debit and credit) salary, commission to partners and managers, transfer to reserves, division of profit among partners, (d) Guarantee of profits, (e) Past adjustments (Relating to interest on capital, interest on drawing, salary and profit-sharing ratio).

**NOTE:**

- Interest on loan given by the partner to the firm is to be taken as a charge against profits. This interest will be debited to the P/L account and credited to his loan account.
- Interest on loan taken by a partner from the firm should be credited to P/L account and debited to his capital/current account as the case may be.
- Rent due to a partner is a charge against profit and is to be credited to partners' current account in case of fixed capital system or to partners' capital account when capitals are fluctuating.
- Percentage of partner's commission / General Reserve to be calculated only on the correct trading profit and not on the divisible profit.
- Rectification of errors (past adjustments) through a single journal entry/ adjusting and closing journal entries, preparation of partners' adjusted capital/current accounts.
- Admission of manager as a Partner is excluded from the topic of past adjustments/guarantee of profits.

**April**

**Chapter 2 Goodwill : Concept and Valuation**

**Learning Outcome-**

After studying this chapter you should be able to understand:

- B. Goodwill: Concept of goodwill and mode of valuation. (a) Meaning, nature and features of Goodwill. (b) Factors affecting the value of goodwill. (c) Mode of Valuation.
- Average profit method – Meaning and practical application. – Simple average. – Weighted average method.
  - Super profit method – Meaning and practical application.
  - Capitalization method – Meaning and practical application. – Capitalization of average profit. – Capitalization of super profit.

NOTE: Capital Employed/Net assets are Total assets (excluding purchased goodwill, non-trade investments and fictitious assets) less outside liabilities. Investments to be taken as non-trade investments unless specified as trade investments.

**Chapter 3 Admission of a Partner**

**Learning Outcome-**

After studying this chapter you should be able to understand:

C. Reconstitution of Partnership

I. Admission

- (i) Calculation of new profit-sharing ratio, sacrificing ratio and gaining ratio. Self-Explanatory
- (ii) Accounting treatment of goodwill on admission of a partner.

Based on Accounting Standard -26 issued by the Institute of Chartered Accountants of India in the context of Intangible Assets.

- (a) Premium for goodwill paid privately.
- (b) Premium for goodwill paid (in cash or kind) and retained in the business.
- (c) Premium for goodwill paid and withdrawn by the old partners.
- (d) When the incoming partner cannot bring premium for goodwill in cash, adjustments are to be done through his current account.
- (e) Hidden goodwill.
- (f) When goodwill appears in the old Balance Sheet.

(iii) Preparation of Revaluation Account.

Preparation of a Revaluation Account where changes in the values of assets and liabilities are reflected in the new Balance Sheet after reconstitution of a partnership firm.

- (iv) Accounting treatment of accumulated profits and losses. General Reserve / Reserve Fund, Workmen Compensation Reserve/ Fund, Investment Fluctuation Reserve/Fund, Contingency Reserve, Profit and Loss Account (Debit and Credit balance) and Advertisement Suspense Account/ Deferred Revenue Expenditure.
- (v) Adjustment of Capitals.
  - (a) Adjustment of old partner's Capital Accounts on the basis of the new partner's capital.
  - (b) Calculation of new partner's capital on the basis of old partner's adjusted capital.
- (vi) Change in Profit-Sharing Ratio.

Change in PSR takes place at the time of admission of a partnership firm. Accounting treatment of accumulated profits and losses through one journal entry: (Adjustment of the incoming partner's share to be done through his current account-similar to the treatment of goodwill not brought in cash.)

Gaining Partners' Cap/Current A/c Dr.

To Sacrificing Partners Cap/Current (in case of profits).

Sacrificing Partners' Cap/Current A/c Dr.

To Gaining Partners Cap/Current (in case of losses)

General Reserve/ Reserve fund, Workmen Compensation Reserve/ Fund, Investment Fluctuation Reserve/

Fund, Contingency Reserve, Profit and Loss Account (Debit and Credit Balance) and Advertisement Suspense Account/ Deferred Revenue Expenditure.

NOTE:

- Preparation of Balance Sheet during admission of a partner to be done in Horizontal format.
- Memorandum revaluation account, Joint Life Policy, Individual life policy are excluded from the syllabus.
- Admission of a partner during an accounting year is excluded from the syllabus.

**May**

#### **Chapter 4 Retirement or Death of a Partner**

##### **Learning Outcome-**

After studying this chapter you should be able to understand:

II. Retirement and death of a partner

- (i) Calculation of new profit-sharing ratio, gaining ratio and sacrificing ratio. Self-Explanatory.
- (ii) Adjustment with regard to goodwill including hidden goodwill. Self-Explanatory.
- (iii) Adjustment with regard to undistributed profits and losses. Self-Explanatory.
- (iv) Adjustment with regard to share of profits of the retiring or deceased partner from the date of the last Balance Sheet to the date of retirement or death (on the basis of time or turnover). Through P & L Suspense A/c (in case of no change in PSR of remaining partners). Through Gaining Partners' capital/current A/c (in case of change in PSR of remaining partners).
- (v) Preparation of Revaluation Account on retirement or death of a partner. Self-Explanatory.
- (vi) Adjustment of capitals. (a) Readjusting the adjusted capital of the continuing partners in the new profit-sharing ratio. (b) Adjusting the capitals of the continuing partners on the basis of the total capital of the new firm. (c) When the continuing partners bring in cash to pay off the retiring partners.
- (vii) Calculation and payment of amount due to retiring partner. Self-Explanatory.
- (viii) Preparation of retiring partner's loan accounts and deceased partner's executor's loan account (with interest on loan accrued and due and interest on loan accrued but not due). Self-explanatory.
- (ix) Change in Profit-Sharing Ratio. Change in PSR takes place at the time of retirement/death of a partnership firm. Accounting treatment of accumulated profits and losses through one journal entry: Gaining Partners' Cap Current A/c Dr. To Sacrificing Partners' Cap/Current (in case of profits). Sacrificing Partners' Cap/Current A/c Dr. To Gaining Partners' Cap/Current (in case of losses) General Reserve/ Reserve fund, Workmen Compensation Reserve/ Fund, Investment Fluctuation Reserve/ Fund, Contingency Reserve, Profit and Loss Account (Debit and Credit Balance) and Advertisement Suspense Account/ Deferred Revenue Expenditure.

NOTE: – Preparation of Balance Sheet during retirement / death of a partner to be done in Horizontal format only.

- Memorandum Revaluation Account, joint life policy and individual life policy are excluded from syllabus.

**July**

#### **Chapter 5 Dissolution of Partnership Firm**

##### **Learning Outcome-**

After studying this chapter you should be able to understand:

III. Dissolution of a Partnership firm.

- (i) Meaning of dissolution and settlement of accounts under Section 48 of The Indian Partnership Act 1932. Self- Explanatory
- (ii) Preparation of Memorandum Balance Sheet, Realization Account, Partner's Loan Account, Partner's Capital Account and Cash/Bank Account. Self-explanatory.

NOTE:

When an asset or a liability is taken to the realization account any corresponding/related fund or reserve is also transferred to realization account and not to the partners' capital accounts.

When accounts are prepared on a fixed capital basis, partners' current account balances are to be transferred to capital account. No adjustments are required to be passed through current account. Bank overdraft is to be taken to the Bank/Cash A/c and not to be transferred to realization account but bank loan must be transferred to realization account.

- If question is silent about the payment of a liability, then it has to be paid out in full.
  - If the question is silent about the realized value of tangible assets it should be considered as realized at book value itself.
  - If the question is silent about the realized value of intangible assets it should be considered as nil (zero value).
  - Loan taken from a partner will be passed through cash or bank account even if the partner's capital account has a debit balance.
  - Loan given to a partner will be transferred (debited) to his Capital account.
  - Realization expenses – paid by the firm; paid by a partner; borne by a partner; to be borne by a partner but paid by the firm on his behalf; partner reimbursed by the firm for the realization expenses paid by him with an asset of the firm.
- 
- Admission cum retirement, amalgamation of firms and conversion/sale to a company together with piecemeal distribution and insolvency of a partner / partners not required.

#### **I Unit Test Syllabus:**

##### **Chapter 1**

##### **Accounting for Partnership Firms - Fundamentals**

**Term 2**

**VOLUME-II**

**July**

**Chapter 6**

**Company Accounts - Issue of Shares**

**Learning Outcome-**

After studying this chapter you should be able to understand:

A. Issue of Shares Problems on issue of shares.

(a) Issue of shares at par and premium under Companies Act, 2013.

**August**

**Chapter 6**

**Company Accounts - Issue of Shares**

**Learning Outcome-**

After studying this chapter you should be able to understand:

A. Issue of Shares Problems on issue of shares.

(a) Issue of shares at par and premium under Companies Act, 2013.(Revision)

(b) Issue of shares for considerations other than cash:

• To promoters (can be considered either through Goodwill account or Incorporation costs account).

• To underwriters. • To vendors.

(c) Calls in arrears, calls in advance and interest thereon.

(d) Over and undersubscription (including pro-rata allotment).

(e) Preparation of Journal; Cash Book and Journal Proper; Ledger Accounts.

NOTE: In pro-rata allotment when shares are issued at a premium, excess money received on application will first be adjusted towards the share capital. Any excess thereon will be utilized towards the Securities Premium Reserve. When allotment or any call money is due, it is to be transferred to the calls in arrears account, on which interest, if provided in the Articles of Association, will be calculated.

(f) Forfeiture and reissue of shares at par, premium or discount. Self-explanatory.

(g) Disclosure of Share capital in the company's Balance Sheet.

NOTE: Issue of bonus and rights shares, private placement of shares, sweat equity shares, employees' stock option scheme, reservations for small individual participants and minimum tradable lots are not required.

**Chapter 7**

**Company Accounts - Issue of Debentures**

**Learning Outcome-**

After studying this chapter you should be able to understand:

B. Issue of Debentures

Problems on issue of debentures (at par, at premium and at discount.) Problems on issue of debentures to include:

(a) Issue of debentures at par, at premium and at discount under Companies Act 2013.

(b) Issue of debentures as collateral security for a loan.

(c) Issue of debentures for considerations other than cash.

• To promoters. • To underwriters. • To vendors

(d) Accounting entries at the time of issue when debentures are redeemable at par and premium.

(e) Calls in arrears, calls in advance and interest thereon.

(f) Interest on debentures (with TDS).

(g) Disclosure of Debentures in the company's Balance Sheet.

NOTE: All capital losses to be written off in the year in which they occur.

**Chapter 8**

**Company Accounts - Redemption of Debentures**

**Learning Outcome-**

After studying this chapter you should be able to understand:

C. Redemption of Debentures • Creation of Debenture Redemption Reserve (wherever applicable)

• Redemption of debentures out of profits. • Redemption of debentures out of capital. • Redemption of debentures in a lump sum. • Redemption of debentures in annual installments by draw of lots. Self-explanatory.

NOTE:

I. All capital losses to be written off in the year in which they occur.

II. Calculation of ex-interest and cum-interest are not required.

III. In case of redemption of debentures in annual instalments by draw of lots:

(i) The entire DRI purchased for the redemption of the instalment of debentures is not sold at the end of the year but sold/further purchased to the extent to maintain 15% of the face value of the debentures to be redeemed in the next instalment. In case of redemption in equal instalments, DRI purchased for the first instalment remains invested till the last instalment.

(ii) Wherever applicable, DRR is transferred to General Reserve in proportion to the debentures redeemed.

IV. Rules relating to creation of Debenture Redemption Reserve (DRR):

(i) Listed companies including NBFCs registered with RBI and HFCs registered with National Housing Bank

(NHB) both for public issue as well as private placements do not require the creation of any DRR.

(ii) Unlisted NBFCs registered with RBI and HFCs registered with National Housing Bank (NHB) both for public issue as well as private placements do not require the creation of any DRR.

(iii) For unlisted companies (other than NBFCs and HFCs), DRR is created to the extent of 10 percent of the outstanding debentures.

Rules regarding Debenture Redemption Investment (DRI)

- Unlisted NBFCs and HFCs need not deposit any amount of its debentures maturing during the year with scheduled banks or invest it in specified government securities.
- The following companies will continue to invest or deposit, on or before 30th April in each year, a sum which shall not be less than 15 per cent, of the amount of its debentures maturing during the year, ending on 31st March of the next year, in deposits with any scheduled bank, free from any charge or lien / in unencumbered securities of the Central Government or any State Government / in unencumbered securities mentioned in Section 20 of the Indian Trusts Act, 1882/ in unencumbered bonds issued by any other company notified under Section 20 of the Indian Trusts Act, 1882:

(i) Listed companies including NBFCs registered with RBI HFCs National Housing Bank (NHB) and unlisted companies (other than NBFCs and HFCs).

(ii) Unlisted companies (other than NBFCs and HFCs).

Basically, All India Financial Institutions regulated by RBI, Banking Companies for both public as well as privately placed debentures, other Financial Institutions within the meaning of Section 2(72) of the Companies Act, 2013 and unlisted NBFCs registered with RBI and HFCs registered with National Housing Bank (NHB) are exempted both, from creating DRR and from making a DRI.

**Chapter 9 Financial Statements of Companies**

**Learning Outcome-**

After studying this chapter you should be able to understand:

**D. Final Accounts of Companies**

Preparation of the Balance Sheet of a company (along with notes to accounts) as per Schedule III Part I of Companies Act 2013.

Amendments:

1. As per the amendment made in Accounting Standard 4, dividend proposed for a year is not a liability till it has been approved by the shareholders. Thus, proposed dividend is not shown as a short-term provision in the current Balance Sheet of a company but disclosed in Notes to Accounts under Contingent Liabilities.

2. Schedule III of Companies Act 2013 has been amended whereby:

(I) The sub-head 'Fixed Assets' under Non-Current Assets is replaced with 'Property, Plant and Equipment and Intangible Assets.'

(II) Tangible Assets under Fixed Assets is replaced with 'Property, Plant and Equipment.'

3. Current maturities of long-term borrowings to be shown under the Head - Current Liabilities Sub head- Short Term Borrowing.

All capital losses to be written off in the year in which they occur unless otherwise mentioned.

NOTE: Schedule III Part II of Companies Act 2013 (Statement of Profit and Loss) is not required for the purpose of preparing final accounts of a Company.

However, for the preparation of Comparative and Common Size Income Statements (Section B – Unit 4: Financial Statement Analysis), the extent and format of the Statement of Profit and Loss as per Schedule III Part II of the Companies Act 2013 to be studied is as follows:

Statement of Profit and Loss for the year ended:.....

	Particulars	Note No.	Figures for the Current reporting period	Figures for the Previous reporting period
I	Revenue from operations			
II	Other Income			
III	Total Revenue (I + II)			
IV	Expenses: Cost of materials consumed Purchases of Stock-in-Trade Changes in inventories of finished goods Work-in-progress and Stock-in Trade Employee benefits expense Finance costs Depreciation and amortization expense Other expenses Total expense			
V	Profit before tax (III-IV)			
VI	Less Tax			
VII	Profit after Tax (V-VI)			

### **Learning Outcome-**

After studying this chapter you should be able to understand:

3. Financial Statement Analysis- Meaning.

## **Chapter 11 Tools for Financial Analysis : Comparative Statements**

### **Learning Outcome-**

After studying this chapter you should be able to understand:

3. Financial Statement Analysis- Comparative Statements and Common Size Statements.

Meaning, significance and limitations of Comparative Statements and Common Size Statements.

Preparation of Comparative Balance Sheet and Statement of Profit and Loss (inter-firm and intra-firm) showing absolute change and percentage change.

NOTE: Preparation of comparative statements and common size statements to be made from the Balance Sheets and Statements of P/L without notes to accounts.

## **Chapter 12 Common Size Statements**

### **Learning Outcome-**

After studying this chapter you should be able to understand:

3. Financial Statement Analysis- Common Size Statements.

Meaning, significance and limitations of Common Size Statements.

Common size Balance Sheet to be prepared as a percentage of total assets and total liabilities. Common size Statement of Profit and Loss to be prepared as a percentage of Revenue from operations.

NOTE: Preparation of comparative statements and common size statements to be made from the Balance Sheets and Statements of P/L without notes to accounts.

## **Chapter 13 Cash Flow Statement**

### **Learning Outcome-**

After studying this chapter you should be able to understand:

4. Cash Flow Statement (Only for Manufacturing Companies)

(i) Meaning, importance and preparation of a Cash Flow Statement.

NOTE: Based on Accounting Standard – 3 (revised) issued by the Institute of Chartered Accountants of India.

(ii) Calculation of net cash flows from operating activities based on Indirect Method only. Preparation of a Cash Flow Statement from two consecutive years' Balance Sheet with or without adjustments.

Preparation of complete/partial cash flow statement from extracts of Balance Sheets and Statements of P/L with or without adjustments.

NOTE: Any adjustment or an item in the Balance Sheet relating to extraordinary items and refund of tax are not required.

(iii) Preparation of Cash Flow Statement on basis of operating, investing and financing activities.

The following items are to be taken when calculating net cash flows from financing activities:

- Issue of shares at par and premium, issue of debentures at par, premium and discount.
- Redemption of preference shares and debentures at par.
- Interest paid on Long-Term and Short-Term Borrowings.
- Dividend– interim and final- paid on shares.
- Long-term borrowings and Short-term borrowings – bank overdraft, cash credit and short-term loan. whether taken or repaid.
- Share issue expenses / underwriting commission paid.

The following items are to be taken when calculating net cash flows from investing

activities: • Cash purchase of Property, Plant & Equipment & intangible assets. • Cash sale of Property, Plant & Equipment & intangible assets. • Purchase of shares or debentures or long-term investments of other companies.

• Interest and dividend received on shares or debentures or long- term investments of other companies.

• Sale of shares or debentures or long- term investments of other companies.

The following items are to be taken for cash and cash equivalents: • Cash • Bank • Short term investments

• Marketable securities

NOTE:

(i) Adjustments relating to provision for taxation, proposed dividend, interim dividend, amortization of intangible assets, profit or loss on sale of fixed assets including provision for/accumulated depreciation on them, Profit or loss on sale of investment, uses of Securities Premium Reserve as per 52 (2) of the Companies Act, 2013, (including issue of bonus shares), issue of shares/debentures for consideration other than cash are also included.

(ii) Treatment of proposed dividend:

(a) Dividend proposed for the previous year will be an outflow for cash, unless otherwise stated, on the assumption that the proposed amount has been approved by the shareholders in the AGM.

(b) No effect is given to Proposed Dividend for the current year as it is not provided for and is a contingent liability.

(c) Any unpaid dividend is transferred to Dividend Payable Account / Unpaid Dividend Account which is shown in the Balance Sheet of the current year as Other Current Liabilities under Current Liabilities.

(iii) Treatment of provision for doubtful debts- Provision for doubtful debts can be treated as a charge against profits or as part of the working capital changes. In case of good debtors, the provision will be treated as an appropriation of profit.

- (iv) To calculate cash flow from operating activities the Adjusted Profit and Loss Account is not acceptable as per AS-3.
- (v) Calculation of Net Profit before Tax has to be shown as a Working Note.
- (vi) Excluded: Any transaction pertaining to Capital Reserve.

## October

### Chapter 14 Ratio Analysis

#### Learning Outcome-

After studying this chapter you should be able to understand:

#### A. Liquidity Ratios:

- (i) Current Ratio:
- (ii) Quick Ratio / Liquid Ratio / Acid Test Ratio:

#### B. Solvency Ratios:

- (i) Debt to Equity Ratio:
- (ii) Proprietary Ratio:
- (iii) Debt to Total Assets Ratio:
- (iv) Interest coverage ratio:

#### C. Activity Ratios:

- (i) Trade Receivables Turnover Ratio:
- (ii) Trade Payables Turnover Ratio :
- (iii) Working Capital Turnover Ratio :
- (iv) Inventory Turnover Ratio :

#### D. Profitability Ratios: (i) Gross Profit Ratio:

- (ii) Net Profit Ratio:
- (iii) Operating Ratio:
- (iv) Operating Profit Ratio:
- (v) Earning per share:
- (vi) Price Earning Ratio:
- (vii) Return on Investment:

#### NOTE:

1. Current Ratio includes Net Debtors (Gross Debtors – Provision for doubtful debts) while Trade Receivables Turnover Ratio includes Gross Debtors.
2. Other Current Assets' is restricted to Prepaid Expenses and Accrued Income.
3. Capital employed = Shareholders' Funds + Non-current Liabilities – Non-trade Investments OR Non-current Assets (excluding Non-trade Investments) + Working Capital OR Property, Plant & Equipment & Intangible Assets + Trade Investments + Working Capital
4. Investments to be taken as non-trade investments unless specified as trade investments.
5. In Return on Investments Ratio- Net Profit before interest and tax will not include interest on non-trade investments.
6. Revenue from operations (for a manufacturing company)  
For a manufacturing company-
  - Net Sales • Sale of scrap-For a manufacturing company
- Other Income: (for a manufacturing company) • Rent received (non- operating) • Commission received (operating) • Interest and Dividend Received (non- operating) • Profit from Sale of Fixed Assets (non-operating) • Cash discount received (operating)
7. Problems on effect of transactions on ratios to be restricted to Current Ratio, Quick Ratio and Debt-Equity Ratio.
8. Net Profit Ratio is to be calculated on 'Net Profit after Tax'.

**Note: The course for Half Yearly and Pre-Boards will include all the prescribed topics from March to October.**

## Term 3

### November

#### Revision

#### VOLUME-I

Chapter 1	Accounting for Partnership Firms - Fundamentals
Chapter 2	Goodwill : Concept and Valuation
Chapter 3	Admission of a Partner
Chapter 4	Retirement or Death of a Partner
Chapter 5	Dissolution of Partnership Firm

### December

#### Revision

#### VOLUME-II

Chapter 6	Company Accounts - Issue of Shares
Chapter 7	Company Accounts - Issue of Debentures
Chapter 8	Company Accounts - Redemption of Debentures
Chapter 9	Financial Statements of Companies

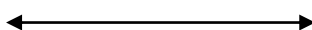
### January

#### Revision

Chapter 10	Financial Statements Analysis
Chapter 11	Tools for Financial Analysis : Comparative Statements

Chapter 12 Common Size Statements  
Chapter 13 Cash Flow Statement

February Revision  
Chapter 14 Ratio Analysis



## COMMERCE

For further details, students must go through I.S.C. 2025 Syllabus Booklet.

### Term 1

March

#### Chapter 1 Business Environment

##### Learning Outcome-

After studying this chapter you should be able to understand:

Concept, and importance of Business Environment. Meaning, features and importance of Business Environment; Dimensions of Business Environment – Micro (Internal and External factors) and Macro (Economic, social, technological, political and legal) – meaning and components. S.W.O.T. Analysis - A basic understanding of S.W.O.T. (Strength, Weakness, Opportunity and Threat) Analysis.

April

#### Chapter 2 Capital–Fixed and Working

##### Learning Outcome-

After studying this chapter you should be able to understand:

(i) Capital: Sources of finance for sole trader; partnership; Joint Stock Company; financial planning. Importance of finance for business. Sources of finance for different types of business firms. Meaning, features and importance of financial planning. Factors affecting capital structure. Fixed capital - meaning, factors affecting fixed capital. Working capital – meaning, types; factors affecting working capital. Comparison between fixed and working capital.

#### Chapter 3 Sources of Finance for a Joint Stock Company

##### Learning Outcome-

After studying this chapter you should be able to understand:

(ii) Sources of finance for a Joint Stock Company

(a) Different types of shares: equity, preference. Bonus shares, rights issue, ESOP, Sweat Equity Shares, Retained earnings. Long-term sources of funds. Equity shares - features, advantages and disadvantages. Preference shares - features, types, advantages and disadvantages; distinction between equity shares and preference shares. Bonus and rights issue, ESOP and Sweat Equity Shares - meaning. Distinction between bonus shares and right shares. Retained earnings – meaning, merits and demerits.

(b) Loan capital: debentures. Debentures – meaning; kinds of debentures; advantages and disadvantages of debentures. Distinction between shares and debentures.

(c) Loans from commercial banks and Financial Institutions- meaning, advantages and disadvantages.

(d) Short-term sources of funds. Short-term sources of funds – different types of short-term financial assistance by Commercial Banks; public deposits, trade credit, customer advances, factoring, Inter corporate deposits and installment credit. Meaning, advantages and disadvantages of various sources of funds.

May

#### Chapter 4 Banking–Latest Trends

##### Learning Outcome-

After studying this chapter you should be able to understand:

(iii) Banking - latest trends. Online services- transfer of funds through Real Time Gross Settlement (RTGS), National Electronic Funds Transfer (NEFT), Immediate Payment Service (IMPS), issue of demand drafts online: meaning and features.

Online payments, e-Banking – meaning and features, advantages and disadvantages. Mobile Banking - SMS alerts, transfer of funds, making payments - advantages and disadvantages. Debit Cards vs Credit Cards, ATM (Automated Teller Machine) – Meaning; Debit card and credit card: features and differences.

#### Chapter 5 Management–Meaning, Nature and Importance

##### Learning Outcome-

After studying this chapter you should be able to understand:

(i) Management: Meaning, objectives and characteristics of management. Meaning of Management: as an activity; as a group; as a discipline; as a process. Objectives and characteristics of management.

(ii) Nature of Management – Science, Art and Profession. Self explanatory.

(iii) Importance of Management. Self explanatory.

July

#### Chapter 6 Principles of Management

##### Learning Outcome-

After studying this chapter you should be able to understand:



(iv) Principles of Management: nature of principles; need for principles. Nature of principles of Management; need for principles of management; Taylor's 5 scientific principles of Management; Fayol's 14 principles of Management; Relevance of the principles of Management in today's business scenario. Comparison of Taylor's and Fayol's principles.

### **I Unit Test Syllabus:**

#### **Chapter 1 Business Environment**

#### **Term 2**

**July**

#### **Chapter 7 Functions of Management and Coordination**

##### **Learning Outcome-**

After studying this chapter you should be able to understand:

(v) Functions of Management: Planning; Organising; Staffing; Directing; Controlling and Coordinating.

**August**

#### **Chapter 7 Functions of Management and Coordination**

##### **Learning Outcome-**

After studying this chapter you should be able to understand:

(f) Coordination: Meaning of Coordination; Coordination as an essence of Management.

#### **Chapter 8 Planning**

##### **Learning Outcome-**

After studying this chapter you should be able to understand:

(a) Planning: Meaning, steps, importance & limitation; Types of plans; Objectives, policy, procedures, method, rule, budget, program – meaning, features and differences.

#### **Chapter 9 Organising**

##### **Learning Outcome-**

After studying this chapter you should be able to understand:

(b) Organising: Meaning, importance, steps; Structure of organization (line, line and staff, functional and divisional; Formal and informal organization) – Meaning, features, merits, demerits and differences between line and line & staff, functional and divisional, formal and informal; Meaning and importance of delegation of authority; Decentralization v/s Centralization, comparison between delegation and decentralization, merits and demerits.

#### **Chapter 10 Staffing**

##### **Learning Outcome-**

After studying this chapter you should be able to understand:

(c) Staffing: meaning, steps and importance; Recruitment - Meaning and sources; Selection –Meaning and procedure; Training and development – Meaning, types of training, difference between selection and recruitment, Training and Development.

**September**

#### **Chapter 11 Directing**

##### **Learning Outcome-**

After studying this chapter you should be able to understand:

(d) Directing: Meaning and importance; Supervision-Meaning, functions and span of control; Motivation - Meaning and Maslow's theory; Leadership- Meaning and qualities of a good leader; Communication - Meaning, objectives and process. Barriers to communication and overcoming barriers to communication.

#### **Chapter 12 Controlling**

##### **Learning Outcome-**

After studying this chapter you should be able to understand:

(e) Controlling: Meaning, steps and importance; Relationship between Planning and Controlling; Management by Exception.

#### **Chapter 13 Marketing - Concept and Functions**

##### **Learning Outcome-**

After studying this chapter you should be able to understand:

(i) Marketing: concept and functions. Meaning and types of markets; meaning and features of marketing. Marketing concepts: traditional v/s modern - meaning and features of traditional and modern concepts of marketing. Comparison between marketing and selling. Objectives and importance of marketing; functions of marketing – meaning, features of each function of marketing.

#### **Chapter 14 Marketing Mix**

##### **Learning Outcome-**

After studying this chapter you should be able to understand:

(ii) Marketing Mix - Meaning and Elements. Product Mix - goods and services - meaning,

features and types of goods; meaning, features of services; difference between product and services. Branding: meaning and merits. Labeling: meaning and merits. Packaging: meaning and features of good packaging. Price Mix – meaning, factors determining price. Place Mix – meaning, channel of distribution choice of channels of distribution and physical distribution. Promotion Mix – Meaning and elements. Elements – Advertising, sales promotion, personal selling and publicity – meaning, features, objectives and differences.

**October**

**Chapter 15 Consumer Protection**

**Learning Outcome-**

After studying this chapter you should be able to understand:

(iii) Consumer protection: rights of consumers, methods of consumer protection.

Need for consumer protection; methods of consumer protection - self-help, legislative measures and consumer associations/NGOs, Consumer Protection Act, 2019 - Rights of consumers. The Consumer Disputes Redressal Commissions (National, State and District). Difference between Consumer Protection Act, 1986 and Consumer Protection Act, 2019.

**Note: The course for Half Yearly and Pre-Board will include all the prescribed topics from March to October.**

**Term 3**

**November**

Chapter 1

Chapter 2

Chapter 3

Chapter 4

Chapter 5

Chapter 6

Chapter 7

**Revision**

Business Environment

Capital–Fixed and Working

Sources of Finance for a Joint Stock Company

Banking–Latest Trends

Management–Meaning, Nature and Importance

Principles of Management

Functions of Management and Coordination

**December**

Chapter 8

Chapter 9

Chapter 10

Chapter 11

Chapter 12

**Revision**

Planning

Organising

Staffing

Directing

Controlling

**January**

Chapter 13

Chapter 14

Chapter 15

**Revision**

Marketing - Concept and Functions

Marketing Mix

Consumer Protection

**February**

Chapter 15

**Revision**

Consumer Protection



## **ECONOMICS**

**For further details, students must go through I.S.C. 2025 Syllabus Booklet.**

**Term 1**

**March**

**Chapter 1**

**Demand Analysis**

**Learning Outcome-**

After studying this chapter you should be able to understand:

(i) Demand: meaning, factors affecting demand; Demand function; Law of Demand; derivation of demand curve; movement and shift of the demand curve; exceptions to the Law of Demand.

The concept of demand: meaning, types of demand. A demand function to be specified incorporating the determinants of demand. Diagrams should be used in explaining the Law of Demand, reasons for downward slope of demand curve, its derivation using demand schedule. Derivation of market demand curve from individual demand curve.

**April**

**Chapter 2**

**Equilibrium Analysis of the Consumer**

**Learning Outcome-**

After studying this chapter you should be able to understand:

(i) Law of Diminishing Marginal Utility, Law of Equimarginal Utility, consumer's equilibrium through utility approach (Cardinal) and indifference curve analysis (Ordinal).

(a) Cardinal Utility Analysis: meaning of utility, total utility, marginal utility, relationship of TU and MU, Law of Diminishing Marginal Utility (schedule and diagram, Only assumptions to be taught, criticisms not required), Consumer's equilibrium – one commodity (schedule and diagram), Law of Equimarginal Utility (statement, schedule) and conditions of consumer's equilibrium using marginal utility;  
(b) Ordinal Utility Analysis: Indifference Curve – its meaning and properties (including MRS and DMRS), indifference map, consumer's budget line, Consumer's equilibrium – condition (to be explained with the help of a diagram).

### **Chapter 3 Elasticity of Demand**

#### **Learning Outcome-**

After studying this chapter you should be able to understand:

(ii) Elasticity of demand: meaning, types of elasticity of demand, measurement of elasticity of demand; factors affecting elasticity of demand. Various methods of measurement of the elasticity of demand: point method - percentage method, expenditure method and geometric method. (Numericals required on percentage method only). The cross and income elasticity of demand must be explained. Degrees of elasticity of demand to be explained. Use diagrams wherever necessary.

### **Chapter 4 Concept of Supply and Elasticity of Supply**

#### **Learning Outcome-**

After studying this chapter you should be able to understand:

(iii) Supply: meaning; difference between stock and supply; determinants of supply; Law of Supply; movement and shift of the supply curve; elasticity of supply.

Difference between stock (intended supply) and supply (actual supply) with the help of relevant examples. A supply function should be specified and explained. Law of Supply: Meaning, supply schedule and supply curve. Derivation of market supply curve from individual supply curve. Movement and shift of the supply curve, exceptions to the Law of Supply. Elasticity of Supply: Meaning, degrees of elasticity of supply and measurement of elasticity of supply by percentage method and geometric method.

### **May**

### **Chapter 5 Market Mechanism: Equilibrium Price and Effect of Changes in Demand and Supply on the Equilibrium Price**

#### **Learning Outcome-**

After studying this chapter you should be able to understand:

(iv) Market Mechanism: Equilibrium and disequilibrium; Equilibrium price and effect of changes in demand and supply on the equilibrium price. Simple applications of tools of demand and supply.

A basic understanding of the concept of equilibrium. The effects of changes in demand and supply - both along the curves and shift of the curves to be explained.

Basic understanding of Price control, rationing, Price ceiling and Floor price with the help of demand and supply curves.

### **Chapter 6 Production Function: Returns to a Factor and Returns to Scale**

#### **Learning Outcome-**

After studying this chapter you should be able to understand:

(v) Concept of production and production function: (short run and long run production function), returns to a factor, returns to scale (meaning only) total, average and marginal physical products; Law of Variable Proportions and its three stages.

A production function (concept only). Law of Variable Proportions: statement, assumptions, schedule (for the purpose of understanding and not for testing), diagram and explanation to the three stages.

### **Chapter 7 Cost Analysis**

#### **Learning Outcome-**

After studying this chapter you should be able to understand:

(vi) Cost: Basic concepts of cost; fixed cost, variable cost, total cost, marginal cost and average cost – their relationships; opportunity cost; short run and long run cost curves.

Basic concepts – private cost, economic cost, social cost, money cost, real cost, explicit cost, implicit cost. Cost concepts – Fixed cost, variable cost, total cost, marginal cost, average cost with schedule and diagram; relationship between average cost, marginal cost, total cost (only concepts of long run and short run cost curves, derivations not required). Opportunity cost – meaning only. Difference between accounting cost and opportunity cost.

### **Chapter 8 Market Morphology**

#### **Learning Outcome-**

After studying this chapter you should be able to understand:

(vii) Main market forms: perfect competition, monopolistic competition, oligopoly, monopoly, monopsony.

### **Chapter 9 Concept of Revenue and Profit**

#### **Learning Outcome-**

After studying this chapter you should be able to understand:

(vi) Revenue: meaning; average revenue, marginal revenue and total revenue and their relationships under perfect competition and imperfect competition, Revenue – Average revenue, marginal revenue, total revenue – concepts and relationships under perfect competition and imperfect competition.

**July**

**Chapter 10 Equilibrium of the Firm (Producer): A General View**

**Learning Outcome-**

After studying this chapter you should be able to understand:

Producer's equilibrium:

Producer's equilibrium (Profit maximization goal) – meaning; conditions:

(a) TR and TC approach along with diagram (b) MR and MC approach along with diagram.

**Chapter 11 Main Market Forms**

**Learning Outcome-**

After studying this chapter you should be able to understand:

(vii) Main market forms: perfect competition, monopolistic competition, oligopoly, monopoly, monopsony; characteristics of the various market forms; equilibrium of a firm in perfect competition under short run and long run. Features of perfect competition, monopolistic competition, oligopoly, monopoly and monopsony (meaning only). Equilibrium of a firm in perfect competition under short run (explanation and diagram, shut down point and break-even point) and long run (diagram not required)

**I Unit Test Syllabus:**

**Chapter 2 Equilibrium Analysis of the Consumer**

**Term 2**

**July**

**Chapter 12 Aggregate Demand and Aggregate Supply**

**Learning Outcome-**

After studying this chapter you should be able to understand:

Basic concepts and determination of Income and Employment.

**August**

**Chapter 12 Aggregate Demand and Aggregate Supply**

**Learning Outcome-**

After studying this chapter you should be able to understand:

Basic concepts and determination of Income and Employment-The concept of demand (exante) and effective (expost) demand. Aggregate demand and its components, Meaning of full employment.

**Chapter 13 Propensity to Consume, Save and Investment**

**Learning Outcome-**

After studying this chapter you should be able to understand:

Propensity to consume and propensity to save (average and marginal)

**Chapter 14 Determination of Equilibrium Level of Income and Multiplier Analysts**

**Learning Outcome-**

After studying this chapter you should be able to understand:

Equilibrium output; investment multiplier (its meaning and mechanism with the help of a diagram). Simple numerical based on the above.

**Chapter 15 Problems of Excess Demand and Deficient Demand**

**Learning Outcome-**

After studying this chapter you should be able to understand:

Problems of excess demand and deficient demand; measures to correct them.

**Chapter 16 Money and Inflation**

**Learning Outcome-**

After studying this chapter you should be able to understand:

(i) Money: meaning, functions of money, supply of money. Meaning, kinds of money, functions of money (primary, secondary and contingent) to be explained; supply of money (only meaning of  $M_0$ ,  $M_1$ ,  $M_2$ ,  $M_3$  &  $M_4$ ). Inflation: meaning, demand pull and cost push (diagrams not required)

**Chapter 17 Banking System**

**Learning Outcome-**

After studying this chapter you should be able to understand:

(ii) Banks: functions of commercial bank; high powered money, credit creation by commercial banks; Central Bank: functions. Basic understanding of the functions of commercial banks, credit creation process with limitation. The regulatory role of the Central Bank, its functions and the way it controls the flow of credit needs to be explained. A brief mention may be made of quantitative CRR, SLR, Bank Rate policy (repo rate and reverse repo rate) and Open Market Operations and qualitative methods.

**September**

**Chapter 18 Balance of Payment and Exchange Rate**

### **Learning Outcome-**

After studying this chapter you should be able to understand:

Balance of Payment - Meaning and components; Causes of disequilibrium and how the disequilibrium can be corrected.

Foreign exchange – meaning, determination of exchange rate (Flexible).

Foreign Exchange Rate – meaning, meaning of fixed and flexible exchange rate, determination of exchange rate in a free market. Concepts of depreciation, appreciation, devaluation and revaluation (meaning only).

### **Chapter 19 National Income**

#### **Learning Outcome-**

After studying this chapter you should be able to understand:

(i) Circular flow of Income. A simple model explaining the circular flow of income with two, three and four sector models with leakages and injections.

(ii) Concepts and definition of NY, GNP, GDP, NNP, private income, personal income, personal disposable income, National Disposable Income and per capita income; relationship between the income concepts. A brief understanding of the mentioned national income aggregates is needed. The concepts of GNP and NNP should be explained both at factor cost and market prices, real GDP and nominal GDP, National Disposable Income (Gross and Net), GDP and Welfare, GDP as an indicator of Economic welfare.

(iii) Methods of measuring National Income: product or value-added method; income method and expenditure method with simple numericals based on them.

Simple numericals based on all the methods to be covered for better understanding of the concept. Precautions and difficulties of measuring National Income for each method.

### **October**

### **Chapter 20 Public Finance: Fiscal Policy and Budget**

#### **Learning Outcome-**

After studying this chapter you should be able to understand:

(i) Fiscal Policy: meaning and instruments of fiscal policy. Meaning and instruments of fiscal policy – Public Revenue: Meaning, taxes (Meaning and types), difference between direct and indirect taxes; Public Expenditure: Meaning and importance; Public Debt: Meaning and redemption; Deficit Financing: meaning.

(ii) Government Budget: meaning, types and components. Meaning and types of Government budget – union, state; components – revenue and capital. Concept of deficit budget: revenue deficit, fiscal deficit, primary deficit – their meaning and implications.

**Note: The course for Half Yearly and Pre-Boards will include all the prescribed topics from March to October.**

### **Term 3**

#### **November**

Chapter 1  
Chapter 2  
Chapter 3  
Chapter 4  
Chapter 5

#### **Revision**

Demand Analysis  
Equilibrium Analysis of the Consumer  
Elasticity of Demand  
Concept of Supply and Elasticity of Supply  
Market Mechanism: Equilibrium Price and Effect of Changes in Demand and Supply on the Equilibrium Price  
Production Function: Returns to a Factor and Returns to Scale  
Cost Analysis  
Market Morphology  
Concept of Revenue and Profit

#### **December**

Chapter 10  
Chapter 11  
Chapter 12  
Chapter 13  
Chapter 14  
Chapter 15  
Chapter 16

#### **Revision**

Equilibrium of the Firm (Producer): A General View  
Main Market Forms  
Aggregate Demand and Aggregate Supply  
Propensity to Consume, Save and Investment  
Determination of Equilibrium Level of Income and Multiplier Analysts  
Problems of Excess Demand and Deficient Demand  
Money and Inflation

#### **January**

Chapter 17  
Chapter 18  
Chapter 19  
Chapter 20

#### **Revision**

Banking System  
Balance of Payment and Exchange Rate  
National Income  
Public Finance: Fiscal Policy and Budget

#### **February**

Chapter 20

#### **Revision**

Public Finance: Fiscal Policy and Budget



## COMPUTER SCIENCE

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### Term 1

#### March

##### Chapter 1

##### Boolean Algebra

##### Learning Outcome-

Students will learn propositional logic ,well formed formulae(wff),truth tables,satisfiable and unclassifiable and valid formulae. Equivalence laws and their use in simplifying wffs.Students will learn about propositional variables and its uses.Students will learn equivalence laws such as commutativity,associativity,distributivity,de-morgan's law ,law of implication etc., tautology, contradiction and contingency ,converse ,inverse and contrapositive . chain rule and modus ponens. Boolean algebra operation on AND,OR and NOT; TRUTH TABLES, basics theorem of Boolean algebra such as duality theorem ,de-morgan's etc.Students will learn about SOP expression (sum of product form)i.e minterm and POS expression(product of sum form)ie maxterm.Canonical sop and pos expression and cardinal representation and reducing expression by using K-Map(upto 4 variables).

##### Chapter 2

##### Computer Hardware

##### Learning Outcome-

Students will learn logic Gates(NOT,AND ,NOR ,OR,XOR,XNOR,NAND) and their use in circuits.

Application of boolean algebra and logic gates to half adders ,full adders, encoders, decoders, multiplexers, NAND,NOR as universal gates. Drawing of circuits purely by NAND and NOR gates only and simplification of circuits.

#### April

##### Chapter 2

##### Computer Hardware

##### Learning Outcome-

Students will learn logic Gates(NOT,AND ,NOR ,OR,XOR,XNOR,NAND) and their use in circuits.Application of boolean algebra and logic gates to half adders, full adders, encoders, decoders, multiplexers, NAND, NOR as universal gates. Drawing of circuits purely by NAND and NOR gates only and simplification of circuits.

##### Chapter 4

##### Objects

##### Learning Outcome-

Students will learn objects as data (attributes)+behaviour(methods or function) , objects as instance of a class,constructors.Analysis of real world programming examples in terms of objects and classes.Basics input /output using scanner and printer classes from jdk;input/output exceptions,Tokens in an input stream,concept of whitespace,extracting tokens from an input stream(String Tokenizer class).

##### Chapter 5

##### Primitive values,Wrapper classes,Types and casting

##### Learning Outcome-

Students will learn primitive values and its types such as int, char, long, float etc.corresponding wrapper classes for each primitive type.Class as types of the object.type casting-explicit and implicit.

##### Chapter 6

##### Variables and Expression

##### Learning Outcome-

Students will learn about variables, constant (final), expression such as logical and arithmetic and their evaluation. Operators, associativity, precedence, Assignment operators, different between left hand and right hand side of assignment.

##### Chapter 7

##### Statements and their Scope

##### Learning Outcome-

Students will learn about statements if,if-else ,if-else-if ladder,switch ,ternary operator etc,iterative statements(whiel ,for and do- while,continue and break), access specifiers and visibility of variables and methods in different scope or block,students will learn different types of access specifiers such as public ,private and proctected,types of variables.

##### Chapter 3

##### Programming in java (Review of class XI Section-B and Section-C)

##### Learning Outcome-

Students will revise all class XI topics with high order programming.

#### May

##### Chapter 8

##### Methods

### **Learning Outcome-**

Students will learn methods (as abstractions for complex user defined operations on objects), formal arguments and actual arguments in methods; different behaviour of primitive and object arguments. Static method and variables. The this Operator. Examples of algorithmic problem solving using methods (number problems, finding roots of algebraic equations etc.).

## **Chapter 9 Arrays and Strings in Java**

### **Learning Outcome-**

Students will learn structured data types – arrays (single and multi- dimensional), address calculations, strings. Example algorithms that use structured data types (e.g. searching, finding maximum/minimum, sorting techniques, solving systems of linear equations, substring, concatenation, length, access to char in string, etc.). Storing many data elements of the same type requires structured data types – like arrays. Access in arrays is constant time and does not depend on the number of elements. Address calculation (row major and column major), Sorting techniques (bubble, selection, insertion). Structured data types can be defined by classes – String. Introduce the Java library String class and the basic operations on strings (accessing individual characters, various substring operations, concatenation, replacement, index of operations). The class StringBuffer should be introduced for those applications that involve heavy manipulation of strings.

## **Chapter 10 Recursion in Java**

### **Learning Outcome-**

Students will learn concept of recursion, simple recursive methods (e.g. factorial, GCD, binary search, conversion of representations of numbers between different bases). Recursion can be initially motivated by using recursive equations to define certain methods. The definitions can be directly converted to a program. Emphasize that any recursion must have a base case. Otherwise, the computation can go into an infinite loop. The tower of Hanoi is a very good example of how recursion gives a very simple and elegant solution where as non-recursive solutions are quite complex.

### **July**

## **Chapter 10 Recursion in Java**

### **Learning Outcome-**

Students will learn concept of recursion, simple recursive methods (e.g. factorial, GCD, binary search, conversion of representations of numbers between different bases). Recursion can be initially motivated by using recursive equations to define certain methods. The definitions can be directly converted to a program. Emphasize that any recursion must have a base case. Otherwise, the computation can go into an infinite loop. The tower of Hanoi is a very good example of how recursion gives a very simple and elegant solution where as non-recursive solutions are quite complex.

### **I Unit Test Syllabus:**

## **Chapter 1 Boolean Algebra**

### **Term 2**

### **July**

## **Chapter 11 Inheritance and Polymorphism**

### **Learning Outcome-**

Students will learn inheritance; super and derived classes; member access in derived classes; redefinition of variables and methods in subclasses; abstract classes; class Object; protected visibility. Subclass polymorphism and dynamic binding, relationship between objects of the super class and that of the derived class. Interfaces in Java; implementing interfaces through a class; interfaces for user defined ,implementation of behaviour.

### **August**

## **Chapter 11 Inheritance and Polymorphism**

### **Learning Outcome-**

Students will learn inheritance; super and derived classes; member access in derived classes; redefinition of variables and methods in subclasses; abstract classes; class Object; protected visibility. Subclass polymorphism and dynamic binding, relationship between objects of the super class and that of the derived class. Interfaces in Java; implementing interfaces through a class; interfaces for user defined ,implementation of behaviour.

## **Chapter 12 Data structures**

### **Learning Outcome-**

Students will learn basic data structures (stack, queue, circular queue, dequeue); implementation directly through classes; definition through an interface and multiple implementations by implementing the interface. Conversion of Infix to Prefix and Postfix notations.

Single linked list (Algorithm and programming), binary trees, tree traversals (Conceptual). The following should be covered for each data structure: Linked List (single): insertion, deletion, reversal, extracting an element or a sublist, checking emptiness. Binary trees: apart from the definition the following concepts should be covered: root, internal nodes, external nodes (leaves), height (tree, node), depth (tree, node), level, size, degree, siblings, sub tree, completeness, balancing, traversals (pre, post and in-order).

### **September**

#### **Chapter 12 Data structures**

### **Learning Outcome-**

Students will learn basic data structures (stack, queue, circular queue, dequeue); implementation directly through classes; definition through an interface and multiple implementations by implementing the interface. Conversion of Infix to Prefix and Postfix notations.

Single linked list (Algorithm and programming), binary trees, tree traversals (Conceptual). The following should be covered for each data structure: Linked List (single): insertion, deletion, reversal, extracting an element or a sublist, checking emptiness. Binary trees: apart from the definition the following concepts should be covered: root, internal nodes, external nodes (leaves), height (tree, node), depth (tree, node), level, size, degree, siblings, sub tree, completeness, balancing, traversals (pre, post and in-order).

#### **Chapter 13 Complexity and Big O notation**

### **Learning Outcome-**

Students will learn concrete computational complexity; concept of input size; estimating complexity in terms of methods; importance of dominant term; constants, best, average and worst case. Big O notation for computational complexity; analysis of complexity of example algorithms using the big O notation (e.g. Various searching and sorting algorithms, algorithm for solution of linear equations etc.).

### **October**

#### **Chapter 13 Complexity and Big O notation**

### **Learning Outcome-**

Students will learn concrete computational complexity; concept of input size; estimating complexity in terms of methods; importance of dominant term; constants, best, average and worst case. Big O notation for computational complexity; analysis of complexity of example algorithms using the big O notation (e.g. Various searching and sorting algorithms, algorithm for solution of linear equations etc.).

### **Term 3**

#### **November**

**Revision**

#### **Chapter 1**

**Boolean Algebra**

#### **Chapter 2**

**Computer Hardware**

#### **Chapter 8**

**Methods**

#### **December**

**Revision**

#### **Chapter 9**

**Array and Strings**

#### **Chapter 10**

**Recursion in Java**

#### **Chapter 11**

**Inheritance and Polymorphism**

#### **Chapter 12**

**Data structures**

#### **January**

**Revision**

#### **Chapter 13**

**Complexity and Big O notation**

#### **Chapter 5**

**Primitive values, Wrapper classes, Types and casting**

#### **Chapter 4**

**Objects**

#### **Chapter 6**

**Variables and Expression**

#### **Chapter 7**

**Statements and their Scope**

#### **February**

**Revision**

#### **Chapter 3**

**Programming in java (Review of class XI Section-B and Section-C)**





## PHYSICAL EDUCATION

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### Term 1

March

Theory

Chapter 1

**Sociological Aspects of Physical Education**

**Learning Outcome-**

The students will get enabled to know about the strong connection between health and games from the ancient age.

**Practical:**

**Cricket**

**Learning Outcome-**

The students will get enabled to follow the rules of the game and field.

April

Theory

Chapter 2

**Training Methods**

**Learning Outcome-**

The students will get enabled to understand various methods of training.

**Practical:**

**Football and Hockey**

**Learning Outcome-**

The students will get enabled to get and follow the rules of the games and field.

May

Theory

Chapter 3

**Career Aspects in Physical Education**

**Learning Outcome-**

The students will get notified about various career options and their eligibilities in the field of Physical Education.

**Practical:**

**Basketball and Volleyball**

**Learning Outcome-**

The students will get enabled to understand and follow all the rules of the games and field.

July

Theory

Chapter 4

**Competition and Tournaments**

**Learning Outcome-**

The students will get enabled to understand the tournaments and its types.

### I Unit Test Syllabus

Chapter 1

**Sociological Aspects of Physical Education**

### Term 2

July

Theory

Chapter 5

**Health Education and Health Problems**

**Learning Outcome-**

The students will get awared of meaning, principles and objectives of health education.

August

Theory

Chapter 5

**Health Education and Health Problems**

**Learning Outcome-**

The students will get awared of meaning, principles and objectives of health education.

**Practical:**

**Badminton and Tennis**

**Learning Outcome-**

The students will get enabled to learn and apply the rules of the games and field.

September

Theory

Chapter 6

**Sports Injuries**

**Learning Outcome-**

The students will get enabled to come to know about different types of sports injuries and their prevention.

**Practical:**

**Athletics**

**Learning Outcome-**

The students will get enabled to know about different types of athletic events.

**October**

**Practical: Swimming**

**Learning Outcome-**

The students will get enabled to learn different types of swimming styles and the rules of pool.

**Term 3**

**November**

**Chapter 1**

**Chapter 2**

**Revision**

**Sociological Aspects of Physical Education**

**Training Methods**

**December**

**Chapter 3**

**Revision**

**Career Aspects in Physical Education**

**January**

**Chapter 4**

**Revision**

**Competition and Tournaments**

**February**

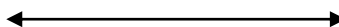
**Chapter 5**

**Chapter 6**

**Revision**

**Health Education and Health Problems**

**Sports Injuries**



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## S.U.P.W

**Term 1**

**March**

**Chapter 1**

**Photography**

**Learning Outcome-**

After studying this chapter you should be able to understand:

Photography: meaning, photographic camera, composition in photography, portrait photography, enlarging.

**April**

**Chapter 4**

**Tie and Dye**

**Learning Outcome-**

After studying this chapter you should be able to understand:

Tie and Dye: meaning, fabrics for tie and dye, technique / process of dye.

**May**

**Chapter 11**

**Leather Work**

**Learning Outcome-**

After studying this chapter you should be able to understand:

Leather work: meaning, types. Basic techniques of leather craft.

**Community Service 1: Record book page number 54 to 62.**

**July**

**Chapter 11**

**Leather Work**

**Learning Outcome-**

After studying this chapter you should be able to understand:

Leather work: meaning, types. Basic techniques of leather craft.

**Term 2**

**July**

**Chapter 2**

**Commercial Art**

**Learning Outcome-**

After studying this chapter you should be able to understand:

Commercial Art: meaning, material used for sketching, preparation of folder and poster.

**August**

**Chapter 2**

**Commercial Art**

**Learning Outcome-**

After studying this chapter you should be able to understand:

Commercial Art: meaning, material used for sketching, preparation of folder and poster.

**Craft / Skill 1:**

**Record book page number 83 to 89.**

**September**

**Chapter 13**

**Health and Hygiene**

**Learning Outcome-**

After studying this chapter you should be able to understand:

Health and Hygiene: Nutritional assessment, accidents and their prevention, First Aid Box, looking after animals.

**Community Service 2: Record book page number 64 to 72.**

**October**

**Chapter 13**

**Health and Hygiene**

**Learning Outcome-**

After studying this chapter you should be able to understand:

Health and Hygiene: Nutritional assessment, accidents and their prevention, First Aid Box, looking after animals.

**Term 3**

**November**

**Chapter 1**

**Revision**

**Photography**

**Craft / Skill 2:**

**Record book page number 91 to 97.**

**December**

**Chapter 4**

**Revision**

**Tie and Dye**

**Chapter 11**

**Leather Work**

**January**

**Chapter 2**

**Revision**

**Commercial Art**

**February**

**Chapter 13**

**Revision**

**Health and Hygiene**

