

# 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.

## اردو جماعت - 12

درسی کتاب کے اسباق

(الف) حصہ نثر

1- مناقب عمر بن عبدالعزیزؓ : کلاس ورک : سوال نمبر ۱ (جز الف، ب)، ۲، ۳ (جز الف، ب)

ہوم ورک : سوال نمبر ۱ (جز ج، د)، ۳، ۴ (جز ج)



## (ج) حصہ غزل

1- خواجہ میر درد کام مردوں کے ہیں، سو وہی کر جاتے ہیں

کلاس ورک: سوال نمبر ۱، ۲، ۳، ۶ (صرف پہلی غزل کے حوالے سے)، ۱۰ (جز الف)

ہوم ورک: سوال نمبر ۷ (جز الف، ب، ج)، ۸، ۹ (جز الف، ب، ج، د، ہ)

2- غلام ہمدانی مصحفی دنیا میں جب تلک کہ میں اندوہ گیس رہا

کلاس ورک: سوال نمبر ۱ (پہلی غزل کے حوالے سے)، ۲، ۳ (پہلی چھ ترے ایکب)

ہوم ورک: سوال نمبر ۶ (پہلے چھ الفاظ)، ۷

3- مرزا غالب بسکہ دشوار ہے ہر کام کا آساں ہونا

کلاس ورک: سوال نمبر ۱ (پہلی غزل کے حوالے سے)، ۲، ۳

ہوم ورک: سوال نمبر ۷، ۸ (جز الف)، ۹ (پہلی غزل کے حوالے سے)

4- علامہ اقبالؒ جب عشق سکھاتا ہے آدابِ خود آگاہی

کلاس ورک: سوال نمبر ۱، ۳، ۴، ۵، ۶

ہوم ورک: سوال نمبر ۷، ۱۱ (پہلی چھ ترے ایکب)، ۱۲ (پہلے تین الفاظ)، ۱۳

5- علامہ اقبالؒ نہ تخت و تاج میں، نہ لشکر و سپاہ میں ہے

کلاس ورک: سوال نمبر ۸، ۹، ۱۰، ۱۱ (آخری چار ترے ایکب)

ہوم ورک: سوال نمبر ۲، ۱۲ (آخری چار الفاظ)

6- ناصر کاظمی دل میں اک لہری اٹھی ہے ابھی

کلاس ورک: سوال نمبر ۱ (جز الف، ب، د)، ۴

ہوم ورک: سوال نمبر ۱ (جز ہ، و)

7- تابش دہلوی سکوں درکار ہے لیکن سکوں حاصل نہیں ہوتا

کلاس ورک: سوال نمبر ۱، ۳، ۴

ہوم ورک: سوال نمبر ۲، ۵

## قواعد و انشا

### (الف) مضمون نگاری

(i) محسن انسانیت (عائتہ اللہ تعالیٰ علیہ وسلم) علیہ وآلہ و صحابہ وسلم

- (ii) اتحادِ عالمِ اسلام
- (iii) کرونا وائرس اور ہماری ذمہ داریاں
- (iv) تعلیم نسواں
- (v) والدین کا احترام
- (vi) شجر کاری کی ضرورت و اہمیت
- (vii) ماحولیاتی آلودگی: اسباب اور تدارک
- (viii) بچپن ایک سنہری دور
- (ix) کشمیر ہماری شہ رگ
- (x) میر انصب العین
- (xi) اردو زبان: ضرورت و اہمیت

### (ب) خطوط نویسی

- (i) دوست کے نام خط لکھ کر اس کی والدہ کی وفات پر اظہارِ تعزیت کیجیے۔
- (ii) چھوٹے بھائی کے نام خط لکھیں جس میں پڑھائی کے ساتھ ساتھ ہم نصابی سرگرمیوں میں بھی حصہ لینے کی تلقین کی گئی ہو۔
- (iii) اخبار کے مدیر کے نام خط لکھ کر ٹریفک حادثات کی روک تھام کے لیے تجاویز لکھیں۔
- (iv) معاشرے میں بڑھتے ہوئے سٹریٹ کرائم کے خاتمے کے لیے ڈپٹی کمشنر کے نام خط لکھیں۔
- (v) دوست کے نام خط لکھیں جس میں اسے بتائیں کہ جسمانی ورزش بیماریوں سے نجات کا ذریعہ ہے۔
- (vi) تاریخی مقام کی سیر کے احوال پر مبنی، اپنے دوست کے نام خط لکھیں۔
- (vii) اخبار کے مدیر کے نام خط لکھیں، جس میں مہنگائی اور اس کے مسائل پر اپنے خیالات کا اظہار کیجیے۔
- (viii) اپنے دوست کے نام خط لکھیں جس میں ایشیا میں ملاوٹ پر اپنے تاثرات کا اظہار کیجیے۔
- (ix) اخبار کے مدیر کے نام خط لکھیں جس میں منشیات کے بڑھتے رجحان کی طرف توجہ دلائی گئی ہو۔

☆ اساتذہ کرام طلبہ کو درج ذیل کی تفہیم/مشق کروائیں اور اعادہ کے لیے ہوم ورک بھی دیں۔

(ج) مطابقت اور حروف کا درست استعمال

(د) رموزِ اوقاف

(ه) امدادی افعال

### باب 1: اسلامی جمہوریہ پاکستان کا قیام

نظریہ پاکستان، قائد اعظم اور نظریہ پاکستان، علامہ محمد اقبال اور نظریہ پاکستان، نظریہ پاکستان کے اجزائے ترکیبی (عقائد و عبادات، جمہوری اقدار کا فروغ، معاشرتی انصاف اور مساوات، شہریوں کے حقوق و فرائض، اخوت و بھائی چارہ)۔ پاکستان۔ مسلمانان برصغیر کی جدوجہد کا نتیجہ، تحریک علی گڑھ، سر سید احمد خاں اور تحریک علی گڑھ، تعلیمی خدمات، ادبی خدمات، معاشرتی و معاشی خدمات، سیاسی خدمات۔ آل انڈیا مسلم لیگ کا قیام، مسلم لیگ کے قیام کے اسباب، مسلم لیگ کے قیام کے مقاصد۔ مطالبہ پاکستان کے محرکات، قرارداد پاکستان، قرارداد کاپس منظر، قائد اعظم کا خطبہ صدارت۔

کلاس ورک: کثیر الانتخابی سوالات: (x,v,iv,ii) مختصر سوالات: (x,ix,v,iv,i)

ہوم ورک: تفصیلی سوالات: سوال 1، 2، 3، 4، 7

### باب 2: اسلامی جمہوریہ پاکستان کی ابتدائی مشکلات

ابتدائی مشکلات (ریڈ کلف ایوارڈ کی نا انصافیاں، انتظامی مشکلات، مہاجرین کی آمد، اثاثوں کی تقسیم، فوج کی تقسیم، دریائی پانی کا مسئلہ، ریاستوں کا تنازع)۔ قومی استحکام

کلاس ورک: کثیر الانتخابی سوالات: (viii,vii,vi,v,iv,iii,ii) مختصر سوالات: (x,vi,v,iv,iii)

ہوم ورک: تفصیلی سوالات: سوال 1، 2

### باب 3: اسلامی جمہوریہ پاکستان کا جغرافیہ

پاکستان کا محل وقوع، محل وقوع کی اہمیت (خلیج فارس سے ملحقہ مسلم ممالک، افغانستان، وسطی ایشیائی ممالک، چین اور بھارت)۔ پاکستان کی آب و ہوا، آب و ہوا کے لحاظ سے پاکستان کے علاقے، بارش کا موسم، آب و ہوا کے انسانی زندگی پر اثرات۔

کلاس ورک: کثیر الانتخابی سوالات: (ix,i) مختصر سوالات: (viii,vi,v)

ہوم ورک: تفصیلی سوالات: سوال 1، 4، 5

### باب 4: پاکستان کو اسلامی جمہوریہ بنانے کے اقدامات

قرارداد مقاصد، دستور پاکستان 1973ء، پاکستان میں نفاذ اسلام کے لیے اقدامات، 1973ء کے آئین میں شہریوں کے حقوق، 1973ء کے آئین میں شہریوں کے فرائض، انسانی حقوق، انسانی حقوق کی خصوصیات، خطبہ حجۃ الوداع اور انسانی حقوق، آخری خطبہ، خلاصہ

کلاس ورک: کثیر الانتخابی سوالات: (ix,vii,iii,ii,i) مختصر سوالات: (xiii,vii,vi,v,i)

ہوم ورک: تفصیلی سوالات: سوال 1، 2، 3، 4

### باب 5: پاکستان کا حکومتی ڈھانچہ اور اچھا نظام حکومت

وفاقی حکومت اور دیگر ادارے، مجلس شوریٰ (پارلیمنٹ) کے فرائض، وفاقی انتظامیہ، اہم عہدے دار (صدر پاکستان، وزیر اعظم، وفاقی کابینہ، وفاقی وزیر، وزیر مملکت، سیکرٹری، ایڈیشنل سیکرٹری، جوائنٹ سیکرٹری، ڈپٹی سیکرٹری، سیکشن آفیسر)، سپریم کورٹ،

سپریم کورٹ کے اختیارات، صوبائی حکومت، صوبائی گورنر، وزیر اعلیٰ، کابینہ، چیف سیکرٹری، سیکرٹری، ایڈیشنل سیکرٹری، ڈپٹی سیکرٹری، سیکشن آفیسر، صوبائی مقننہ، صوبائی مقننہ کے اختیارات، صوبائی عدلیہ، ہائی کورٹ کے اختیارات، اچھا نظام حکومت اور اسلام، حضرت عمر رضی اللہ تعالیٰ عنہ کا نظام حکومت، حضرت عمر رضی اللہ تعالیٰ عنہ کے دور کی انتظامیہ کی خصوصیات

کلاس ورک: کثیر الانتخابی سوالات: (vi, v, iv, iii, ii, i) مختصر سوالات: (xiii, vii, vi, v, iv, iii, ii, i)

ہوم ورک: تفصیلی سوالات: 7, 5, 4, 2, 1

### باب 6: اسلامی جمہوریہ پاکستان کی ثقافت

ثقافت (کلچر) کا مفہوم اور اہمیت، قدیم وادی سندھ کی تہذیب و ثقافت، پاکستانی ثقافت کی نمایاں خصوصیات (مخلوط ثقافت، مذہبی ہم آہنگی، لباس، معاشرتی قدریں، غذائیں، رسم و رواج، میلے اور عرس، کھیل، مختلف فنون، تہوار)۔

کلاس ورک: کثیر الانتخابی سوالات: (x, vii, vi, v) مختصر سوالات: (xi, viii, vii, vi, v, iv, iii, ii, i)

ہوم ورک: تفصیلی سوالات: سوال 4, 2, 1

### باب 7: اسلامی جمہوریہ پاکستان کی زبانیں

قومی رابطے کی زبان — اردو، پاکستان کی علاقائی زبانیں (پنجابی، سندھی، پشتو، بلوچی، کشمیری)

کلاس ورک: کثیر الانتخابی سوالات: مکمل مختصر سوالات: مکمل

ہوم ورک: تفصیلی سوالات: مکمل

### باب 8: قومی یکجہتی اور خوشحالی

تعارف، قومی یکجہتی اور سالمیت (تعریف، مشترکہ مذہب، مشترکہ جغرافیائی حدود، مشترکہ زبان، مشترکہ نسل، مشترکہ روایات، جمہوریت)۔ قومی یکجہتی و سالمیت کی اہمیت (خوشحالی، امن کا قیام، باہمی تعاون، عوام کی بھلائی، مضبوط انتظامیہ کا قیام، وقت اور دولت کے ضیاع سے محفوظ)

کلاس ورک: کثیر الانتخابی سوالات: (iv, ii, i) مختصر سوالات: (xi, vii, v, iv, iii, ii, i)

ہوم ورک: تفصیلی سوالات: 4, 1

### باب 9: اسلامی جمہوریہ پاکستان میں معاشی منصوبہ بندی اور ترقی

معاشی منصوبہ بندی کی اہمیت، زرعی ترقی، صنعتی ترقی، تجارت اور کامرس، قدرتی وسائل، قدرتی ذرائع کا تحفظ، انفارمیشن ٹیکنالوجی۔

کلاس ورک: کثیر الانتخابی سوالات: (viii, vii, v, iii, i) مختصر سوالات: (viii, vii, vi, v, iv, iii, ii)

ہوم ورک: تفصیلی سوالات: 7, 5, 3, 2, 1

### باب 10: تحفظ نسواں

اسلام میں خواتین کے حقوق، خواتین کے کام کرنے کا حق، پاکستان کی خواتین، خواتین کے خلاف تشدد کی روک تھام کے لیے حکومت پنجاب کے اقدامات، خواتین کو کام کرنے کی جگہ پر ہراساں کرنے کے خلاف حفاظت کا قانون 2010ء، پنجاب میں کم عمری کی شادی پر پابندی کا ایکٹ 2015ء، حکومت پنجاب تحفظ نسواں ایکٹ 2016ء۔

کلاس ورک: کثیر الانتخابی سوالات: (v,iv,iii,i) مختصر سوالات: (v,iv,iii,i)  
ہوم ورک: تفصیلی سوالات: 3,2,1

## باب 11: اسلامی جمہوریہ پاکستان کی خارجہ پالیسی

خارجہ پالیسی کی تعریف، پاکستان کی خارجہ پالیسی کے بنیادی اصول، پاکستان کی خارجہ پالیسی کے مقاصد، پاکستان کی خارجہ پالیسی کی تشکیل کے ذرائع، پاکستان اور عوامی جمہوریہ چین، پاکستان اور افغانستان، پاکستان اور ایران، پاکستان اور سعودی عرب۔

کلاس ورک: کثیر الانتخابی سوالات: (ix,vii,iv,iii) مختصر سوالات: (xiv,xiii,ix,viii,v,iv,iii,ii,i)

ہوم ورک: تفصیلی سوالات: 5,4,2,1

نوٹ: کلاس ورک اور ہوم ورک میں دیے گئے سوالات کا بنیادی مقصد طلبہ کو سوالوں کی نوعیت سے آگاہ کرنا ہے۔

اس سے ہرگز یہ مراد نہ لی جائے کہ پیپر میں یہی سوال آئیں گے کیونکہ پیپر بنانے والا کتاب/تسریع التعلم (ALP) میں موجود مواد میں سے پیپر یا سوالات بنا سکتا ہے۔

## PHYSICS-12

### CHAPTER 12: ELECTROSTATIC

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), Avometer-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)

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**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)

**Classwork:** Questions: 19.5, 19.6, 19.8, 19.9, 19.10, 19.11, 19.12, 19.13, 19.15, 19.18, 19.20, 19.22, 19.24 (Pg. 199,200), Problems: 19.5, 19.6, 19.8, 19.10 (Pg. 201)

**Homework:** Questions: 19.7, 19.14, 19.19, 19.23, 19.25, 19.26 (Pg. 200), Problem: 19.3, 19.4, 19.7, 19.9 (Pg. 201)

### **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)

**Classwork:** Questions: 21.3, 21.5, 21.6, 21.7, 21.9, 21.10, 21.11, 21.15, 21.17 (Pg. 258), Problems: 21.1, 21.3, 21.4, 21.6, 21.7, 21.8 (Pg. 259)

**Homework:** Questions: 21.2, 21.4, 21.8, 21.12, 21.13, 21.14, 21.16 (Pg. 258), Problems: 21.2, 21.5 (Pg. 259)

### **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.
9. Measure D.C and A.C voltage by cathode ray oscilloscope.
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.

## CHEMISTRY-12

### CHAPTER 1: PERIODIC CLASSIFICATION OF ELEMENTS AND PERIODICITY

TOPIC: (1.2, 1.3, 1.5).

The modern Periodic Table, Periodic Trends in Physical Properties (Pg. 2-11). The Position of Hydrogen (Pg. 14- 15).

**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).

**Homework:** Q.5, Q.6, Q.7, Q.8, Q.9, Q.10, Q.11, Q.13.

### 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.

**Homework:** Q.5, Q.6, Q.7, Q.8, Q.13.

### 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).

Introduction, Some Features of Organic Compounds (118-119). Cracking of Petroleum, Reforming, Classifications of Organic Compounds, Functional Group, Hybridization of Orbitals and the Shapes of Molecules, Isomerism (Pg. 122-133).

**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.

**Homework:** Q.4, Q.5, Q.9, Q.10, Q.11, Q.13.

### **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: ALCOHOLS, 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**

TOPIC: (13.1, 13.2, 13.3, 13.4, 13.5, 13.6, 13.7).

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.
- 2 Detection of elements C, H, N, S and halogens in organic compounds.
- 3 Detection of functional group.
- 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,iii,iv,viii,ix), Q.3(iii-v,vii,x-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), Exercise 2.6: 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,viii,xii,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,vii,viii), Q.2(iii,iv,vi,vii,viii,x,xi,xiii,xiv), Q.3(v), Exercise 2.7: Q.1(iii), Q.3(v), Q.4(i,iii), 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), Example 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,ii), 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,xv,xix,xxi), Q.2(ii,iv,vi), Q.3,Q.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:** Example 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,ii), 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:

Q.2(iii,vii,x), Q.4,5, Exercise 6.7: Q.1(iii), Q.2(i), Q.3(iii), Q.6, Q.8(i,iii), Exercise 6.8: Q.1(ii,iv), Q.2(iii), Q.3(iv), Q.4(iii), Exercise 6.9, Q.1(iv,vi,vii), Q.2(i), Q.3(iii)

## UNIT 7: VECTORS

**Classwork:** Example 2 & 3: (pg.331), Exercise 7.1: Q.1(i), Q.2(iii), 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.



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