ACCELERATED
LEARNING
PROGRAMME
(ALP)

تسریع اتعلیم بر روی گرام
برای
انفرادیت کلاسیز

بنچاب کر کریکولم اینتر کلیسیک کب پورؤؤ، لا نور
# Table of Contents

<table>
<thead>
<tr>
<th>Class</th>
<th>Subject</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>English</td>
<td>01-04</td>
</tr>
<tr>
<td></td>
<td>Urdu</td>
<td>05-09</td>
</tr>
<tr>
<td></td>
<td>Islamiyat</td>
<td>09-12</td>
</tr>
<tr>
<td></td>
<td>Physics</td>
<td>12-15</td>
</tr>
<tr>
<td></td>
<td>Chemistry</td>
<td>15-18</td>
</tr>
<tr>
<td></td>
<td>Mathematics <em>(Algebra and Trigonometry)</em></td>
<td>19-21</td>
</tr>
<tr>
<td></td>
<td>Biology</td>
<td>22-26</td>
</tr>
<tr>
<td></td>
<td>Computer Science</td>
<td>27-28</td>
</tr>
<tr>
<td>12</td>
<td>English</td>
<td>29-30</td>
</tr>
<tr>
<td></td>
<td>Urdu</td>
<td>30-33</td>
</tr>
<tr>
<td></td>
<td>Mutalia Pakistan</td>
<td>34-36</td>
</tr>
<tr>
<td></td>
<td>Physics</td>
<td>36-38</td>
</tr>
<tr>
<td></td>
<td>Chemistry</td>
<td>39-41</td>
</tr>
<tr>
<td></td>
<td>Mathematics <em>(Calculus and Analytical Geometry)</em></td>
<td>41-43</td>
</tr>
<tr>
<td></td>
<td>Biology</td>
<td>43-47</td>
</tr>
<tr>
<td></td>
<td>Computer Science</td>
<td>47-49</td>
</tr>
</tbody>
</table>
FIRST YEAR

ENGLISH BOOK-I

LESSON 1: BUTTON, BUTTON
Classwork: Lesson, Theme, Reading Notes (Pg. 1-7), Exercise (Question: 3 -- Pg. 9), Exercise (Question: 6, 7 -- Pg. 10)
Homework: Exercise (Question: 1,3 -- Pg. 8, 9), Exercise (Question: 8 -- Pg. 10)

LESSON 3: DARK THEY WERE, AND GOLDEN-EYED
Classwork: Lesson, Theme, Reading Notes (Pg. 18-23), Exercise (Question: 1, 3, 5, 6 -- Pg. 23, 25)
Homework: Exercise (Question: 1,2 -- Pg. 23, 24), Exercise (Question: 5 -- Pg. 25)

LESSON 5: THE PIECE OF STRING
Classwork: Lesson, Theme, Reading Notes (Pg. 32-34), Exercise (Question: 1, 3 -- Pg. 35, 36)
Homework: Exercise (Question: 1,2 -- Pg. 35, 36), Exercise (Question: 7, 8 -- Pg. 37)

LESSON 6: THE REWARD
Classwork: Lesson, About the Author, Theme, Reading Notes (Pg. 38-40), Exercise (Question: 1, 3 -- Pg. 41, 42), Exercise (Question: 6, 7 -- Pg. 43)
Homework: Exercise (Question: 1, 2 -- Pg. 41, 42), Exercise (Question: 9 -- Pg. 43)

LESSON 8: THE GULISTAN OF SA’DI
Classwork: Lesson, About the Author, Theme, Reading Notes (Pg. 51-53), Exercise (Question: 1, 3 -- Pg. 53, 55), Exercise (Question: 7, 8 -- Pg. 56)
Homework: Exercise (Question: 1, 2--Pg. 53-54), Exercise (Question:6, 8, 9 -- Pg. 56)

LESSON 10: A MILD ATTACK OF LOCUSTS
Classwork: Lesson, Theme, Reading Notes (Pg. 62-64), Exercise (Question: 1, 3, 5, 6 -- Pg. 64-66), Homework: Exercise (Question: 8 -- Pg. 66)

LESSON 11: I HAVE A DREAM
Classwork: Lesson, About the Author, Theme, Reading Notes (Pg. 67-69), Exercise (Question: 1, 3, 6, 7 -- Pg. 69-72)
Homework: Exercise (Question: 1, 2 -- Pg. 69-70), Exercise (Question: 9 -- Pg. 72)

LESSON 13: GOD BE PraISED
Classwork: Lesson, About the Author, Theme,(Pg.79-85), Exercise( Question: 1 -- Pg.85)
Homework: Exercise (Question: 1-- Pg. 85)

LESSON 14: OVERCOAT
Classwork: Lesson, About the Author, Theme, Reading Notes (Pg. 87-91), Exercise (Question: 1, 2 -- Pg. 91-93)
Homework: Exercise (Question: 3 -- Pg. 93)
ENGLISH BOOK-III

Part-I (Plays)

PLAY 2: VISIT TO A SMALL PLANET
Classwork: Play, About the Author, Theme, Glossary (Pg. 14-27),
Exercise (Question: 1,3 -- Pg. 27-29)
Homework: Exercise (Question: 4 Pg. 29)

PLAY 3: THE OYSTER AND THE PEARL
Classwork: Play, Theme, Glossary (Pg. 31-48),
Exercise (Question: I, II -- Pg. 48-49)
Homework: Exercise (Question: III, IV Pg. 50)

Part-II (Poems)

POEM 1: THE RAIN
Classwork: Poem, About the Poet, Theme, Paraphrase (Pg. 51),
Exercise (Question: 1, 4, 5, 6 -- Pg. 52)
Homework: Exercise (Question: 2, 3 Pg. 52)

POEM 3: LOVELIEST OF TREES, THE CHERRY NOW
Classwork: Poem, About the Poet, Theme, Paraphrase, Glossary (Pg. 56-57),
Exercise (Question: 1, 4, 5, 6, 7 -- Pg. 58)
Homework: Exercise (Question: 2, 3 Pg. 58)

POEM 6: A SINDHI WOMAN
Classwork: Poem, Theme, Paraphrase, Glossary (Pg. 64),
Exercise (Question: 3, 4, 5, 6 -- Pg. 65)
Homework: Exercise (Question: 1, 2, 7, 8 Pg. 65)

POEM 8: OZYMANDIAS
Classwork: Poem, About the Poet, Theme, Paraphrase, Glossary (Pg. 68-69),
Exercise (Question: 5, 6, 7 -- Pg. 70)
Homework: Exercise (Question: 1, 2, 3, 4 Pg. 69-70)

POEM 10: THE HOLLOW MAN
Classwork: Poem, About the Poet, Theme, Paraphrase, Glossary (Pg. 73-74),
Question: 5, 6, 7, 8-- Pg. 75
Homework: Question: 1, 2, 3, 4 Pg. 74-75

POEM 12: RUBA’IYAT
Classwork: Poem, Glossary, Theme (Pg. 78-79), Question: 1,2,3, 4, 5, 6, -- Pg. 79
Homework: Question: 7 Pg. 79

POEM 16: GOD’S ATTRIBUTES
Classwork: Poem, Glossary, Theme (Pg. 86), Question: 1, 2, 3, 4, 5, 6 -- Pg. 86
Homework: Question: 7 Pg. 86
POEM 17: THE DELIGHT SONG
Classwork: Poem, Theme, Glossary (Pg. 87-88),
Exercise (Question: 1, 2, 3, 4, 5, 6 -- Pg. 88)
Homework: Exercise (Question: 7 Pg. 88)

POEM 18: LOVE- AN ESSENCE OF ALL RELIGIONS
Classwork: Poem, Glossary, Theme (Pg. 89), Exercise (Question: 1, 2 -- Pg. 90)
Homework: Exercise (Question: 3, 4 Pg. 90)

POEM 20: IN BROKEN IMAGES
Classwork: Poem, Glossary, Theme (Pg. 93), Exercise (Question: 1, 2, 3, 4 -- Pg. 94)
Homework: Exercise (Question: 5, 6, 7 Pg. 94)

ENGLISH GRAMMAR AND COMPOSITION

LETTERS
1. Letter to your younger brother advising him to pay attention to his studies and avoid bad company.
2. Letter to your father requesting him to increase your monthly allowance.
3. Letter to your friend describing him/her your first impression of college life.
4. Letter to your friend inviting him to attend the marriage of your brother/sister.
5. Letter to your mother/father describing your progress in studies.
7. Letter to your brother/uncle/friend thanking him for sending you a beautiful gift on your birthday.
8. Letter to your friend requesting him/her to lend you some books.
9. Letter to your friend congratulating him/her on his/her success in his examination.
10. Letter to your friend telling him/her about the profession you want to adopt.
11. Letter to your friend, condoling on the death of his/her mother.
12. Letter to your father about your health and studies.

APPLICATIONS
1. Application to the Principal of your college, requesting him/her for full fee concession.
2. Application to the Principal of your college, requesting him/her to grant you sick leave on medical grounds.
3. Application to the Principal of your college, requesting him/her for the issuance/grant of character certificate.
4. Application to the Principal of your college, requesting him/her for remission of fine.
5. Application to the Principal of your college, requesting him/her for re-admission in the college.
6. Application to the Principal of your college, requesting him/her for grant of scholarship/financial help from a special fund.
7. Application to the Principal of your college, requesting him/her for change of subject.
8. Application to the Principal of your college, requesting him/her for refund of library security.

STORIES
1. Honesty is the Best Policy
2. No Pains, No Gains
3. A Foolish Stag
4. The Hen That Laid Golden Eggs
5. The Slave and the Lion
6. A Friend in Need is a Friend Indeed
7. The King and the Spider
8. The Wolf and the Lamb
9. A Stitch in Time Saves Nine
10. Tit for Tat
11. A Rolling Stone Gathers No Moss
12. Grapes are Sour

GENERAL STATEMENT
Teachers will teach the following grammar items in the classroom and will assign the same as homework for the reinforcement:
• Correct use of tenses and verbs
• Punctuation
• Pair of words

NOTE:
• In objective type paper, the question, “choose the right option of the underlined words” should be given from the retained lessons only.
• Explanation of the stanza with reference to the context will be given from the retained poems only.
• Punctuation will be given from the retained lessons of English Book-I.
• The passage to translate into Urdu will be selected from the retained lessons of English Book-I.
• The students whose medium of instruction is English will write an essay on an unseen topic.
دری کتاب کے اسقاب
(الف) حصیرت

1. آسموں صفت (تقادم کیہیں سمجھیاں کیا ایہ کا ایہ کا کیا ایہ کا)

کاسان وک: سوال نمبر 1, 4, 5, 6 (v, iv, ii)

2. لائیک مدرآپ

کاسان وک: سوال نمبر 2, 4, 5.

3. اباداکشم یا یاراگی

کاسان وک: سوال نمبر 1, 3, 4.

4. سفخارش

کاسان وک: سوال نمبر 1, 3, 4.

5. لاپورا جغرافیہ

کاسان وک: سوال نمبر 1, 3, 4.

6. کتوبات اوقیان

کاسان وک: سوال نمبر 1, 3, 4.

7. دوٹیئی کا جگل

کاسان وک: سوال نمبر 1, 3, 4.

8. اوریا گھریم مرجون کا

کاسان وک: سوال نمبر 1, 3, 4.
(ب) حصنقزل

1- سؤال رقم 2: 1.4
   جواب: 7.2
   سؤال رقم 6: 3.1
   جواب: 4.2
   سؤال رقم 3: 6.5
   جواب: 4.4
   سؤال رقم 1: 5.3
   جواب: 1.6
   سؤال رقم 2: 3.1
   جواب: 6.1
   سؤال رقم 4: 2.1
   جواب: 5.3
   سؤال رقم 5: 4.2
   جواب: 1.2
   سؤال رقم 7: 5.1
   جواب: 2.1

(ج) حصنقزل

1- سؤال رقم 1: 3.2
   جواب: 5.4
   سؤال رقم 2: 2.1
   جواب: 3.3
   سؤال رقم 3: 5.2
   جواب: 4.4
   سؤال رقم 4: 4.1
   جواب: 3.4
   سؤال رقم 5: 2.2
   جواب: 5.5
   سؤال رقم 6: 3.3
   جواب: 4.5
   سؤال رقم 7: 2.3
   جواب: 5.6
سوال نمبر 1 (پر.iii.ii) : سوال نمبر 2
سوال نمبر 3 (شمارہ 3 کی تجویز)، سوال نمبر 4 (پنج جوابات کی)

کلاس ورک:
جمع ورک:

سوال نمبر 1 (پر.iii.iii) :
سوال نمبر 2 (پر.iii.ii) : سوال نمبر 4

کلاس ورک:
جمع ورک:

سوال نمبر 1 (پر.iii.1) :
سوال نمبر 2 (پر.iii.6)

کلاس ورک:
جمع ورک:

فیض احمد فیض
گنتوشا کاندی نکاک، دل ریزی دیز گواویا

کلاس ورک:
جمع ورک:

سوال نمبر 1 (پر.iv.iii.ii) :
سوال نمبر 2 (پر.iv.ii.6)

کلاس ورک:
جمع ورک:

سوال نمبر 1 (پر.iv.iii.7)
سوال نمبر 2 (پر.iv.ii.4)

کلاس ورک:
جمع ورک:

قواعدوائی

الف) مکاالگاری

(1) ووودوختن کے دوریان علم کے فاہم ہے کے موضوع پر مکاالگاری
(2) ووودوختن کے دوریان جیڑا کی سانی برائی کے موضوع پر مکاالگاری ہے
(3) ووودوختن کے دوریان فیش کے موضوع پر مکاالگاری ہے
(4) ووودوختن کے دوریان انتہائی کے موضوع پر مکاالگاری ہے
(5) ووودوختن کے دوریان ملکی طرف بیانی جو بیانی بھی رازگا ہری کے موضوع پر مکاالگاری ہے.
(vi) ووڈروئن کے درمیان ایک جڑا احساس کے موضوع پر مکمل کر کے یکی رکھیں۔
(vii) ووڈروئن کے درمیان ایک جڑا احساس کے موضوع پر مکمل کر کے یکی رکھیں۔
(viii) ووڈروئن کے درمیان ایک جڑا احساس کے موضوع پر مکمل کر کے یکی رکھیں۔
(ix) ووڈروئن کے درمیان ایک جڑا احساس کے موضوع پر مکمل کر کے یکی رکھیں۔
(x) ووڈروئن کے درمیان ایک جڑا احساس کے موضوع پر مکمل کر کے یکی رکھیں۔

(ب) رپورٹ

(i) بیر (میاک ہوائی پلیٹفورم اور پلیٹفورم کے ذریعہ اخبارات) کی تقریبی کی رپورٹ کیم بند کی گئی۔
(ii) کی تقریبی میکمیک کی برکی رپورٹ کی رپورٹ کی گئی۔
(iii) کا بھی بننے دی سال سال جشن ہیں کی تقریبی کی رپورٹ کی رپورٹ کی رپورٹ کی گئی۔
(iv) اپنے کا بھی بننے دی اقدامات کے خواہا سے سے بننے دی اقدامات کی تقریبی کی رپورٹ کی رپورٹ کی گئی۔
(v) کی نام کا تخمینہ استعمال پہنچے دی اقدامات کی تقریبی کی رپورٹ کی رپورٹ کی گئی۔
(vi) کی اور دو میں اقدامات کی تقریبی کی رپورٹ کی رپورٹ کی گئی۔
(vii) کی کچھ کا تخمینہ رپورٹ کی رپورٹ کی گئی۔
(viii) اپنے کا بھی بننے دی اقدامات کی رپورٹ کی رپورٹ کی گئی۔
(ix) کا بھی بننے دی اقدامات کی رپورٹ کی رپورٹ کی گئی۔
(x) کی دووی کی تقریبی کی رپورٹ کی رپورٹ کی گئی۔

(ج) درخواست

(i) پیشکش کے نام کے بیان میں مذکور کی خصوصی کے رپورٹ کے لیے رپورٹ کے تخمینہ کریں۔
(ii) ذیلی مشرک کے نام اپنے مالک کے ذریعہ میں پاک کے ذریعہ میں رپورٹ کے تخمینہ کریں۔
(iii) کا بھی بننے دی اقدامات کے ذریعہ میں رپورٹ کے تخمینہ کریں۔
(iv) کا بھی بننے دی اقدامات کے ذریعہ میں رپورٹ کے تخمینہ کریں۔
(v) پیشکش کے نام اپنے مالک کے ذریعہ میں رپورٹ کے تخمینہ کریں۔
(vi) پیشکش کے نام اپنے مالک کے ذریعہ میں رپورٹ کے تخمینہ کریں۔
اسلامائیات الازیم 11

باب اول: نیادی عقائد

(i) توضیح (عقیدتا معمولی و غیر معمولی، جدید تاریخی، الازیم الازیم، حکم کارکرد) (صفحہ 41)

کلاس وک: تدریسی سئل، سوالات 1، 3 (صفحہ 19)

بوم وک: سوالات 6 (صفحہ 19)

(ii) رسالات (رسالات کی جماعت و بہتی، رسالہ محدود شیعی اللہ تعالیٰ کی علیہ، آنحضریۂ سلطان) (صفحہ 8:7-13)

کلاس وک: تدریسی سئل، سوالات 7 (صفحہ 19)

بوم وک: سوالات 13 (صفحہ 19)

(iii) ملاکا اورا سالمی: کتابیں (صفحہ 13)

کلاس وک: تدریسی سئل، سوالات 5 (افہم بپ) (صفحہ 19)
باب دوم: اسلام

(الف) دین اسلام (کلیات شیعہ، مذاہب) (صفر 20، 33)

(ب) جامع خیبری (صفر 48)

(ج) جامع خیبری (صفر 48)

باب دوم: اسلام

(الف) دین اسلام (کلیات شیعہ، مذاہب) (صفر 20، 33)

(ب) جامع خیبری (صفر 48)

(ج) جامع خیبری (صفر 48)

باب دوم: اسلام

(الف) دین اسلام (کلیات شیعہ، مذاہب) (صفر 20، 33)

(ب) جامع خیبری (صفر 48)

(ج) جامع خیبری (صفر 48)

باب دوم: اسلام

(الف) دین اسلام (کلیات شیعہ، مذاہب) (صفر 20، 33)

(ب) جامع خیبری (صفر 48)

(ج) جامع خیبری (صفر 48)
باب: تغذية القرآن وحديث

(i) تغذية القرآن (ثرأ أن يجاوز ثرآ أن يجاوز الحداثة، ثرآ أن يجاوز الحداثة) بتعتيب عبد القديم يزيد من ثرآ أن يجاوز الحداثة (صفر 54:55)

(صفر 61:61)

 Vaderi ساق: سوال رقم 6 (صفر 59)

جواب ورد:

(ii) تغذية حديث (حديث بعد ويصلى، ويصلى ويصلى، ويصلى ويصلى، ويصلى ويصلى، ويصلى ويصلى) (صفر 61:74)

Vaderi ساق: سوال رقم 7 (صفر 74)

جواب ورد:

(iii) فتح آيات: (آيات 5:3، 8، 12:7، 7:4، 7:3، 12:8) (صفر 69:7)

آيات تعدد:

آية تعدد: 3:2

Vaderi ساق: سوال رقم 12 (صفر 68)

جواب ورد:

آية تعدد: 4:7

Vaderi ساق: سوال رقم 14 (صفر 68)

جواب ورد:

آية تعدد: 8:12

Vaderi ساق: سوال رقم 20 (صفر 68)

جواب ورد:

(ب) حدثت تعدد (حديث في: 4:2، 5:8، 10، 11:11) (صفر 72:53)

آية تعدد: 4:2
CHAPTER 1: MEASUREMENTS
Precision and Accuracy (Pg. 10,11), Assessment of Total Uncertainty in the Final Result (Pg. 11-14), Dimensions of Physical Quantities (Pg. 16,17), Examples: 1.2, 1.3, 1.4, 1.6 (Pg. 15, 16, 17, 18, 19)
Classwork: Questions: 1.4, 1.7,1.8 (Pg. 20), Numerical Problems: 1.4, 1.5,1.7 (Pg. 21)
Homework: Questions: 1.9 (Pg. 20), Numerical Problems: 1.6, 1.9 (Pg.21)

CHAPTER 2: VECTORS AND EQUILIBRIUM
Basic Concepts of Vectors (i-ix, xii) (Pg. 22-25, 27), Vector Addition by Rectangular Components (Pg. 28-30), Product of Two Vectors (Pg. 31-36), Torque (Pg. 36,37), Examples: 2.2, 2.3, 2.5, 2.6 (Pg. 30, 31, 34, 38)
Classwork: Questions: 2.2, 2.10, 2.12, 2.13, 2.15, 12.17 (Pg. 43,44), Problems: 2.1,2.6,2.9,2.11 (Pg. 45,46)
Homework: Questions: 2.1, 2.9, 2.16 (Pg. 43, 44), Problems: 2.3, 2.5, 2.10, 2.14 (Pg. 45,46)

CHAPTER 3: MOTION AND FORCE
Review of Equations of Uniformly Accelerated Motion (Pg. 54), Impulse, Law of Conservation of Momentum (Pg. 57-59), Elastic and Inelastic Collision (Pg. 60-62), Force Due to Water Flow (Pg. 63,64), Momentum and Explosive Forces (Pg. 64,65), Rocket Propulsion (Pg. 65,66), Projectile Motion (Pg. 66-69), Examples: 3.2, 3.3, 3.5, 3.6, 3.7 (Pg. 57, 59, 63, 64, 70)
Classwork: Questions: 3.10, 3.11, 3.13 (Pg. 73), Problems: 3.3, 3.6, 3.7, 3.9, 3.10, 3.13, 14 (Pg. 75, 76)
Homework: Questions: 3.9, 3.12 (Pg. 73), Problems: 3.8, 3.11 (Pg. 75,76)

CHAPTER 4: WORK AND ENERGY
Work Done by a Constant Force (Pg. 77,78), Work Done by a Variable Force (Pg. 78-80),
Work Done by Gravitational Field (Pg. 80-82), Power (Pg. 82,83), Energy (Pg. 83-89), Interconversion of Potential Energy and Kinetic Energy (Pg. 89,90), Conservation of Energy (Pg. 91), Examples: 4.1, 4.2, 4.3 (Pg. 80, 83, 91)

**Classwork:** Questions:4.1,4.4,4.5,4.9 (Pg. 97), Numerical Problems: 4.2 – 4.6(Pg.97,98)

**Homework:** Questions: 4.2,4.7 (Pg. 97), Numerical Problems: 4.1, 4.2, 4.7,4.8(Pg.97,98)

**CHAPTER 5: CIRCULAR MOTION**

Angular Displacement (Pg. 100,101), Angular Velocity (Pg. 101,102), Angular Acceleration (Pg. 102,103), Relation between Angular and Linear Velocities (Pg. 103,104), Centripetal Force (Pg. 105-107), Moment of Inertia (Pg. 108-110), Angular Momentum (Pg. 110-111), Law of Conservation of Angular Momentum (Pg. 112,113), Rotational Kinetic Energy (Pg. 113-115), Real and Apparent Weight (Pg. 116-118), Orbital Velocity (Pg. 119), Example: 5.1, 5.2,5.5,5.6 (Pg. 104, 105, 107, 115, 119)

**Classwork:** Questions: 5.2, 5.7,5.9, 5.10 (Pg. 125), Numerical Problems: 5.1, 5.3, 5.5, 5.7 (Pg. 126)

**Homework:** Questions: 5.1, 5.3, 5.4, 5.5, 5.11 (Pg. 125), Numerical Problems: 5.2,5.6 (Pg. 126)

**CHAPTER 6: FLUID DYNAMICS**

Viscous Drag and Stokes’ Law (Pg. 128), Terminal Velocity (Pg. 128,129), Fluid Flow (Pg. 130), Equation of Continuity (Pg. 130,131), Bernoulli’s Equation (Pg. 132,134), Applications of Bernoulli’s Equation (Pg. 134-136), Examples: 6.1, 6.2, 6.3 (Pg. 129, 131, 136)

**Classwork:** Questions: 6.3, 6.8, 6.9, 6.10 (Pg. 139), Numerical Problems: 6.2, 6.4, 6.5, 6.7 (Pg. 139,140)

**Homework:** Questions: 6.1, 6.2, 6.4 (Pg. 139), Numerical Problems: 6.1, 6.9 (Pg.139,140)

**CHAPTER 7: OSCILLATIONS**

SHM and Uniform Circular Motion (Pg. 144-147), Phase (Pg. 147-149), A Horizontal Mass Spring System (Pg. 149,150), Simple Pendulum (Pg. 150,151), Energy Conservation in SHM (Pg. 152-154), Free and Forced Oscillations (Pg. 154,155), Resonance (Pg. 155,156), Examples: 7.1, 7.2, 7.3 (Pg. 150-152, 154)

**Classwork:** Questions: 7.4, 7.5, 7.6, 7.7, 7.8 (Pg. 159), Numerical Problems: 7.1, 7.2, 7.4(Pg. 159,160)

**Homework:** Questions: 7.11, 7.12, 7.13 (Pg. 159), Numerical Problem: 7.5 (Pg. 160)

**CHAPTER 8: WAVES**

Periodic Waves (Pg. 164-167), Speed of Sound in Air (Pg. 167-171), Beats (Pg. 175,176), Stationary Waves (Pg. 178,179), Stationary Waves in a Stretched String (179-181), Stationary Waves in Air Columns (Pg. 182-184), Examples: 8.1, 8.2, 8.3, 8.4 (Pg. 171, 172, 176, 182, 184)

**Classwork:** Questions: 8.3, 8.6, 8.7 (Pg. 190), Numerical Problems: 8.1, 8.4, 8.5, 8.7 (Pg. 191,192)
**Homework:** Questions: 8.10 (Pg. 190), Numerical Problems: 8.3, 8.6 (Pg. 191,192)

**CHAPTER 9: PHYSICAL OPTICS**
Wavefronts (Pg. 194,195), Huygen’s Principle (Pg. 195), Interference of Light Waves (Pg. 195,196), Young’s Double Slit Experiment (Pg.196-199), Newton’s Rings (Pg. 201,202), Michelson’s Interferometer (Pg. 202, 203), Diffraction of Light (Pg. 203, 204), Diffraction due to a Narrow Slit (Pg. 204,205), Diffraction Gratings (Pg. 205,206), Diffraction of X-Rays by Crystals (Pg. 206,207), Examples: 9.1, 9.2 (Pg. 200)

**Classwork:** Questions: 9.2, 9.4, 9.7 (Pg. 211, 212), Numerical Problems: 9.2, 9.4, 9.5, 9.7 (Pg. 213)

**Homework:** Questions: 9.1, 9.3, 9.5, 9.9 (Pg. 211, 212), Numerical Problems 9.3, 9.6 (Pg. 213)

**CHAPTER 10: OPTICAL INSTRUMENTS**
Least Distance of Distinct Vision (Pg. 214, 215), Magnifying Power and Resolving Power of Optical Instruments (Pg. 215, 216), Simple Microscope (Pg. 217, 218), Compound Microscope (Pg. 218, 219), Astronomical Telescope (Pg. 220-222), Spectroscope (Pg. 222, 223), Speed of Light (Pg. 224, 225), Introduction to Fibre Optics (Pg. 225, 226), Fibre Optics Principles (Pg. 226-228), Examples: 101,10.2 (Pg. 220, 230)

**Classwork:** Questions: 10.3, 10.4, 10.6 (Pg. 233,234), Numerical Problems: 10.1, 10.2, 10.4, 10.6, 10.9 (Pg. 234, 235)

**Homework:** Questions: 10.1, 10.2(Pg. 233), Numerical Problems: 10.3, 10.8 (Pg. 235)

**CHAPTER 11: HEAT AND THERMODYNAMICS**
Kinetic Theory of Gases (Pg. 237-243), Internal Energy (Pg. 244,245), Work and Heat (Pg. 245,246), First Law of Thermodynamics (Pg. 246-249), Molar Specific Heat of a Gas (Pg. 249, 250), Reversible and Irreversible Processes (Pg. 250, 251), Second Law of Thermodynamics (Pg. 252, 253), Carnot Engine and Carnot’s Theorem (Pg. 253-255), Examples: 11.1, 11.2, 11.3, 11.4 (Pg. 243, 244,247, 255,256)

**Classwork:** Questions: 11.2, 11.5, 11.8, 11.11 (Pg. 261, 262, 263), Numerical Problems: 11.1, 11.2, 11.3, 11.5, 11.7 (Pg. 263, 264)

**Homework:** Questions: 11.1, 11.6, 11.7 (Pg. 261, 262), Numerical Problems: 11.4, 11.8, 11.11 (Pg. 264)

**EXPERIMENTS**
1. Find the unknown weight of a body by the method of vector addition of forces.
2. Find the area of cross section of a wire and volume of a small sphere using micrometer screw guage.
3. Find the acceleration due to gravity by oscillating mass spring system.
4. (i) Study the law of conservation of momentum by colliding trolleys and ticker timer for inelastic collision.
   (ii) Study the law of conservation of momentum by colliding trolleys and ticker timer for elastic collision.
5. Study the fall of a body through a viscous medium and hence deduce the co-efficient of viscosity of the medium.
6. Determine Young’s modulus of a wire by Searle’s apparatus.
7. Find the moment of inertia of flywheel.
8. (i) Determine frequency of A.C. by Melde’s apparatus.
     (ii) Determine frequency of A.C. by using electric sonometer.
9. Investigate the law of vibration of stretched strings by sonometer.
10. Determine the wavelength of sound in air using stationary waves and calculate the speed of sound.
11. Determine the focal length of a convex lens by displacement method.
12. Find the refractive index of the material of a prism using spectrometer.

---

**CHEMISTRY-11**

**CHAPTER 1: BASIC CONCEPTS**

**TOPIC:** (1.3(1.3.1, 1.3.3), 1.5, 1.6, 1.7, 1.8)  
Isotopes (Relative Abundance of Isotopes (Pg.3-4), Average Atomic Mass(Pg. 6-6), Concept of Mole, Stoichiometry, Limiting Reactant, Yield (Pg. 11-22)  
**Classwork:** Q.1 (i, ii, iii, v, x), 2Q.(i, ii, iii, v, vii, viii), Q.3 (i, v, vii, viii) Q.9 to Q.18, Q.20, Q.21, Q.22, Q.25  
**Homework:** Q.5 (a, b), Q.6, Q.7, Q.8 (vi, vii, viii)

**CHAPTER 2: EXPERIMENTAL TECHNIQUES IN CHEMISTRY**

**TOPIC:** (2.3, 2.4, 2.5)  
Solvent Extraction, Chromatography (Pg. 34 to 37).  
**Classwork:** Q.1 (iii, iv, v) Q.2 (1, 4, 5) Q.3 (iv, v) Q.7  
**Homework:** Q.6, Q.8, Q.9, Q.10

**CHAPTER 3: GASES**

**TOPIC:** (3.2, 3.3, 3.4, 3.5, 3.7, 3.8, 3.11)  
Gas Laws, Dalton’s Law of Partial Pressure (Pg. 41 - 57). Kinetic Molecular Theory of Gases, Kinetic Interpretation of Temperature (Pg. 60 - 65). Plasma State (Pg. 73 - 75).  
**Classwork:** Q.1 (i, ii, iii, iv, v, vii, viii), Q.2 (i, ii, iii, v)Q.3(i, ii), Q.8,9, 16,17, 18, 19, 20, 22, 23  
**Homework:** Q.4, Q.5, Q.6, Q.7, Q.10, Q.12.

**CHAPTER 4: LIQUIDS AND SOLIDS**

**TOPIC:** (4.1, 4.3, 4.4, 4.5, 4.6)  
Intermolecular Forces (Pg. 81 - 88). Crystal lattice, Crystals and Their Classification (Pg. 95 - 101).

QUESTIONS ON LIQUIDS
Classwork: Q.1 (i, ii, iii, iv), Q.2 (i, ii, iii, iv, v, vi, viii), Q.3 (i, ii, iii, iv, v, vi, ix), Q.4, Q.5, Q.6, Q.7, Q.8.

Homework: Q.12.

QUESTIONS ON SOLIDS
Classwork: Q.1 (ii, iii, iv) Q.2, Q.12(vi, vii, viii, ix, x, xi)

CHAPTER NO 5: ATOMIC STRUCTURE
TOPIC: (5.1, 5.2, 5.3, 5.4, 5.5, 5.7, 5.8)
Sub-Atomic Particles of Atoms, Rutherford’s Model of Atom (Discovery of Nucleus),
Plank’s Quantum Theory, Bohr’s Model of Atom, Spectrum (Pg. 118-137).
Wave-Particle Nature of Matter (Dual Nature of Matter), Heisenberg’s Uncertainty
Prince, (Pg. 138-146).
Classwork: Q.1 (i, ii, iii, iv, v, vii, viii, ix, x, xi), Q.2 (i to viii), Q.3, Q.4, Q.17, Q.19,
Q.23, Q.24, Q.25
Homework: Q.5, Q.6, Q.7, Q.8, Q.9, Q.10, Q.11, Q.14, Q.15, Q.16.

CHAPTER NO 6: CHEMICAL BONDING
TOPIC: (6.1, 6.2, 6.3, 6.4)
Chemical Bond, Atomic Sizes, Ionization Energy, Electron Affinity and Electronegativity,
Types of Bonds (Pg. 155-182).
Classwork: Q.1 (i, ii, iii, v, vi ), Q.2 (i, ii, iii, iv, v), Q.3 (i, ii, iii, iv, v, vii, viii, ix, x, xi,
xii), Q.6, Q.10, Q.18 (ii, vi).
Homework: Q.4, Q.5, Q.7, Q.8, Q.9, Q.11, Q.12.

CHAPTER NO: 7 THERMOCHEMISTRY
TOPIC: (7.2, 7.3, 7.4, 7.5)
System, Surrounding And State function, Internal Energy and First Law of Thermody-
Classwork: Q.1, Q.2 (i, ii, iii, v), Q.3(ii, iii, iv, v), Q.13, Q.14, Q.15, Q.16, Q.17, Q.18,
Q.19, Q.20, Q.21.
Homework: Q.4, Q.5, Q.7, Q.8, Q.9, Q.10, Q.11, Q.12.

CHAPTER NO: 8 CHEMICAL EQUILIBRIUM
TOPIC: (8.1, 8.2, 8.3, 8.4, 8.5, 8.7, 8.8)
Reversible and Irreversible Reactions, Application of Chemical Equilibrium In Industry,
Ionic Product of water, Ionization Constants of Acids (Ka), Ionization Constant of Bases
Classwork: Q.1 (i, ii, iii, v), Q.2, Q.3 (i, ii, iii, iv), Q.10(a, b), Q.11, Q.19, Q.20, Q.21,
Q.22, Q.23.
Homework: Q.6, Q.7, Q.8, Q.17.

CHAPTER NO: 9 SOLUTION
TOPIC: (9.3, 9.5, 9.6, 9.7)
Ideal and Non- Ideal Solutions (Pg. 260-262). Solubility and Solubility Curves,
Colligative Properties of Solutions, Energetics of Solution (265-277).

**Classwork:** Q.1(ii, v, vi, vii, viii, ix, x), Q.2 (ii, iii, iv, v, vi, vii, viii, ix, x), Q.3(iii, iv, v, vi, vii, viii), Q.4, Q.5, Q.12, Q.12, Q.21, Q.22, Q.23.

**Homework:** Q.7, Q.8, Q.9, Q.10, Q.11, Q.13, Q.14, Q.15, Q.16.

**CHAPTER NO: **10 **ELECTROCHEMISTRY**

**TOPIC:** (10.1(10.1.1, 10.1.2), 10.2, 10.3, 10.4)

Definition of Electrochemistry, Oxidation State and Balancing of Redox Equations (Oxidation Number or State, Finding Oxidation Number of an Element in a compound or a Radical) (Pg. 284-285), Electrolytic Conduction, Electrode Potential, Electrochemical Series (Pg. 289-300).

**Classwork:** Q.1, Q.2(i, ii, iii, iv, vi), Q.3 (i, ii, iii, iv, v, vi, vii, viii), Q.4, Q.15, Q.16 (b, d, e, g, h).

**Homework:** Q.7, Q.8, Q.9, Q.10, Q.11, Q.12, Q.13, Q.14 (a, b).

**CHAPTER NO: **11 **REACTION KINETICS**

**TOPIC:** 11.1, 11.3, 11.4, 11.5(11.5.6).

Rate of Reaction (308-313), Energy of Activation, Finding of Order of Reaction (Pg. 316-319). Arrhenius Equation (Pg. 322-324).

**Classwork:** Q.1, 2, Q.3(i, ii, iv, v), Q.8, Q.19, Q.20, Q.21, Q.22.

**Homework:** Q.4, Q.5, Q.6, Q.7 (i, iii, iv), Q.9, Q.15.

**LIST OF EXPERIMENTS (CHEMISTRY) PART- I**

1. Crystallization of benzoic acid from water.
2. To separate a mixture of various inks by paper chromatography.
3. Separation and Identification of lead and cadmium ions in a mixture solution by paper chromatography.
4. Determination of heat of neutralization of NaOH and HCl.
5. Preparation of standard solution of alkalies and acids e.g., NaOH, KOH, Oxalic acid, succinic acids.
6. Preparation of solution of H₂SO₄ of approximate strength and then determination of its exact strength with the help of standard Na₂CO₃ solution.
7. To prepare a standard solution of oxalic acid and standardize a solution of NaOH.
8. To determine the solubility of oxalic acid at room temperature. You are provided with 0.1 M NaOH.
9. Determination of acetic acid in vinegar.
10. The given solution contains 15 g of mixture of NaOH and Na₂SO₄ per dm³. Calculate the amount of NaOH in 45 grams of the mixture. 0.1 M HCl is given.
11. Determination of free alkali in soap.
12. Determination of Na₂CO₃ in washing soda.
13. Determination of percentage of purity of Na₂CO₃ in the given solution containing 10 g. of impure Na₂CO₃ sample/dm³. You are provide with 0.1 M HCl solution.
28.6 grams of washing soda (Na₂CO₃·xH₂O) have been dissolved/dm³. Calculate the number of water molecules of crystallization. You are provided with 0.1 M HCl solution.

Determination of NaHCO₃ in the given sample of baking soda. 0.1M HCl soln. is provided.

8.4 gram M HCO₃ are dissolved per dm³ of solution. Find out At. Wt. of M. 0.05 M H₂SO₄ is given.

You are given the solution of KMnO₄. Calculate its volume required to prepare 1.0 dm³ of 0.002M KMnO₄ solution.

The given soln. ‘A’ contains 10 grams of a mixture of H₂SO₄ and oxalic acid dissolved/dm³. Determine the percentage of H₂SO₄ in the mixture. 0.02M KMnO₄ is given.

Determine the no of molecules of water of crystallization in a given sample of oxalic acid by permanganate titration. The amount of oxalic acid dissolved per dm³ is 6.3 g.

Determination of solubility of oxalic acid at room temperature.

To determine the strength of ferrous sulphate solution by titrating it against 0.02M KMnO₄.

The given solution contains 30 gram of partially oxidized FeSO₄·7H₂O dissolved per dm³. Determine the %age of oxidation of the given sample.

To determine the strength of given ferrous ammonium sulphate (Mohr’s salt) by titrating it against standard potassium permanganate solution.

The given solution contains 40g. of FeSO₄(NH₄)₂SO₄·xH₂O dissolved per dm³. Determine the value of x.

Determine the solubility of given sample of Mohr’s salt at room temperature. You are provided with 0.02M KMnO₄.

Prepare a standard (M/10) 250 cm³. Solution of iodine. 0.1 M Na₂S₂O₃ is provided.

24.8 grams of a sample of alkali thiosulphate (M₂S₂O₃) are dissolved in 1 dm³ of the given solution. Calculate the atomic weight of the metal by a volumetric method. Given M/10 iodine solution.

20 gram of Na₂S₂O₃ are dissolved in one dm³ solution. Find out the %age of sulphur. You are provided with 0.05M iodine solution.
CHAPTER 1: NUMBER SYSTEMS
Classwork: Example 6: (pg.10), Exercise 1.1: Q.1(iii), Q.2(i,vi,x), Q.4(i), Example 1:(pg.15), Exercise 1.2: Q.4(iv), Q.5(i), Q.9,12, Q.14(ii), Q.15(ii), Q.16(i), Example 1: (i)(pg.20), Theorems(iii,iv,vi) (pg.21), Example 2: (pg.24), Example 3: (pg.24 & 25), Exercise 1.3: Q.2(iii), Q.4, Q.5(iii), Q.6(ii), Q.7(i)
Homework: Exercise 1.1: Q.1(iv), Q.2(vii,ix,xi,xxi), Q.4(i), Q.5, Exercise 1.2: Q.4(i,iii), Q.5(iii), Q.8,11, Q.14(i), Q.15(i,iii), Q.16(ii), Example 5: (i)(pg.27), Exercise 1.3: Q.2(ii,iv), Q.5 (ii,iv), Q.6(i)

CHAPTER 2: SETS, FUNCTIONS AND GROUPS
Classwork: Example 4: (pg.33), Exercise 2.1: Q.1(iii), Q.2(i,v), Q.4(viii), Q.8(vi), Q.9(ii), Q.10(i), Exercise 2.2: Q.1(iii), Q.2(i), Q.4(iii,vi), Q.5(ii), Q.6(i), Exercise 2.3: Q.1(i), Q.3, Q.6(ii) Q.7(i), Example 4: (pg.53), Exercise 2.4: Q.1(i), Q.2(i), Q.3(i,ii), Q.7(i) Q.9(i), Exercise 2.5: Q.1, Exercise 2.6: Q.1(iii) Q.4(ii), Example 5: (pg.65),Example 6: (pg.66), Exercise 2.7: Q.3, Exercise 2.8: (pg.71), Solution of Linear Equations(pg.76), Reversal Law of Inverses(pg.77), Exercise 2.8: Q.5
Homework: Exercise 2.1: Q.1(xi), Q.2(vi,ix,xi,xvi), Q.4(i,ii), Q.8(ii), Q.9(iv), Q.10(vi,vi), Exercise 2.2: Q.1(iv,v), Q.2(ii), Q.4(ii,vi), Q.5(iii,iv), Q.6(ii), Exercise 2.3: Q.6(iii), Q.8, Q.7(ii), Exercise 2.4: Q.1(iii), Q.2(ii), Q.3(iv), Q.4(ii,iii), Exercise 2.5: Q.4, Exercise 2.6: Q.1(ii,iv), Q.4(iv,v), Exercise 2.7: Q.4,
Example 7: (pg.72), Exercise 2.8: Q.6

CHAPTER 3: MATRICES AND DETERMINANTS
Classwork: Adjoint of a 2×2 Matrix(pg.90), Example 4: (pg.92), Example 5: (pg.94), Exercise 3.1: Q.2, Q.3(i), Q.5,8, Q.12(ii), Exercise 3.2: Q.3(ii), Q.5(i), Q.6(iii), Q.8(ii), Example 2: (pg.104), Example 7: (pg.110), Exercise 3.3: Q.2(iii), Q.3(iii,xi), Q.5(v), Q.8,11, Example 3: (pg.125), Exercise 3.4: Q.6(i), Q.8, Q.10(iii), Example 3: (pg.137), Exercise 3.5: Q.1(i), Q.3(ii)
Homework: Exercise 3.1: Q.3(ii), Q.9, Q.12(i), Exercise 3.2: Q.2(ii), Q.4(iv), Q.7(i), Q.9(ii), Exercise 3.3: Q.1(i), Q.2(i,ii), Q.3(ii,iv), Q.4(ii), Q.5(i,iii), Q.6(i,iii), Q.14(i), Q.16, Exercise 3.4: Q.2(ii), Q.5, Q.10(ii), Q.8,11, Exercise 3.5: Q.1(iii), Q.2(ii), Q.4(ii), Q.5(ii), Q.6

CHAPTER 4: QUADRATIC EQUATIONS
Classwork: Exercise 4.1: Q.3,8,9,19, Example 1: (pg.143), Exercise 4.2: Q.1,5,10,19, Exercise 4.3: Q.2,5,11, Three Cube Roots of Unity(pg.151), Properties of Cube Roots of Unity(ii)(pg.152), Four Fourth Roots of Unity (pg.154), Exercise 4.4: Q.2(iii), Q.3(i), Q.5, Example 2: (pg.157), Example 4: (pg.158), Exercise 4.5: Q.1,7,11,
Exercise 4.6: Q.1(vi), Q.3(iv), Q.6, Q.7(v), Example 1: (ii)(pg.165),
Exercise 4.7: Q.1(iv), Q.2(i), Exercise 4.8: Q.1,6,9, Exercise 4.9: Q.2,8, Exercise 4.10: Q.2,5

**Homework:** Exercise 4.1: Q.2,5,6,10,12,15,17,18, Exercise 4.2: Q.4,11,14,17,18,22,24, Exercise 4.3: Q.4,6,10, Exercise 4.4: Q.2(i,v), Q.4,6,7, Q.8(i,iii), Exercise 4.5: Q.10,12,14,15,16, Exercise 4.6: Q.1(i,ii), Q.2, Q.3(i), Q.7(i,vi), Q.8, Exercise 4.7: Q.1(ii,iii), Q.3(i), Q.5,7, Exercise 4.8: Q.4,7,10, Exercise 4.9: Q.3,5,10, Exercise 4.10: Q.4,6

**CHAPTER 5: PARTIAL FRACTIONS**

**Classwork:** Example 1: (pg.180), Exercise 5.1: Q.5, Example 1: (pg.184), Example 2: (pg.184), Exercise 5.2: Q.4,9, Example 1: (pg.186), Exercise 5.3: Q.1,10, Example 1: (pg.188)

**Homework:** Exercise 5.1: Q. 4,7,10, Exercise 5.2: Q.6,11, Exercise 5.3: Q.3,6,8

**CHAPTER 6: SEQUENCES AND SERIES**

**Classwork:** Example 2: (pg.190), Exercise 6.1: Q.1(iii,viii), Q.2(v), Example 3: (pg.193), Example 4: (pg.194), Exercise 6.2: Q.2,6,13, Example 1: (pg.195), Exercise 6.3: Q.1(ii), Q.6, Exercise 6.4: Q.2(ii), Q.6, Exercise 6.6: Q.2, Q.7(ii), Q.8,12, Exercise 6.7: Q.1(ii), Q.2(i), Example 3-6: (pg.213 & 214), Exercise 6.8: Q.1, Q.5(iii), Q.6(ii), Q.13, Example 1: (pg.219), Relations Between Arithmetic, Geometric and Harmonic Means(pg.222), Exercise 6.10: Q.1(ii), Q.6,9,16

**Homework:** Exercise 6.1: Q.1(ii,v,vi,vii), Q.2(i), Q.3(ii,iv), Exercise 6.2: Q.4,7,8,9,12, Exercise 6.3: Q.3,4,7, Exercise 6.4: Q.2(iii,v), Q.3(i), Q.4(ii), Q.11,14,15,16, Exercise 6.6: Q.1,3,9,14, Exercise 6.7: Q.1(i), Q.2(ii), Q.3(i), Q.4,6, Exercise 6.8: Q.4, Q.5(ii), Q.6(i,iv), Q.8,9 Q.12(i), Q.14, Exercise 6.10: Q.1(i), Q.2(ii), Q.7,8,12,13, Q.14(i), Q.15(i), Q.17

**CHAPTER 7: PERMUTATION, COMBINATION AND PROBABILITY**

**Classwork:** Example 2 & 3: (pg.230), Exercise 7.1: Q.1(vii,x), Q.2(vi,ix), Exercise 7.2: Q.1(v), Q.2(ii), Q.7, Example 3: (pg.238), Exercise 7.3: Q.1(ii), Q.4,12, Complementary Combination (pg.240), Exercise 1-3: (pg.241), Exercise 7.4: Q.1(ii), Q.2(i), Q.9(i), Example 1 & 2: (pg.244 & 245), Exercise 7.5: Q.3(iii), Q.5(i), Q.10(i), Exercise 7.6: Q.3,6, Exercise 7.8: Q.3,8

**Homework:** Exercise 7.1: Q.1(vi,ix), Q.2(v,viii,x), Exercise 7.2: Q.1(i,iii), Q.2(i,iii), Q.3,4,6,10,11, Exercise 7.3: Q.1(iii), Q.3,11, Exercise 7.4: Q.1(i,iii), Q.2(ii,iii), Q.3(i), Q.4,10, Exercise 7.5: Q.3(i), Q.5(ii), Q.10(ii), Exercise 7.7: Q.2,5, Exercise 7.8: Q.4,9

**CHAPTER 8: MATHEMATICAL INDUCTION AND BINOMIAL THEOREM**

**Classwork:** Example 6: (pg.262), Exercise 8.1: Q.2,4,13,20, Example 2: (pg.269), Exercise 5: (pg.272), Exercise 8.2: Q.1(i), Q.2(ii), Q.7(i), Example 2: (pg.276), Example 4: (pg.278), Exercise 8.3: Q.1(ii,vi,viii), Q.2(vi,ix), Q.4(iv,vi), Q.9

**Homework:** Exercise 8.1: Q.1,3,5,7,14,24, Exercise 8.2: Q.1(ii,vi), Q.2(i,iii), Q.6(i), Q.9(i), Q.10(i,ii), Exercise 8.3: Q.1(i,iii,iv,v), Q.2(i,iii), Q.3(i,ii), Q.4(i,ii), Q.5,7,11,12,13

**CHAPTER 9: FUNDAMENTALS OF TRIGONOMETRY**

**Classwork:** Example 4 & 5: (pg.290), Exercise 9.1: Q.1(vi,xvi), Q.2(viii), Q.5(i), Q.13,
Fundamentals Identities (pg.297), Exercise 9.2: Q.3(iv,v), Q.4(ii), Q.8, Exercise 9.3: Q.1(ii,iii), Q.2(ii), Q.3(iii), Example 1-4: (pg.3,10&11), Exercise 9.4: Q.2,4,8,11,14,21

**Homework:** Exercise 9.1: Q.1(ix,xii,xiii), Q.2(ii,vi,x,xii,xv), Q.3, Q.4(i), Q.5(ii), Q.6(i), Q.7,11,15, Exercise 9.2: Q.3(i,vi), Q.4(i,v), Q.5,6, Exercise 9.3: Q.1(i,iv), Q.2(i), Q.3(i,ii), Q.4, Q.5(iv,vii), Q.6(v,ix), Exercise 9.4: Q.5,6,7,9,10,12, 13,15,20

**CHAPTER 10: TRIGONOMETRIC IDENTITIES**

**Classwork:** Example 2: (pg.320), Exercise 10.1: Q.1(ii), Q.2(v), Q.3(iii), Q.4(i), Exercise 10.2: Q.1(iii,vi), Q.3(ii), Q.7(ii), Q.11, Example 1: (pg.330), Exercise 10.3: Q.1(ii), Q.3,13, Example 2: (pg.334), Example 3 & 5: (pg.335), Exercise 10.4: Q.1(ii,vi), Q.2(ii), Q.3(iii)

**Homework:** Exercise 10.1: Q.1(vi), Q.2(iii,ix), Q.3(i,ii,iv), Q.5(i,iii,iv), Exercise 10.2: Q.1(i,vi), Q.2(iv,v), Q.4(i,iii,v), Q.5, Q.7(i), Q.10(i), Exercise 10.3: Q.1(i), Q.2,6,8,9,11, Exercise 10.4: Q.1(i,iii,iv,v), Q.2(v,vi), Q.3(ii), Q.4

**CHAPTER 11: FUNDAMENTALS OF TRIGONOMETRY**

**Classwork:** Exercise 11.1: Q.2,7,9

**Homework:** Exercise 11.1: Q.3,5,7,10,15

**CHAPTER 12: APPLICATION OF TRIGONOMETRY**

**Classwork:** Exercise 12.1: Q.1(i,ix), Q.2(ii), Exercise 12.2: Q.2,5, Exercise 12.3: Q.1,5, Exercise 12.4: Q.1, Exercise 12.5: Q.1,5,8, Exercise 12.6: Q.1,8, Exercise 12.7: Q.1(ii), Q.2(ii), Q.3(iii), Q.5, Proof (pg.379), Example 1: (pg.381), Example 3: (pg.383), Exercise 12.8: Q.1(ii), Q.3(ii), Q.5(ii), Q.6(ii), Q.7(ii), Q.11

**Homework:** Exercise 12.1: Q.1(iii,v), Q.2(i,vi), Exercise 12.2: Q.3,4, Exercise 12.3: Q.3,6,9, Exercise 12.4: Q.3,5, Exercise 12.5: Q.3,4,7,10, Exercise 12.6: Q.2,6,7,10, Exercise 12.7: Q.1(i), Q.2(i), Q.3(i), Q.4, Exercise 12.8: Q.1(i), Q.3(iii), Q.5(iv), Q.6(i), Q.7(i), Q.12

**CHAPTER 13: INVERSE TRIGONOMETRIC FUNCTIONS**

**Classwork:** Example 2: (pg.390), Example 4: (pg.396), Exercise 13.1: Q.1(iii,ix), Q.2(ii), Q.3(i,v,ix), Exercise 13.2: Q.3,11,14,19

**Homework:** Exercise 13.1: Q.1(iv,v,vi), Q.2(i,iii), Q.3(iii,iv,vii), Exercise 13.2: Q.1,2,6,12,17,18

**CHAPTER 14: SOLUTIONS OF TRIGONOMETRIC EQUATIONS**

**Classwork:** Example 1-3: (pg.401&402), Example 1,2,4,5: (pg.403,405 & 406), Q.14, Q.1(i,iii), Q.2(ii,iv), Q.4,6

**Homework:** Exercise 14: Q.1(ii,iv), Q.2(i,iii), Q.3,5
Chapter No./ Name / Topics / Exercise Q(s)/ Textbook Pages (s)

CHAPTER 1: INTRODUCTION
Biology and some major fields of specialization, Biological method, Biology and the service of mankind (excluding the subtopics “Disease Control”, “Preventive measures”, “Vaccination and Immunization”, and “Drug Treatment/ Gene therapy”) (Pg. 1-13)
Practicals: No practical
Questions:
Classwork: Fill in the blanks(i-iii, ix), True and false(No), Multiple choice questions (i,iv)
Homework: Short questions (i-iv), Extensive questions (i, iv, v)

CHAPTER 2: BIOLOGICAL MOLECULES
Introduction to biochemistry, Importance of water, Carbohydrates (excluding the subtopics “monosaccharides”, “oligosaccharides”, “polysaccharides”), Lipids (excluding the subtopics “acylglycerols”, “waxes”, “phospholipids”, “terpenoids”), Proteins, Structure of proteins, Nucleic acids (excluding the subtopics “DNA” and “RNA”) (Pg. 17-31)
Practicals:
1. Identification of biochemical from biological materials.
2. Iodine test for starch
3. Benedict's test for reducing sugars
4. Millon’s test for Proteins/Biuret test for proteins
5. Sudan III test for fats and oils and emulsion test
Questions:
Classwork: Fill in the blanks (i, ii), True and false (i), Multiple choice questions (iv)
Homework: Short questions (ii, iv and v), Extensive questions (i, iii)

CHAPTER 3: ENZYMES
Introduction, Characteristics of enzymes, Mechanism of enzyme action (catalysis), Inhibitors Irreversible inhibitors, Reversible inhibitors (competitive & non-competitive inhibitors) (Pg. 37-43)
Practicals:
1. Study of starch break down in germinating gram seeds.
Questions:
Classwork: Fill in the blanks (i-v), True and false (i-v), Multiple choice questions (No)
Homework: Short questions (i, iii-v), Extensive questions;(1, 3, 4)

CHAPTER 4: THE CELL
Structure of a generalized cell, Plasma membrane, Cell wall, Cytoplasm, Endoplasmic
reticulum, Ribosomes, Golgi apparatus, Lysosomes, Vacuoles, Cytoskeleton, Centriole, Mitochondria, Plastids (Chloroplasts, Chromoplasts, Leucoplasts), Nucleus (complete topic) Prokaryotic and eukaryotic cell (Pg. 48-64)

**Practicals:**
1. Study of animal cells (frog's epithelium cell, frog's buccal cavity cells) and plant cells (mesophyll cells, leaf epidermis cells, onion epidermis cells) by staining with safranin, acid fuchsin, methylene blue, eosine

**Questions:**
**Classwork:** Fill in the blanks (i-v), True and false (i-v), Multiple choice questions (i-vi)
**Homework:** Short questions (i-xi), Extensive questions (i, v)

**CHAPTER 5: VARIETY OF LIFE**
Introduction, Nomenclature, Two to five kingdom classification systems, Viruses (excluding the introductory paragraphs), Characteristics, Structure, Life cycle of bacteriophages, Some viral diseases: small pox, herpes, influenza, mumps and measles, polio, AIDS, Hepatitis (Pg. 67-80)

**Practicals:** No practical

**Questions:**
**Classwork:** Fill in the blanks (i-x), Multiple choice questions (i-xiv)
**Homework:** No Short question, No extensive question

**CHAPTER 6: KINGDOM PROKARYOTAE (MONERA)**
Structure of bacteria, Size, Shape of bacteria, Bacterial cell structure (complete topic – page 86 to 89), Nutrition of bacteria, Respiration in bacteria, Growth and Reproduction, Control of bacteria (Physical methods, Chemical methods), Use and misuse of antibiotics, Characteristics of Cyanobacteria (Pg.84-94)

**Practicals:**
1. Laboratory safety techniques and use of microscope and measurement of microscopic objects by micrometry.
2. Investigation of bacterial content of fresh and stale milk.
3. Study of Nostoc from fresh material and prepared slides.

**Questions:**
**Classwork:** Fill in the blanks (i-vi, vii), Multiple choice questions (i-vi)
**Homework:** Short questions (i a, b, ii-ix), Extensive questions (i-iii, v)

**CHAPTER 7: THE KINGDOM PROTISTA (OR PROTOCTISTA)**
Introduction, Major groups of Protista, Protozoa: Animal-like protists, Amoebae, Zooflagellates

**Practicals:**
1. Identification of Chlorella, Paramecium, Amoeba, Entamoeba, Plasmodium (malarial parasite) Euglena, Volvox, Ulothrix and Ulva from fresh materials or prepared slides.
Questions:
Classwork: Fill in the blanks (i, ii, v-viii)
Homework: Short questions (i, iv, v), Extensive questions (i-ix)

CHAPTER 8: FUNGI
Introduction. The body of fungus, Nutrition in fungi, Reproduction, Asexual reproduction, Sexual reproduction, Classification of fungi, Zygomyctota, Ascomycota, Basidiomycota, Deuteromycota, Importance of fungi, Ecological importance, Commercial importance, Economic gains due to fungi, Economic losses due to fungi (Pg. 113-128)
Practicals:
1. Study of yeast, Ustilago tritici and Pencillium from fresh materials and slides.

Questions:
Classwork: Multiple choice questions (i-viii)
Homework: Short Questions (i-x), Extensive questions (i-viii)

CHAPTER 9: KINGDOM PLANTAE
Classification of Plantae, Division Bryophyta, Adaptation to land habitat, Division Tracheophyta, Evolution of leaf, Evolution of seed habit, Class Gymnospermae (excluding the subtopic “Pinus – life cycle”), Class Angiospermae, Life cycle of an angiospermic plant, Seed formation, double fertilization, Classification of angiosperms (excluding the topic and subtopics of “Angiospermic families”) (Pg. 131-153)
Practicals:
1. Examination of Marchantia and Funaria (external morphology) from fresh material and of sex organs from prepared slides.
2. Study of Pinus: male and female cones from fresh or preserved materials.

Questions:
Classwork: Fill in the blanks (i-ix), Multiple Choice Questions (i-iv)
Homework: Short Questions (ii b, iv, vii), Extensive questions (ii-vi)

CHAPTER 10: KINGDOM ANIMALIA
Introduction, Grade Radiata, Grade Bilateria, Diploblastic and triploblastic organization, Acoelomates, pseudocoelomates, coelomates , Series proterostomia & Series dueterostomia, Phylum Porifera, Phylum Coelenterata (excluding the subtopic “Polymorphism”), Phylum Platyhelminthes (excluding the subtopics “infestation” and “disinfestation”), Adaptation for parasitic mode of life, Aschelminthes (Phylum Nematoda), Phylum Annelida (excluding the subtopics of classes “Polychaeta”, “Oligochaeta”, and “Hirudinea”), Phylum Arthropoda (excluding the subtopics of classes “Crustacea”, “Insecta”, “Arachnida”, and “Myriapoda”), Metamorphosis, Economic importance of arthropods, Phylum Mollusca (excluding the subtopics of classes “Gastropoda”, “Bivalvia” and “Cephalopoda”), Economic importance of Mollusca, Phylum Echinodermata; Echinodermata / Affinities, Phylum Chordata, Sub-phylum Vertebrata , Class Chondrichthyes, Class Osteichthyes (excluding the subtopic
“adaptations for aquatic life, Class Amphibia, Class Reptilia, Class Aves; Characters of Birds, Class Mammalia, Sub-class Prototheria, Sub-class Metatheria, Sub-class Eutheria (Pg. 167-203)

Practicals:
1. Exposure of respiratory system of frog.

Questions:
Classwork: Fill in the blanks (i-x), Multiple choice questions (i, ii, iv, v, vi, vii)
Homework: Extensive questions (i, ii, vii, viii)

CHAPTER 11: BIOENERGETICS
Introduction, Photosynthesis, Photosynthetic reactants and products, Water and photosynthesis, Photosynthetic pigments (Chlorophyll, Carotenoids), Reactions of photosynthesis, Light dependent reactions, Non-cyclic phosphorylation, Cyclic phosphorylation, Chemiosmosis, Light independent (or dark) reactions, Respiration, Anaerobic and aerobic respiration, Anaerobic Respiration (alcoholic fermentation, lactic acid fermentation), Cellular Respiration, Glycolysis, Pyruvic acid oxidation, Krebs cycle, Respiratory chain (Pg. 206-228)

Practicals:
1. Extraction and chromatography of leaf chloroplast pigments.

Questions:
Classwork: Fill in the blanks (i-v), Multiple choice questions (i-iii)
Homework: Extensive questions (i-iii, vii-x, xii-xiii)

CHAPTER 12: NUTRITION
Methods of plant nutrition (saprophytic nutrition, parasitic nutrition, symbiotic nutrition, nutrition in insectivorous plants), Digestion and absorption, Digestion in Man, Digestion in oral cavity, Digestion in stomach, Digestion in small intestine, Absorption of food, Large intestine, Some common diseases related to nutrition (Dyspepsia, Food poisoning, Obesity, Ulcer) (Pg. 235-256)

Practicals:
1. Study of T.S of liver, stomach, small intestine and large intestine of man prepared slides.

Questions:
Classwork: Fill in the blanks (i-viii), True and false (i-iii), Multiple choice questions (i-iii, vi-vii, ix)
Homework: Short questions (i, iii, iv), Extensive questions (i-iv, ix-xii, xvi-xv)

CHAPTER 13: GASEOUS EXCHANGE
Advantages and disadvantages of gas exchange in air and water, Gaseous exchange in plants, Properties of respiratory surfaces, Respiration in man, Air passage ways, Inspiration, Expiration, Transport of respiratory gases, Transport of oxygen, Transport of carbon dioxide, Carbon dioxide concentration in arterial and venous blood, Respiratory disorders (Cancer, Tuberculosis, Asthma), Role of respiratory pigments, Lung capacities (Pg. 259-275)
Practicals: No practical

Questions:

Classwork: Fill in the blanks (ii-v), True and false (i-ii, v), Multiple choice questions (i, iii-v)

Homework: Short questions (i-v), Extensive questions (i, v-vii)

CHAPTER 14: TRANSPORT

Transport in plants - Uptake and transport of minerals and water, Mineral absorption by roots, Processes involved in absorption by roots, Uptake of water by roots, Apoplastic pathway, Symplastic pathway, Vacuolar pathway, Ascent of sap, Cohesion tension theory, Mechanism of transpiration pull in cohesion and tension theory, Root pressure, Imbibition, Bleeding, Opening and closing of stomata, Mechanism of phloem translocation/transport, Diffusion, Pressure flow theory, Circulatory system, Characteristics of circulatory system, Open and closed circulatory system, Comparison of open and closed circulatory system, Transport in man, The circulatory fluid - the blood, Functions of blood, Disorders (blood cancer, thalassaemia), Pumping organ - The heart, Structure and action, The cardiac cycle, Mechanism of heart Excitation and Contraction Electrocardiogram, Artificial pace-maker, Blue babies, Blood vessels, Arteries, Capillaries, Veins, Blood pressure and rate blood flow, Hypertension, Thrombus formation and hypertension, Heart attack, Stroke, Hemorrhage, Lymphatic system, Immunity, Types of immunity (Pg. 278-327)

Practicals:

1. Demonstration of osmosis in living plant cells, (manifested by plasmolysis and deplasmolysis) of onion cells or spirogyra.
2. Study from prepared slides of internal structure of monocot. and dicot. root, stem and leaf.
3. Investigation of stomatal distribution (using clear nail varnish or epidermis peel)
4. Study of prepared, stained slide of human blood including identification of phagocytes and lymphocytes and preparation of slide of blood smear of frog.
5. Study of structure of artery, vein, capillary from their T.S. (Prepared Slides).
6. Study of effect of acetylcholine and adrenaline on the heartbeat of frog.
7. Exposure of blood circulatory system of frog (heart and main blood vessels).

Questions:

Classwork: Fill in the blanks (i-vi), Multiple choice questions (i-ix), True and false (i-v)

Homework: Extensive questions (i-v, vii, ix)
UNIT 1: BASICS OF INFORMATION TECHNOLOGY
Overview (Pg.1,2), Hardware and Software (Pg. 2-4), System Software VS Application Software (Pg. 15-16), Basic Units of Data Storage (Pg. 16-17), Word (Pg. 17-18), System Development (Pg. 18-22)
Classwork: Q.1 (i, ii, iii, vii ) (Pg.22), Q.4, 13 (Pg.24)
Homework: Q.5, 15 (Pg. 24)

UNIT 2: INFORMATION NETWORKS
Overview (Pg. 25), Workgroup Computing (Pg. 25-26), Internet (Pg.27-29), Components of network (Pg. 29-31), LAN vs WAN (Pg. 32-33), Network Standards (Pg. 35), Network Topologies (Pg. 35- 38), Open System Interconnection (OSI) Model (Pg. 37-38)
Classwork: Q.1 (i, iii- x), Q.2(i- viii) (Pg. 39), Q.3(ii-vi, viii-x) (Pg. 40), Q.4,5,8 (Pg.40)
Homework: Q.6, 11 (Pg. 40)

UNIT 3: DATA COMMUNICATIONS
Overview (Pg. 41), Components of Data Communication (Pg.42), Signals (Pg.42-43), Types of Data (Pg. 43), Types of Data Transmission (Pg. 46 -53)
Classwork: Q.1 (i- iv, vii, xi-x) (Pg. 56), Q.2(i, ii, v) (Pg. 55-56), Q.3(iii, v-vii) (Pg. 56), Q.4, 6, 9 (Pg. 56)
Homework: Q.7, 10 (Pg. 56)

UNIT 4: APPLICATIONS AND USES OF COMPUTER
Overview (Pg. 57), Uses of Computers in different Fields (Business, E-Commerce, Computer Added Design, Simulations only) (Pg. 57-67)
Class Work: Q.5, 6 (Pg. 70)
Home Work: Q.10 (Pg. 70)

UNIT 5: COMPUTER ARCHITECTURE
Overview (Pg.71-76), Bus Interconnection (Pg.76-78), The I/O Unit (Pg.78-81), Instruction Format (Pg. 82-84), Operating Systems (Pg. 85-86), The Translators and Their Functions (Pg. 87)
Classwork: Q.1, 2, 3(Pg. 88-89), Q.4, 5, 7, 10, 11 (Pg. 90)
Homework: Q.6, 8, 9, 14 (Pg. 90)

UNIT 6: SECURITY, COPYRIGHT AND LAW
Overview (Pg.91), Virus and Antivirus issues (Pg. 91-94), Data Security (Pg. 94-97)
Classwork: Q.1 (i- vi ) (Pg. 100 ), Q.2 (Pg. 100-101), Q.3(i- iv, vi- viii) (Pg. 101-102), Q.4, 5, 6 (Pg.102)
Homework: Q.9, 10, 11 (Pg. 102)

UNIT 7: WINDOWS OPERATING SYSTEM
Overview (Pg.103), Types of Operating System (Pg. 103-105), Starting to use Windows Operating System ( Objects of Windows Operating system, Features of Windows only)
(Pg. 105-107, 108-109), Disk Management (Pg.109-110)

**Classwork:** Q.1(i-vi, viii, x) (Pg.113), Q.2(Pg.113), Q.3(i, ii, v, viii-x) (Pg.114),
Q.4,6,8(Pg.114)

**Homework:** Q.5, 9, 10 (Pg. 114)

**UNIT 8: WORD PROCESSING**
Overview (Pg. 115), What is Word Processor? (Pg. 115-116), A Simple Word Processor
(Pg. 116), Full Featured Word Processor (Pg.116-118)

**Classwork:** Q.2(i, ii,) (Pg. 131), Q.5 (Pg. 132)

**Homework:** Q.6 (Pg. 132)

**UNIT 9: SPREADSHEET SOFTWARE**
Overview (Pg. 133), Features of Spreadsheet Software (Pg. 133), Basics of Worksheet
(Pg.135-137), Working with Formulas (Pg. 137-138), Functions (Pg.138-139),
Introducing Charts (Pg. 142-143)

**Classwork:** Q.1 (i- vi, viii-x) (Pg. 144-145), Q.2(Pg. 145), Q.3(i- iv, vi-x) (Pg. 145), Q.4,
5 (Pg.146)

**Homework:** Q.8, 9 (Pg. 146)

**UNIT 10: FUNDAMENTAL OF THE INTERNET**
Overview (Pg.147), Addressing Schemes (Pg.148-149), Web Browsing (URL (Uniform
Resource Locato only) (Pg. 149,150), Email (Email Address only) (Pg. 152),
Newsgroups (Pg. 152)

**Class Work:** Q.1 (iii, viii, ix) (Pg. 153),Q. 2 (Pg. 153), Q.3(i, iii, vi, vii, ix, x) (Pg. 154)

**Home Work:** Q.6 (Pg. 154)

**LIST OF PRACTICALS GRADE XI:**

**MS-EXCEL**
1. Inserting & Deleting Cells, Rows and Columns
2. Managing Worksheets
3. Use Formulas and Functions (formatting numbers, decimal places, column & rows setup etc).
4. Draw different types of charts
5. Use shortcuts

**INTERNET EXPLORER**
6. Send/ receive email to single user, multiple users.
7. Browsing Internet
8. Use of Shortcuts

**Note:**
Objective and subjective type papers should be given from the retained topics and
exercise questions.
SECOND YEAR

English Book-II

PART-I

LESSON 1: THE DYING SUN
Classwork: Lesson, Notes (Pg. 1-3), Question: 1, 2, 3, 4, 5, 6, 7, 8 -- Pg. 3
Homework: Question: 8 -- Pg. 3

LESSON 3: WHY BOYS FAIL IN COLLEGE
Classwork: Lesson, Notes (Pg. 8-12), Question: 1, 2, 3, 4, 5, 6, 7 -- Pg. 12
Homework: Question: 3,4 -- Pg. 12

LESSON 5: ON DESTROYING BOOKS
Classwork: Lesson, Notes (Pg. 16-19), Question: 1, 2, 3, 4, 5, 6,7,8,9 -- Pg. 19
Homework: Question: 7, 8, 9 -- Pg. 19

LESSON 7: MY FINANCIAL CAREER
Classwork: Lesson, Notes (Pg. 24-26), Question: 1, 2, 3, 4,5, 6 -- Pg. 27
Homework: Question: 5, 6 -- Pg. 27

LESSON 9: HUNGER AND POPULATION EXPLOSION
Classwork: Lesson, Notes (Pg. 33-36), Question: 1, 2, 3, 4, 5, 6,7, 8, 9 -- Pg. 37
Homework: Question: 7, 8, 9 -- Pg. 37

PART-II

LESSON 11: FIRST YEAR AT HARROW
Classwork: Lesson, Notes (Pg. 45-47), Question: 1, 2, 3, 4, 5, 6,7, 8 -- Pg. 47
Homework: Question: 6, 7, 8 -- Pg. 47

LESSON 14: LOUIS PASTURE
Classwork: Lesson, Notes (Pg. 66-74), Question: 1,2, 3, 4, 5, 6, 7, 8, 9 -- Pg. 74
Homework: Question: 1, 2, 9 -- Pg. 74

LESSON 15: MUSTAFA KAMAL
Classwork: Lesson, Notes (Pg. 75-82), Question: 1, 2, 3, 4, 5,6, 7, 8, ,9 -- Pg. 82
Homework: Question: 10, 11, 12, 13 -- Pg. 82

GOOD-BYE Mr. Chips

- This novel will be taught completely.
- Questions will be devised from all the eighteen chapters of the novel.

ENGLISH GRAMMAR AND COMPOSITION

ESSAYS
1. Life in a Big City
2. A Visit to a Historical Place
3. My Hobby
4. Pollution
5. My Favourite Personality
6. Why I Love Pakistan
7. Corona Pandemic in Pakistan
8. Technical Education
9. My Aim in Life
10. Computer: a Blessing or a Curse
11. Advantages and Disadvantages of Cell Phone
12. A Cricket Match
13. Science and Society
14. Women’s Place in Our Society
15. Education for Women
16. Corruption
17. Curbing Child Abuse
18. Importance of Muslim Unity
19. Rising Prices/Inflation
20. Drug Addiction

GENERAL STATEMENT

Teachers will teach the following grammar items in the classroom and will assign the same as homework for the reinforcement:

- Correction of common errors of parts of speech
- Use of preposition
- Use of idioms/phrases
- Translation of unseen passage (Urdu to English)

NOTE

- In objective type paper the question, ‘choose the right option of the underlined words” should be given from the retained lessons of English Book-II / GOOD-BYE Mr. Chips only.
- The students whose medium of instruction is English will write a paragraph on an unseen topic.
<table>
<thead>
<tr>
<th>نمبر</th>
<th>سوال نمبر ایال</th>
<th>جوابنامہoundation</th>
<th>جوابنامہfoundation</th>
<th>کانون</th>
<th>جوابنامہfoundation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
<td>60.5</td>
<td>26.0</td>
<td>40.0</td>
<td>40.0</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>60.5</td>
<td>26.0</td>
<td>40.0</td>
<td>40.0</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>60.5</td>
<td>26.0</td>
<td>40.0</td>
<td>40.0</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td>60.5</td>
<td>26.0</td>
<td>40.0</td>
<td>40.0</td>
</tr>
<tr>
<td>5</td>
<td>3</td>
<td>60.5</td>
<td>26.0</td>
<td>40.0</td>
<td>40.0</td>
</tr>
<tr>
<td>6</td>
<td>3</td>
<td>60.5</td>
<td>26.0</td>
<td>40.0</td>
<td>40.0</td>
</tr>
<tr>
<td>7</td>
<td>3</td>
<td>60.5</td>
<td>26.0</td>
<td>40.0</td>
<td>40.0</td>
</tr>
<tr>
<td>8</td>
<td>3</td>
<td>60.5</td>
<td>26.0</td>
<td>40.0</td>
<td>40.0</td>
</tr>
</tbody>
</table>

**ب (پ) حصرم**

<table>
<thead>
<tr>
<th>نمبر</th>
<th>سوال نمبر ایال</th>
<th>جوابنامہfoundation</th>
<th>جوابنامہfoundation</th>
<th>کانون</th>
<th>جوابنامہfoundation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
<td>60.5</td>
<td>26.0</td>
<td>40.0</td>
<td>40.0</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>60.5</td>
<td>26.0</td>
<td>40.0</td>
<td>40.0</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>60.5</td>
<td>26.0</td>
<td>40.0</td>
<td>40.0</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td>60.5</td>
<td>26.0</td>
<td>40.0</td>
<td>40.0</td>
</tr>
<tr>
<td>5</td>
<td>3</td>
<td>60.5</td>
<td>26.0</td>
<td>40.0</td>
<td>40.0</td>
</tr>
<tr>
<td>6</td>
<td>3</td>
<td>60.5</td>
<td>26.0</td>
<td>40.0</td>
<td>40.0</td>
</tr>
<tr>
<td>7</td>
<td>3</td>
<td>60.5</td>
<td>26.0</td>
<td>40.0</td>
<td>40.0</td>
</tr>
<tr>
<td>8</td>
<td>3</td>
<td>60.5</td>
<td>26.0</td>
<td>40.0</td>
<td>40.0</td>
</tr>
</tbody>
</table>
(ج) حصغزئ

1. خواجہ نور قام موصل کے بین، موجودہ جیہان کے بین

کاسی ورک: سوال اہم 8، 9 (صرف تحقیقی غزل کے حوالے سے)، 06 (تحقیقی)

بوم ورک: سوال اہم 8 (تحقیقی، پر، ج)، 08 (تحقیقی، پر، ج، 06)

2. قلم بعدی مصنفی

دیانتیں جیہ کی گزشت کی مانند گوئین رہا

کاسی ورک: سوال اہم 7، 8، 9 (تحقیقی غزل کے حوالے سے)، 06 (تحقیقی تحقیقی)

بوم ورک: سوال اہم 10 (تحقیقی تحقیقی فن)، 06

3. عرفان سباع

باندوفوڑ تو بطور کا آسان، ہوتا

کاسی ورک: سوال اہم 4، 5، 8، 9 (تحقیقی غزل کے حوالے سے)

بوم ورک: سوال اہم 9 (تحقیقی غزل) 10 (تحقیقی تحقیقی)

4. علوم اقیان

جب عشق کیا تاپیا آدیپوڑو کا گاتی

کاسی ورک: سوال اہم 3، 5، 6، 7

بوم ورک: سوال اہم 8، 9 (تحقیقی تحقیقی فن)، 11، 12 (تحقیقی تحقیقی)

5. علوم اقیان

نبسی دیوانی تین، نے فلکوں پر ہوا پہنے

کاسی ورک: سوال اہم 0، 11، 11 (آخری جرخت آبیک)

بوم ورک: سوال اہم 12، 13 (آخری پر اقیان)

6. اندیس کنی

ڈن ریڈ آک پوٹی نصیر پاشا کنی

کاسی ورک: سوال اہم 3 (تحقیقی، پر، ج)

بوم ورک: سوال اہم 4 (تحقیقی)

7. ناظر وولوی

سوکو دکّار دیسی کس ساکو ہملہ نہیں پوڑتا

کاسی ورک: سوال اہم 5، 6، 7

بوم ورک: سوال اہم 5، 6

قواعدوائی

(الف) مشروط کاری

کسی انسان نہیں (خالق اللہ اللہ علیه مدینہ مولوی ایہ وہ خیاطیہ دیکھے جا سکتے ہیں)

(ب)
ب) چتوالو لین

دوست کے نام خطے کرکے کوئی وقت پر ظہور رہنے نہیں کیجے گئے - (i)
چھوٹے بچائی کے نام ہی کسی کی مین پر ہمعالي کے نام تعمیر مخصوص گرہیمین سی ہیں جس کی حوصلہ علمی نقل کی گئی - (ii)
احرار پر کیہ کہ نام خطے کرکے دوہری حالت کی روک تقسیم کے لئے جھوٹا ہے - (iii)
معاشے کے حالات، بھی نوع مختلف خرید کر ایک کام کا خاتمہ کے لئے دوبارہ چھوڑ کر نام خطے کی گئی - (iv)
دوست کے نام خطے کی مین میں ایک بات کی جس کے جدید کوئی شیرانی ورسسی زاریں سے نہیں کے نہیں ہے - (v)
تاریخی مقامیں یہ کہ احوال پر مبنی اپنے دوست کے نام خطے کی گئی - (vi)
احرار کے میدان کے نام خطے کی مین میں پہچانی اواسس کے مسائل پر بہت خیالات کا ظہور کی جیہے - (vii)
اپنے دوست کے نام خطے کی مین میں ایک بات کی جس پر پہچانی نہیں کے نہیں کے نہیں ہے - (viii)
احرار کے میدان کے نام خطے کی مین میں ایک بات کی جس پر پہچانی نہیں کے نہیں ہے - (ix)

اس تاریخ کا ملکیوں دیگر زبانی کی خیالات کے نظر کو میں اواسس کے لیے دوست دکھایا گی - (j)
مطالعہ اوستروف کا دوست استعمال - (k)
روزرواف - (l)
امدادی افغان - (m)
مطالعہ پاکستان-12

باب 1: اسلامی جامعہ پاکستان کا قیام

نظریہ پاکستان، جاکردار عثمان عبدالرضا، پاکستان، نظریہ پاکستان کے ایک تحقیقی (عتیقہ دعویات،
جامعہ اسلامیہ فرقوں، معاشرتی انتقالی اردو میلاد کے تحقیقی وراثت، اخیر و بحثی بارے)، پاکستان-سلاسلیہ بریمشر
کی چند جنگ کے شیخہ جعفری پر احترام، سربدار اطخان اور تحقیقی علی گانی، پاکستان، معاشرتی و معاشرتی
سیاسی خدمات، ان کا اسلامی تعلق کا قیام، سلسلیہ کے قیام کے ابتدہ، معاشرتی و معاشرتی خدمات
کی تحقیقی اور پاکستان کی تاریخ کی منظوری کے لیے باقی ہے۔

کلاس ورق: کیتھرین کالما ویلیت (vi, i, iv, v, x)

جمع ورق: فلکی میں: سوالات 7.4, 3.4, 2.1

باب 2: اسلامی جامعہ پاکستان کی ابتدائی مکملت

ابتدائی مکملت (شیخہ کافر، ایک زیادہ اسلامی ابتدائی مکملت)، معاشرتی انتقالی، اسلامی تعلق کا قیام،
بھی چاندی کی حیات، اسلامی تعلق کا قیام، اسلامی تعلق کا قیام
(پیٹر، رابرت کا نامزد) قومی اقحان
کلاس ورق: کیتھرین کالما ویلیت (vii, vi, v, vi, vi, i, vi, i, vi)

جمع ورق: کیتھرین کالما ویلیت (vi, i, iv, v, x)

باب 3: اسلامی جامعہ پاکستان کا جنگرانہ

پاکستان کا جنگ اور وابستگی جنگ یہ کہ کہ روشنی (خلیت تازہ کے ایک قومی مسلم کا اسلامی تعلق، افغانستان، وسطی ایشیاء ممالک، جنگ اور جنگ)
پاکستان کا آب و بہار، دو دو اسلامی مکملت سے پاکستان کا جنگ اور وابستگی جنگ یہ کہ کہ روشنی
کلاس ورق: کیتھرین کالما ویلیت (x, i, iv, v)

جمع ورق: فلکی میں: سوالات 5.4.1

باب 4: پاکستان کا اسلامی جامعہ پاکستان کی اقدامات

فراری اور متنازعہ، متحرک عاجز پاکستان 1973ء، پاکستان میں ایک تنازع اسلام کے جنگ اقدامات 1973ء، کے آئین میں شریفی کے
 حقیقت، 1973ء، کے آئین میں شریفی کے جنگ اقدامات، اسلامی حقیقتی کے نئے متحارک اور اسلامی
حقیقت، اسلامی حقیقتی کے نئے متحارک اور اسلامی
کلاس ورق: کیتھرین کالما ویلیت (x, vi, vi, v)

جمع ورق: فلکی میں: سوالات 4, 3.4, 2.1

باب 5: پاکستان کا جنگارہ پاکستان کا اسلامی تعلق کی اقدامات

وافتی کوہستان اور ورثہ اور ورثہ اور ورثہ کی خلافت، وافتی کوہستان اور ورثہ اور ورثہ کی خلافت، وافتی کوہستان اور ورثہ اور ورثہ کی
وافتی کوہستان اور ورثہ اور ورثہ کی خلافت
(صدر پاکستان، وزیر اعظم، وزیر اعظم، وزیر اعظم، وزیر اعظم، وزیر اعظم)
باب 1: اسلامی حکومت کا پاکستان کی تاریخت

باب 2: اسلامی حکومت کا پاکستان کی ثقافت

باب 3: اسلامی حکومت کا پاکستان کی اقتصاد

باب 4: اسلامی حکومت کا پاکستان کی سیاست

باب 5: اسلامی حکومت کا پاکستان کی سیاست

باب 6: اسلامی حکومت کا پاکستان کی ثقافت

باب 7: اسلامی حکومت کا پاکستان کی اقتصاد

باب 8: اسلامی حکومت کا پاکستان کی سیاست

باب 9: اسلامی حکومت کا پاکستان کی معاشرت

باب 10: اسلامی حکومت کا پاکستان کی تعلیم
CHAPTER 12: ELECTROSTATICS
Electric Field Lines (Pg. 6,7), Electric Flux (Pg. 9,10), Electric Flux Through a Surface Enclosing a Charge (Pg. 10,11), Gauss’s Law (Pg. 11,12), Applications of Gauss’s Law (Pg. 12-14), Electric Potential (Pg. 14-18), Electron Volt (Pg. 18,19), Eclectic and Gravitational Forces (A Comparison) (Pg. 19), Charge on an Electron by Millikan’s Method (Pg. 20,21), Capacitor (Pg. 22), Capacitance of a Parallel Plate Capacitor (Pg. 22-24), Energy Stored in a Capacitor (Pg. 25,26), Charging and Discharging a Capacitor(Pg. 26) Examples: 12.3, 12.4, 12.5, 12.6 (Pg. 18,19, 21, 27)
Classwork: Questions: 12.3, 12.6, 12.7 (Pg. 28), Problems: 12.1, 12.12, 12.13 (Pg. 28-30)
Homework: Questions: 12.8, 12.9 (Pg. 28), Numerical Problem: 12.7 (Pg. 29)

CHAPTER 13: CURRENT ELECTRICITY
Resistivity and its Dependence upon Temperature (Pg. 38, 39), Colour Code for Carbon Resistances (Pg. 40-42), Electrical Power and Power Dissipation in Resistors (Pg. 42-46), Kirchhoff’s Rule (Pg.46- 50), Wheatstone Bridge (Pg. 50, 51), Potentiometer (Pg. 51, 52), Examples: 13.2, 13.3, 13.4 (Pg. 39, 40, 45)
Classwork: Questions: 13.1, 13.4, 13.6, 13.7, 13.9 (Pg.53,54), Problems: 13.6, 13.7, 13.8 (Pg.54,55)
Homework: Questions: 13.2, 13.3, 13.8 (Pg. 53, 54), Problems: 13.4, 13.5 (Pg. 54)

CHAPTER 14: ELECTROMAGNETISM
Force on a Current Carrying Conductor in a Uniform Magnetic Field (Pg. 57-60), Magnetic Flux and Flux Density (Pg. 60, 61), Ampere’s Law and Determination of Flux Density B (Pg. 61-63), Force on a Moving Charge in a Magnetic Field (Pg. 64-66), Motion of Charged Particle in an Electric and Magnetic Field (pg. 66), Determination of
e/m of an Electron (Pg. 66, 67), Cathode Ray Oscilloscope (Pg. 68-70), Torque on a Current Carrying Coil (Pg. 70, 71), Ammeter-Multimeter (Pg. 76-78), Examples: 14.1, 14.2, 14.3, 14.4, 14.5 (Pg. 60, 61, 63, 68)

**Classwork:** Questions: 14.1, 14.2, 14.3, 14.4, 14.5, 14.7, 14.9, 14.11 (Pg. 79), Problems: 14.1, 14.3, 14.4, 14.5, 14.6 (Pg. 80)

**Homework:** Questions: 14.6, 14.8, 14.10 (Pg. 79), Problems: 14.2, 14.7 (Pg. 80)

**CHAPTER 15: ELECTROMAGNETIC INDUCTION**

Induced EMF and Induced Current (Pg. 82-84), Motional EMF (Pg. 84-86), Faraday’s Law and Induced EMF (Pg. 86-88), Lenz’s Law and Direction of Induced EMF (Pg. 88-90), Mutual Induction (Pg. 90-92), Self Induction (Pg. 93, 94), Energy Stored in an Inductor (Pg. 95-97), Alternating Current Generator (Pg. 97-100), Examples: 15.1, 15.2, 15.3, 15.4, 15.6 (Pg. 86, 88, 92, 94, 100)

**Classwork:** Questions: 15.1, 15.2, 15.3, 15.8, 15.9, 15.13 (Pg. 107, 108), Problems: 15.1, 15.2, 15.3, 15.7, 15.8, 15.10, 15.16, 15.17 (Pg. 109, 110)

**Homework:** Questions: 15.4, 15.5, 15.10 (Pg. 108), Problems: 15.4, 15.5, 15.11 (Pg. 109, 110)

**CHAPTER 16: ALTERNATING CURRENT**

Alternating Current (Pg. 111-116), A.C. Circuits (Pg. 116), A.C. Through a Resistor (Pg. 116, 117), A.C. Through a Capacitor (Pg. 117-119), A.C. Through an Inductor (Pg. 119, 120), Impedance (Pg. 120, 121), R-C and R-L Series Circuits (Pg. 121, 122), Power in A.C. Circuits (Pg. 122, 123), Series Resonance Circuit (Pg. 124, 125), Parallel Resonance Circuit (Pg. 125, 126), Three Phase A.C. Supply (Pg. 126, 127), Electromagnetic Waves (Pg. 128, 129), Examples: 16.1, 16.2, 16.3, 16.4, 16.5, 16.6, 16.7 (Pg. 114, 118, 121, 123, 124, 126)

**Classwork:** Questions: 16.2, 16.3, 16.4, 16.6 (Pg. 133), Problems: 16.1, 16.2, 16.5, 16.8, 16.10 (Pg. 133, 134)

**Homework:** Questions: 16.1, 16.5 (Pg. 132, 133), Problems: 16.3, 16.4, 16.6, 16.7, 16.9 (Pg. 133, 134)

**CHAPTER 17: PHYSICS OF SOLIDS**

Mechanical Properties of Solids (Pg. 137-142), Electrical Properties of Solids (Pg. 142-146), Superconductors (Pg. 146, 147), Magnetic Properties of Solids (147-151), Example: 17.1 (Pg. 140, 141)

**Classwork:** Questions: 17.4, 17.5, 17.6, 17.8, 17.11 (Pg. 152), Problems: 17.2, 17.3, 17.4, 17.5 (Pg. 153)

**Homework:** Questions: 17.2, 17.3, 17.7, 17.9, 17.10 (Pg. 152), Problem: 17.1 (Pg. 153)

**CHAPTER 18: ELECTRONICS**

Brief Review of p-n Junction and its Characteristics (Pg. 154-156), Rectification (Pg. 156, 157), Specially Designed p-n Junctions (Page. 157, 158), Transistors (Pg. 159-161), Transistor as an Amplifier (Pg. 161, 162), Operational Amplifier (Pg. 162-164), Op-Amp as Inverting Amplifier (Pg. 164), Op-Amp as Non-Inverting Amplifier (Pg. 164, 165), Comparator as a Night Switch (Pg. 166, 167), Examples: 18.1, 18.2 (Pg. 161, 165)

**Classwork:** Questions: 18.3, 18.6, 18.7, 18.9, 18.10, 18.12 (i-iii,v), (Pg. 172, 173),
Problems: 18.1, 18.4 (Pg. 174)

**Homework:** Questions: 18.1, 18.2, 18.4, 18.8 (Pg.172), Problem: 18.5 (Pg. 174)

**CHAPTER 19: DAWN OF MODERN PHYSICS**
Black Body Radiation (Pg. 181-185), Interaction of Electromagnetic Radiations with Matter (Pg. 185-191), Annihilation of Matter (Pg. 191,192), Wave Nature of Particles (Pg. 192-196), Uncertainty Principle (Pg. 196-198), Examples: 19.4, 19.5, 19.6, 19.7, 19.8, 19.9, 19.10, 19.11 (Pg. 185, 188, 189, 190, 195, 198)


**CHAPTER 20: ATOMIC SPECTRA**
Bohr’s Model of the Hydrogen Atom (Pg. 204-208), Inner Shell Transitions and Characteristic X-Rays (Pg. 208-212), Uncertainty with the Atom (Pg. 212, 213), Laser (Pg. 213-216), Example: 20.1(Pg. 208)

**Classwork:** Questions: 20.1, 20.3, 20.8, 20.10, (Pg. 217), Problems: 20.3, 20.7, 20.8, 20.10 (Pg. 217,218)

**Homework:** Questions: 20.5, 20.7, 20.9 (Pg. 217), Problems: 20.2, 20.9 (Pg. 218)

**CHAPTER 21: NUCLEAR PHYSICS**
Mass Defect and Binding Energy (Pg. 223-226), Radioactivity (Pg. 226-229), Half Life (Pg. 229-231), Interaction of Radiation with Matter (Pg. 232-234), Radiation Detectors (Pg. 234-238), Nuclear Reactors (Pg. 238-240), Nuclear Fission (Pg. 240-243), Fusion Reaction (Pg. 246-249), Radiation Exposure (Pg. 249,250), Basic Forces of Nature (Pg. 254, 255), Building Blocks of Matter (Pg. 255, 256), Examples: 21.1, 21.2 (Pg. 224, 231, 232)


**EXPERIMENTS**
1. Find the resistance of wire by slide wire bridge.
2. Find the resistance of a voltmeter by drawing a graph between R and I/V.
3. Convert a galvanometer into a voltmeter of range 0-3 volts.
4. Determine the emf of a cell using a potentiometer.
5. Study the relation between current passing through a tungsten filament lamp and potential applied across it.
6. Study the variation in the magnetic field strength along the axis of a current carrying circular coil.
7. Study the relation between current and capacitance of capacitors in an A.C circuit.
8. Find the variation of photoelectric current with the intensity of light.
10. Make a fire alarm from NOT gate
11. Find the high resistance by Neon Flash Tube.
12. Determination of e/m of an electron by ‘Magnetron’ method.
CHAPTER 1: PERIODIC CLASSIFICATION OF ELEMENTS AND PERIODICITY
TOPIC: (1.2, 1.3, 1.5).
Classwork: Q.1(i, ii, iii, v, vi, vii, viii, ix, x), Q.2(i to viii), Q.3(i, to ix), Q.14(a, b, c, d, e, f).

CHAPTER 2: S-BLOCK ELEMENTS
TOPIC: (2.1, 2.3, 2.4).
Introduction (Pg. 20-24), Commercial Preparation of Sodium by Down’s Cell, Commercial Preparation of Sodium Hydroxide by the Diaphragm Cell (Pg. 29-32).
Classwork: Q.1, Q.2, Q.3, Q.10.
Homework: Q.4, Q.5, Q.6, Q.7, Q.8, Q.9.

CHAPTER 3: GROUP IIIA AND GROUP IVA ELEMENTS
TOPIC: (3.1, 3.2, 3.3, 3.4).
Group IIIA Elements, Compounds of Boron, Reactions of Aluminium, Group IVA Elements (Pg. 37-46).
Classwork: Q.1(i to ix), Q.2(i, ii, iii, iv, v, vi, vii, ix, x), Q.3, Q.4, Q.5, Q.6, Q.7, Q.8, Q.12.
Homework: Q.14, Q.15, Q.16, Q.17, Q.18, Q.19.

CHAPTER 4: GROUP VA GROUP VIA ELEMENTS
TOPIC: (4.1, 4.2, 4.3 (4.3.1, 4.3.2), 4.4, 4.5)
Introduction, Nitrogen and its compounds, Phosphorus and its Compounds (Occurrence, Allotropes of Phosphorus) (Pg. 56-64), Group VIA Elements, Sulphuric Acid (Pg. 68-75).
Classwork: Q.1, Q.2(i to viii, x), Q.3, Q.4, Q.10, Q.11.

CHAPTER 5: HALOGENS AND THE NOBLE GASES
TOPIC: 5.1, 5.2, 5.4, 5.5).
Introduction, Occurrence (Pg. 79-81). Oxidizing Properties, Compounds of Halogens (Pg. 81-89).
Classwork: Q.1(i, ii, iii, v, viii), Q.3, Q.5, Q.8, Q.9.
Homework: Q.4, Q.6, Q.7.

CHAPTER 6: TRANSITION ELEMENTS
TOPIC: (6.2, 6.5).
Properties of Transition Elements (Pg. 100-103). Corrosion (109-111)
Classwork: Q.1(iv, vi, vii), Q.2(i to vii), Q.3(i, ii, iii, iv, viii), Q.11.
Homework: Q.4 Q.8.

CHAPTER 7: FUNDAMENTAL PRINCIPLES OF ORGANIC CHEMISTRY
TOPIC: (7.1, 7.2, 7.5, 7.6, 7. 7, 7.8, 7.9, 7.10).

Classwork: Q.1, Q.2 (i, ii, iii, iv, v, vii, viii, ix) Q.3, Q.6, Q.7. Q.8, Q.14, Q.15.


CHAPTER 8: ALIPHATIC HYDROCARBONS

TOPIC: ALL.

Included full Chapter with Exercise.

CHAPTER 9: AROMATIC HYDROCARBONS

TOPIC: ALL.

Included full Chapter with Exercise.

CHAPTER 10: ALKYL HALIDES

TOPIC: (10.1, 10.2, 10.3, 10.5).

Introduction, Nomenclature of Alkyl Halides, Methods of Preparation of Alkyl Halides (Pg. 194-197). Reactions of Alkyl Halides (Pg. 198-204).

Classwork: Q.1, Q.2 (i, iv, vii, viii, ix), Q.3 (i, v, vi, vii, viii, ix, x), Q.6, Q.7, Q.12.

Homework: Q.4, Q.8, Q.9, Q.10.

CHAPTER 11: ALCOHOLES, PHENOLS AND ETHERS

TOPIC: (11.1, 11.2, 11.3, 11.4 11.5).

Introduction, Alcohols, Distinction between Primary, Secondary and Tertiary Alcohols, Uses of Alcohols, Phenol (Pg. 211-222).

Classwork: Q.1, Q.2 (i, ii, iii, iv, v, vi, vii, viii, x), Q.3 (i, ii, iii, iv, v, vi, vii, ix), Q.4, Q.7, Q.10, Q.11, Q.12, Q.18.

Homework: Q.5, Q.6, Q.9, Q.13 (i, ii, iii), Q.14, Q.15, Q.16, Q.17.

CHAPTER 12: ALDEHYDES AND KETONES

TOPIC: ALL.

Included full Chapter with Exercise.

CHAPTER 13: CARBOXYLIC ACIDS


Introduction, Nomenclature of Carboxylic Acids, General Methods of Preparation, Physical Characteristics, Reactivity of Carboxylic Group, Acetic Acid (Pg. 250-259).

Classwork: Q.1 ((i, ii, iii, iv, v, vi), Q.2 ((i, ii, iii, iv, v, ix), Q.3 (i, ii, iii, iv, v, vi, vii, viii, ix), Q.4, Q.5, Q.9, Q.16.

Homework: Q.6, Q.7, Q.10.

CHAPTER 14: MACROMOLECULES

TOPIC: NIL

Excluded full chapter.

CHAPTER 15: COMMON CHEMICAL INDUSTRIES IN PAKISTAN

TOPIC: (15, 3, 15.4, 15.5).

Elements Essential for Plants Growth, Classification of Fertilizers, Cement (Pg.
292-299).

**Classwork:** Q.1(i, ii, iii, iv, v, vi, viii, ix), Q.2(i, ii, iii, iv, viii, x), Q.3(i, iii, iv, v, vi, viii, ix, x).

**Homework:** Q.4, Q.5, Q.6, Q.7.

**CHAPTER 16: ENVIRONMENTAL CHEMISTRY**

**TOPIC:** NIL

Excluded full chapter.

**LIST OF EXPERIMENTS (CHEMISTRY) PART- II**

1. Qualitative analysis of simple acid and basic radicals.
4. Preparation of iodoform.
5. Preparation of copper ammine complex, Tetra mine cupric sulphate.

---

**MATHEMATICS-12 (CALCULUS AND ANALYTIC GEOMETRY)**

**UNIT 1: FUNCTIONS AND LIMITS**

**Classwork:** Example 3 & 4: (pg.2 & 3), Example 6: (pg.4), Example 3: (pg.10), Exercise 1.1: Q.1(b)(iii), Q.2(iv), Q.4(ii,v), Q.7(i), Q.9(v), Example 3: (pg.14), Exercise 1.2: Q.1(iii), Q.2(iv), Q.3(ii), Example 1: (ii)(pg.20), Example 2 & 4: (pg.22), Example 5: (pg.24), Example 7: (pg.26), Exercise 1.3: Q.1(v), Q.2(v), Q.3(viii), Q.4(iii), Example 4 & 5: (pg.30), Exercise 1.4: Q.2(i), Q.3, 6

**Homework:** Exercise 1.1: Q.1(a)(iv), Q.2(i,ii), Q.3, Q.4(iv,viii), Q.5, Q.6, Q.7(ii), Q.9(vi), Q.1(ii,iv), Q.2(iii), Q.3(i), Exercise 1.2: Q.1(ii,iv), Q.2(iii), Q.3(i), Exercise 1.3: Q.1(iii), Q.2(i,ii,iv,vi,ix), Q.3(iii-v,vi,ix-xii), Q.4(iv,vii-xi), Exercise 1.4: Q.2(ii), Q.4, 5

**UNIT 2: DIFFERENTIATION**

**Classwork:** Example 2: (pg.46), Example 5: (pg.48), Exercise 2.1: Q.1(v), Q.2(ii), Example 3: (pg.55), Example 7 & 8: (pg.59 & 60), Exercise 2.3: Q.6,13, Example 3: (pg.63), Example 1 & 2: (pg.66), Example 2: (pg.68), Example 4: (pg.69), Exercise 2.4: Q.1(ii), Q.2(v), Q.3(ii), Q.5(iii), Example 2(ii) (pg.74), Derivatives of Inverse Trigonometric Functions (pg.75-77), Exercise 2.5: Q.1(vii), Q.2(iv), Q.5(ii), Q.7, Q.10(v), Q.12, Example 1: (pg.83), Example 3: (pg.84), Exercise2.6: Q.1(iv), Q.2(v,ix), Q.3(iv), Example 2: (pg.91), Example 4: (pg.92), Example 7: (pg.94), Exercise 2.7 Q.1(i), Q.2(i), Q.3(ii), Q.6, 8, Examples 1, 2 & 3: (pg.96&97), Exercise 2.8: Q.1(ii), Q.2, Example 2: (pg.112), Exercise 2.9: Q.1(ii), Q.2(iii), Q.4, Example 5: (pg.116), Exercise 2.10: Q.2, 7, 12

**Homework:** Exercise 2.1: Q.1(ii,iii,vi,ix,xiv), Q.2(i), Exercise 2.3: Q.4,8,9,11,12,16,17, Exercise 2.4: Q.1(iv), Q.2(i-iii), Q.4, Q.5(i,v), Exercise 2.5: Q.1(iii,vi), Q.2(ii), Q.3(i), Q.5(i), Q.6,8,9 Q.10(ii,iv,vi), Q.11, Exercise 2.6: Q.1(i,vi,vi, Q.2(iii,iv,vi, Q.3, Q.7,9, Exercise 2.8: Q.1(iv,v), Q.2,
Exercise 2.9: Q.1(i,iii), Q.2(vi,viii,ix), Q.5, Exercise 2.10: Q.5,6,11

UNIT 3: INTEGRATION

Classwork: Example 1 & 2: (pg.121), Exercise 3.1: Q.1(ii), Q.2(i), Q.3(iii), Example 12: (ii,v,vi,vii) (pg.128-130), Exercise 3.2: Q.1(ii&x), Q.2(iii,xiv), Example 2,4,5,7,8,10 (pg.132-134), Exercise 3.3: Q.2,7,11,16, Example 6: (pg.140), Exercise 3.4: Q.1(ii,vii), Q.2(v), Q.4(vi), Q.5(ii,vi), Exercise 4: (pg.147), Example 8: (pg.149), Exercise 3.5: Q.2,11,20,25,31, Example 1: (pg.157), Example 2: (ii)(pg.158), Example 4: (pg.159), Example 7 & 8: (pg.161), Exercise 3.6: Q.2,9,29,27, Example 1 & 2: (pg.164 & 165), Exercise 3.7: Q.2,5, Example 4: (pg.171).Exercise 3.8: Q.1(ii), Q.3,13

Homework: Exercise 3.1: Q.1(i,iii), Q.2(ii), Q.3(i,i), Q.4, Exercise 3.2: Q.1(iii,iv,vi,vii) Q.2(ii,iv,ix,xi,xii), Exercise 3.3: Q.3,4,5,6,8,12,13,15,21, Exercise 3.4: Q.1(iii,vi,ix,xiii, xiv,xy,xix,xxi), Q.2(ii,iv,vi), Q.3,4(ii,v), Q.5(i,iii,iv,v), Exercise 3.5: Q.1,3,4,5,6,7,8,13, 22,23,30, Exercise 3.6: Q.1,3,4,6,7,8,10,11,15,16,18,19,26, Exercise 3.7: Q.1,3,7,8, Exercise 3.8: Q.1(iv,v), Q.2,4,5,7,8,9,17,18

UNIT 4: INTRODUCTION TO ANALYTIC GEOMETRY

Classwork: Exercise 3: (pg.183), Exercise 4.1: Q.1(viii), Q.2(a,b), Q.8, Example 1: (pg.187), Example 3: (pg.189), Exercise 4.2: Q.1(ii), Q.3(i), Example 6: (pg.198), Example 9: (iii)(pg.202), Example 11: (pg.203), Example 3: (pg.209), Example 4: (pg.312), Example 5: (pg.214), Exercise 4.3: Q.3(b), Q.6, Q.9(b), Q.10(d) Q.15, Q.21(b), Q.22(e), Q.27,30, Example 2: (pg.219), Exercise 4.4: Q.2(iii), Q.5, Q.15, Example 1: (pg.226), Example 3: (pg.228), Exercise 4.5: Q.2,8

Homework: Exercise 4.1: Q.1(vii,ix), Q.4(i), Q.9, Exercise 4.2: Q.1(iii,iv), Q.3(ii,iv), Q.4(i), Exercise 4.3: Q.3(a), Q.4, Q.10(a,e), Q.13, Q.21(c), Q.22(a,c), Q.23(a), Q.25,26,28, Exercise 4.4: Q.2(ii), Q.4, Q.11(b,c), Q.14, Exercise 4.5: Q.4,6,7

UNIT 5: LINEAR INEQUALITIES AND LINEAR PROGRAMMING

Classwork: Example 2: (pg.234), Exercise 5.1: Q.1(iii), Q.2(ii), Q.3(ii), Q.4(vi), Q.5(v), Example 3(a): (pg.241), Exercise 5.2: Q.1(iv), Q.2(v), Example 1: (pg.246), Exercise 5.3: Q.2,6

Homework: Exercise 5.1: Q.1(i,iv), Q.2(iii), Q.3(iii,vi), Q.4(ii,v), Q.5(iv,vi), Exercise 5.2: Q.1(i,i), Q.2(iv,vi), Exercise 5.3: Q.1,3,4

UNIT 6: CONIC SECTION

Classwork: Example 2: (pg.251), Example 6: (pg.254), Exercise 6.1: Q.1(b), Q.2(b), Q.3(b), Q.4(b), Q.7, Example 3: (pg.260), Example 6: (pg.262), Example 8: (pg.263), Exercise 6.2: Q.1(ii), Q.2(ii), Q.6, Q.9, Example 2: (pg.277), Example 4: (pg.279), Example 5: (pg.280), Exercise 6.4: Q.1(ii), Q.2(i,viii), Q.4, Q.6, Example 3: (pg.296), Exercise 6.6: Q.2(ii,viii), Q.3, Example 7: (pg.307), Example 9: (pg.308), Exercise 6.7: Q.1(ii), Q.2(ii), Q.3(ii), Q.5, Q.8(ii,v), Example 3 & 4: (pg.312), Exercise 6.8: Q.1(iii,v), Q.2(ii), Q.3(ii), Q.4(ii), Example 2: (pg.318), Example 5:(pg.323), Exercise 6.9: Q.1(iii,viii), Q.2(ii), Q.3(ii)

Homework: Exercise 6.1: Q.1( c), Q.2(d), Q.3(d), Q.4(d), Q.9, Exercise 6.2: Q.1(i), Q.4, Q.5, Q.7(ii), Q.8(iii), Exercise 6.4: Q.1(v,ix,x), Q.2(iii,ix,x), Q.5, Q.8, Exercise 6.6:
UNIT 7: VECTORS
Classwork: Example 2 & 3: (pg.331), Exercise 7.1: Q.1(i), Q.2(ii), Q.5, Q.6(iii), Q.9, Exercise 7.2: Q.2(iii), Q.4, Q.10(c ), Q.11(iii), Example 8(i): (pg.348), Exercise 7.3: Q.5 Q.11, Q.12(iv), Exercise 7.4: Q.1(iv), Q.2(ii), Q.7, 9, Example 1: (pg.361), Example 4: (pg.362), Exercise 7.5: Q.1(ii), Q.4(i), Q.7, Q.13, Q.15
Homework: Exercise 7.1: Q.1(ii), Q.2(ii), Q.4, Q.6(i,ii), Q.11,12, Exercise 7.2: Q.1(iii), Q.2(ii), Q.3(ii), Q.5, Q.7, Q.10 (b), Q.11(i,ii), Exercise 7.3: Q.1(iv), Q.3(ii), Q.7,9, Q.12(iii), Exercise 7.4: Q.1(i), Q.2(i), Q.4(ii), Q.5(ii), Q.8, Exercise 7.5: Q.1(iii), Q.3 Q.4(ii), Q.5(ii), Q.6,10,12

BIOLOGY-12

CHAPTER 15: HOMEOSTASIS
Concepts in homeostasis, Osmoregulation, Osmoregulation in plants (hydrophytes, mesophytes, xerophytes), Osmoregulation in animals (osmoconformers, osmoregulators), Osmoregulation in different environments, Excretion in plants, Excretion in animals, Nature of excretory products in relation to habitats, Excretion in vertebrates, Excretion in human, Excretory organs: liver, Urinary system, Concentration of excretory products, Kidney as osmoregulatory organ, Kidney problems and cures (complete topic), Thermoregulation, Temperature classification of animals, Regulation of heat exchange between animals and environment, Thermoregulation in mammals (human), Thermostat function and feedback controls in human, Temperature in fever (Pyrexia) (Pg.1- 20)
Practicals:
1. Investigation of adaptive features of hydrophytes, halophytes, xerophytes and mesophytes, from fresh material and prepared slides.
Questions:
Classwork: Fill in the blanks (i-iii, v-vii), Multiple choice questions (i-v, vii-ix)
Homework: Short questions (i-v), Extensive questions (i, iii-vii)

CHAPTER 16: SUPPORT AND MOVEMENT
Support in plants (Sclerenchyma cells, Collenchyma Cells), Support and movements in animals (Hydrostatic Skeleton, Exoskeleton, Endoskeleton), Human skeleton: Axial skeleton, Appendicular skeleton, Joints, Deformities of skeleton (complete topic), Repair of broken bones, Muscles, Smooth muscles, Cardiac muscles, Skeletal muscles, Skeletal muscle fibre, Ultrastructure of Myofilament, Sliding filament model, How the bridges are controlled, Controlling the actin - myosin interaction by Ca++ ions, Energy for muscle contraction, Arrangement of skeletal muscles for movement of skeleton, Movement of bones, Evolutionary changes in the arrangement of bones and related mode of locomotion
in major groups of vertebrates (Pg.23- 48)

Practicals:
1. Study from prepared slides, of skeletal, smooth and cardiac muscles and preparation of slide of striated muscles of cockroach.
2. Study of skeleton of frog.
3. Study, from prepared slides, of plant supporting tissues such as sclerenchyma and collenchyma.

Questions:

Classwork: Fill in the blanks (i-ix), True and false (i-vi), Multiple choice questions (i-ix, xi-xii, xiv)

Homework: Short questions (iii, v, ix), Extensive questions (i-vii, ix-xiii)

CHAPTER 17: COORDINATION AND CONTROL

Introduction, Coordination in plants: Control through hormones, Plant hormones (complete topic), Nervous co-ordination, Receptors, Neurons, Effectors, Reflex Arc, Nerve impulse, Synapse, Human nervous system, Central nervous system; Brain, Spinal cord, Peripheral nervous system, Autonomic Nervous System, Nervous disorders (complete topic), Effect of drugs on coordination, Chemical coordination, Hormones, Endocrine glands of mammals (complete topic), Feedback mechanism, Innate behaviour, Orientation, Reflexes and instincts, Instincts and learning (Pg.53-82)

Practicals:
1. Study of ductless and vascularized nature of endocrine glands (pancreas, thyroid, microscopic sections.

Questions:

Classwork: Fill in the blanks (i, ii, iv, v), True and false (i-vi) Multiple choice questions (ii-v)

Homework: Short questions; (ii-v, vii); Extensive questions (ii, iii, v, vi)

CHAPTER 18: REPRODUCTION

Introduction, Reproduction in plants, Parthenocarpy, Seed dormancy, Fruit set and fruit ripening, Reproduction in animals, Asexual reproduction, Identical twins, Sexual reproduction, Reproduction in man, Male reproductive system, Female reproductive system, Female reproductive cycle, Birth, Test tube babies, Sexually transmitted diseases, AIDS (Pg. 87-102)

Practicals: No practical

Questions:

Classwork: Fill in the blanks (i, ii, iv–vii), True and false (i-iv), Multiple choice questions (i, iii-v)

Homework: Short questions; (i-iv) Extensive questions (i-iv)

CHAPTER 19: GROWTH AND DEVELOPMENT

Introduction, Growth and development in plants, Apical meristems, Intercalary meristems, Lateral meristems, Types of growth, Growth correlation, Growth and
development in animals, Development of chick (complete topic), Role of cytoplasm in development, Role of nucleus in development, Regeneration, Abnormal development (Pg. 105-119)

Practicals:
1. Study of structure of hen’s egg.
2. Study of development of chick embryo 48/ 72 hours after incubation.

Questions:
Classwork: Fill in the blanks (i-iv) True and false (i-v) Multiple choice questions (ii, iii)
Homework: Short questions (ii, iv, v), Extensive questions (ii, iii, v)

CHAPTER 20: CHROMOSOME AND DNA
Types of chromosomes, Composition of chromosome, DNA as a heredity material, Chemical nature of DNA, Double helical structure of DNA, DNA replication, Meselson and Stahl experiment, Replication process, One gene one polypeptide hypothesis, Cells use RNA to make protein, Transcription, Genetic code, Translation, Mutations (Pg. 122-147)

Practicals: No practical

Questions:
Classwork: Fill in the blanks (i-v), True and false (i-iv), Multiple choice questions (i-vi)
Homework: Short questions (i-iv) Extensive questions (i-iv)

CHAPTER 21: CELL CYCLE
Interphase, Mitosis (complete topic), Importance of mitosis, Cancer (uncontrolled cell division), Meiosis (complete topic), Importance of meiosis, Meiotic errors, Down’s Syndrome, Klinefelter’s Syndrome, Turner’s Syndrome (Pg. 150-160)

Practicals:
1. Preparation of root tip squashes to study stages of mitosis.
2. Preparation of squashes of Rheodiscolor floral buds to study meiosis and observation stages of meiosis from prepared slides and study of Polytene chromosome.

Questions:
Classwork: Fill in the blanks (i-vi), Multiple choice questions (i-iii), True and false (i-xi, xiii, xiv)
Homework: Short questions (ii-viii), Extensive questions (i-iii, v-vi)

CHAPTER 22: VARIATION AND GENETICS
Genes, alleles and gene pool, Mendel’s law of inheritance, Mendel’s interpretations, Law of Segregation, Dihybrid and dihybrid cross, Dominance relations, Complete dominance, Incomplete dominance, Codominance, MN blood type or blood group system, Overdominance, Multiple alleles, ABO blood group system in Man, Rh blood group system; Erythroblastosis foetalis, Gene linkage, Crossing over, Sex Chromosomes, Sex linkage in human (complete topic), Diabetes and its genetic basis. (Pg. 163-197)

Practicals:
1. Study of continuous variations in the height in man and discontinuous variations
in tongue rolling in man and recording the result as histograms.
Questions:
Classwork: Fill in the blanks (i-xv), True and false (ii-v, vii, ix, x), Multiple choice questions (ii-iii, vi-xii)
Homework: Short questions (i-xvii), Extensive questions (i-viii, xii, xiii, xvii-xix)

CHAPTER 23: BIOTECHNOLOGY
Cloning of a gene; Recombinant DNA technology, How to get a gene, Molecular Scissors: Restriction endonucleases, Molecular carrier: Vector, Recombinant DNA, Expression of the Recombinant DNA, The polymerase chain reaction, DNA analyzing, Gene sequencing, Biotechnology products: Transgenic bacteria, Transgenic animals, Transgenic plants, Gene therapy, Genetic engineering of plants (Pg. 202-218)
Practicals: No practical
Questions:
Classwork: Fill in the blanks (i-v), Multiple choice questions (i-vi)
Homework: Short questions (i, iii), Extensive questions (i, iii-v)

CHAPTER 24: EVOLUTION
Introduction, Evolution from prokaryotes to eukaryotes, Charles Darwin, Neo-Darwinism, Evidences of evolution, Population, gene pool, allele and genotype frequencies, Factors affecting gene frequency (Pg.222-232)
Practicals: No practical
Questions:
Classwork: Fill in the blanks (i-vii, ix, x, xiii-xv), Multiple choice questions (ii-iv, vii)
Homework: Short questions (i-vii), Extensive questions (iii-v)

CHAPTER 25: ECOSYSTEM
Ecosystem, Biosphere, Components of ecosystem, Food chain, Food web, Predation and its significance, Parasitism and its significance, Symbiosis, Mutualism, Commensalism, The Nitrogen cycle (Pg. 235-245)
Practicals:
1. Investigation of food chain and food web of a pond ecosystem.
2. Sampling of grassland community by Quadrat method.
Questions:
Classwork: Fill in the blanks (i), True and false (ii, v), Multiple choice questions (i-iii)
Homework: Short questions (i-ii), Extensive questions (i-iv)

CHAPTER 26: SOME MAJOR ECOSYSTEM
Freshwater lakes, Divisions of terrestrial ecosystem, Some major ecosystems in Pakistan, Temperate deciduous forests, Coniferous alpine and boreal forests, Grass land ecosystem, Desert ecosystem (Pg. 251-260)
Practicals: No practical
Questions:
Classwork: Fill in the blanks (No), Multiple choice questions (iii, iv)
Homework: Short questions (iii, v), Extensive questions (ii, iv)

CHAPTER 27: MAN AND HIS ENVIRONMENT

Renewable and non-renewable resources (excluding the subtopic “Renewable resources”), Degradation and depletion of resources, Deforestation and afforestation, Importance of forests, Ozone layer depletion, Greenhouse effect, Acid rain, Water pollution, Eutrophication (Pg. 264 -275)

Practicals: No practical

Questions:

Classwork: Fill in the blanks (i, ii, v), Multiple choice questions (No)

Homework: Short questions (i-iii, v-viii), Extensive questions (i, iii-v)

---

COMPUTER SCIENCE-12

UNIT 1: DATA BASICS

Overview (Pg.1, 2), Traditional File System (Pg. 2-4), Databases (Pg.4-8), Database Management System (Objectives of Database Management System, Features of a DBMS only) (Pg. 8, 10)

Classwork: Q.1 (i- x) (Pg. 11), Q.2 (Pg. 11), Q.3 (Pg. 12), Q.5, 6, 8, 9, 12 (Pg.12)

Homework: Q. 7, 11 (Pg. 12)

UNIT 2: BASIC CONCEPTS AND TERMINOLOGY OF DATABASES

Overview (Pg.13-15), Attributes, Rows and Tables (Pg.15, 16), Relation or Table (Pg.16-18), Keys (Pg. 19-20), The User (Pg. 20)

Classwork: Q. 1(Pg. 21), Q.2 (Pg. 21, 22), Q.3(ii- vii) (Pg. 22), Q.6, 8 (Pg.22)

Homework: Q. 4, 7 (Pg. 22)

UNIT 3: DATABASE DESIGN PROCESS

Overview (Pg. 23), Data Modeling (Pg. 23-26), Database Design (Pg.27-31), Implementation (Pg. 31)

Classwork: Q.1, 2, 3 (Pg. 32, 33), Q. 4, 5, 6, 10, 12 (Pg.33-34)

Homework: Q. 7, 8, 9, 11 (Pg. 34)

UNIT 4: DATA INTEGRITY AND NORMALIZATION

Overview (Pg. 35), Data Integrity (Pg. 35), Normalization (Pg. 35- 44)

Classwork: Q.1, 2, 3(Pg. 45- 46) Q.4, 6, 9, 11, 12, 15 (Pg. 46)

Homework: Q. 5, 7, 8, 10, 13, 14 (Pg. 12)

UNIT 5: INTRODUCTION TO MICROSOFT ACCESS

Overview (Pg.47-48), Creating New Database (Pg. 48), Create Database Using the Database Wizard (Pg.49), Opening Existing Database (Pg. 50), Existing Microsoft Access (Pg. 51), Database Objects (Pg. 54- 56)

Classwork: Q.1 (ii-viii ) (Pg. 57), Q.2(i, ii, iii, vi) (Pg. 57), Q.4, 10, 11 (Pg. 58)

Homework: Q. 4, 12 (Pg. 58)
UNIT 6: TABLE AND QUERY
Overview (Pg.59-60), Access IDE (Pg. 61), Starting Microsoft Access (Pg.61), Table Creation (Pg. 63-74), Table Relationships (Pg.79-82), Introduction to Queries (Pg. 84-93), Performance Calculation in a Query (Pg. 94)
Classwork: Q.1 (iii, vi, vii, ix, xi-xiv) (Pg. 95), Q.2(ii, iii, iv, vi, vii, ix) (Pg. 96), Q.3(i-vii) (Pg. 97), Q.4, 6, 8, 11, 12, 15 (Pg.97- 98)
Homework: Q. 7, 9, 13, 14, 18 (Pg. 97-98)

UNIT 7: MICROSOFT ACCESS FORMS AND REPORTS
Overview (Pg.99-103), Reports (Pg. 118-126)
Classwork: Q.1 (i, ii, iii, viii- x) (Pg. 129), Q.2(i, vi, v, vii, viii, x) (Pg. 129-130), Q.5 (Pg.130)
Homework: Q. 4, 10 (Pg. 130)

UNIT 8: GETTING STARTED WITH C
Overview (Pg. 131), Developing a Program (A Stepwise Approach) (Pg. 131- 135), Basic Structure of a C Program (Pg. 136-139), Common Programming Errors (Pg.139-140), Programming Languages (Pg. 140- 141)
Classwork: Q.1, 2, 3 (Pg. 142- 143), Q.4, 5, 6, 9, 11, 12 (Pg. 144)
Homework: Q. 7, 8, 10, 13 (Pg. 144)

UNIT 9: ELEMENTS OF C
Overview (Pg. 145), Keywords (Pg. 146-148), Constants (Pg.149), Data Types (Pg. 149-152), Operators in C (Pg.152-157)
Classwork: Q.1, 2, 3 (Pg. 160- 161), Q.4, 7, 8, 10, 13, 14 (Pg.161- 162)
Homework: Q. 5, 6, 9, 11, 12 (Pg. 161-162)

UNIT 10: INPUT/ OUTPUT
Overview (Pg.163-168), Scanf Function (Pg. 169-170), Character Input (Pg.170-171)
Classwork: Q.1, 2, 3 (Pg. 172- 173), Q.7, 8, 10, 12 (Pg.173-174)
Homework: Q. 5, 6, 11 (Pg. 173-174)

UNIT 11: DECISION CONSTRUCTS
Overview (Pg.175-176), If Statement (Pg. 176-184), Use of Logical Operators (Pg.184-185), Conditional Operator (Pg. 187)
Classwork: Q.1 (i- vi, ix, x) (Pg. 190), Q.2(i- iii, vi-viii, x) (Pg. 190), Q.7, 9 (Pg.191- 192)
Homework: Q. 3, 5, 11 (Pg. 191-192)

UNIT 12: LOOP CONSTRUCTS
Overview (Pg.193), While Statement (Pg. 193-195) For Statement (Pg. 197-198), Nested Loop (Pg. 198-202)
Classwork: Q.1 (i- ix) (Pg. 203), Q.2(iv- x) (Pg. 203), Q.4, 5, 7, 11, 13 (Pg.204- 206)
Homework: Q. 6, 9, 10, 14 (Pg. 204-206)

UNIT 13: FUNCTIONS IN C
Overview (Pg.207-208), Types of Functions (Pg. 208-209), Writing Functions in C (Pg. 209-210), Function Prototype (Pg. 210-211), Calling a Function (Pg.211), Local Variables
and Their Scope (Pg. 211-212), Global Variables and their Scope (Pg. 112-114)

**Classwork:** Q.1, 2, 3 (Pg. 219-220), Q. 7, 8, 9, 11, 12 (Pg.221- 222)

**Homework:** Q. 4, 6, 10, 14 (Pg. 221-222)

**UNIT 14: FILE HANDLING IN C**

Overview (Pg.223), The Stream (Pg. 223), Newline and EOF Marker (Pg. 223-224),
Opening a file (Pg. 224-227), Closing a File (Pg.227-229)

**Classwork:** Q.1 (i-v) (Pg. 238), Q.2(i, iv) (Pg. 238), Q.3(i- iv, ix, x) (Pg. 239), Q.4 (Pg.239)

**Homework:** Q. 5 (Pg. 239)

**LIST OF PRACTICALS GRADE XII:**

**MS-ACCESS**

1. Creating different tables and assign primary key
2. Create relationship between tables
3. Create reports using wizards and design view

**C-LANGUAGE**

4. Writing a program which prints a text of 4 lines consisting of characters, integer
values and floating values using printf statement.
5. Writing a program that read and print the data using the Escape Sequence (Asking
the name, age, height and gender of the student using scan and print
statement ).
6. Writing a program, which uses operators ( calculate the area of triangle, volume
of spheres and arrange the resultant values in ascending order).
7. Writing a program which uses ‘for’ loop statement, ( Generate the multiplication
table from 2 to 20)
8. Writing a program which uses ‘While’ loop and Nested ‘while’ loop, (Use ‘for’
loop and continue the process in ‘while’ loop satisfying this condition).
9. Finding the factorial of N using ‘while’ loop, read the value of N using scanf and
print the factorial of various N.
10. Draw a checkerboard and print it using if-else statement, and extend the program
using Nested if-else.
11. Writing a function, which generates factorial of N and calls this function in the
‘main’ program.
12. Writing a program which uses multiple arguments in a function. (Develop a
user-defined function to generate a rectangle. Use the function for passing
arguments to draw different sizes of rectangles and squares).

**Note:**

Objective and subjective type should be given from the retained topics and
exercise questions.
پیامدی برای کتابفروشی انجام، کتاب، کتاب فروش، لامبورگینی