ANNEXURE-B-VI

NO.SO(CURRICULUM)SELD/CONDENSE-SYLLABUS /2020
GOVERNMENT OF SINDH
SCHOOL EDUCATION & LITERACY DEPARTMENT
Karachi, the dated October, 2020

COMPUTER SCIENCE - XII

S#	Topics/ Sub Topic
1	1. Using IDE 2. Writing a C program 3. C Program format and Basic Structure. 4. Compile, check errors, Run and see result. 5. Use printf() function and "Format Specifiers"
2	1. Variables (Types, Defining and declaring, initializing), Constants 2. Input/Output (printf(), scanf(), getche(),Format specifiers, Escape sequences) 3. Operators (Arithmetic operator (+, -, *, /, %), Arithmetic assignment operator (+=, -=, *=, /=, %=), (increment and decrement operators ++,--), (Relational operators (<,<=,>,>=,==,!=), operators precedence 4. Comments /* */
3	1. Loops ("for" loop, "while" loop, "do while" loop, nested loops. 2. "break" and "continue" statements.
4	1. "if" statement 2. "if-else" statement 3. Nested "if" and "else" 4. Logical operators OR (||) AND (&&) NOT (!) 5. Switch statement ("default" and "break")
5	1. Function (define and need), structure or format of functions (Function definition, calling, prototype or declaration). 2. Sending and returning values from functions, return statement. 3. Passing variables and constants as arguments. 4. Argument variables (parameters) , local (automatic) and global (external) variables.
6	1. Arrays, defining and initializing arrays. 2. Referring to individual elements of an array 3. Strings definition (string constants and variables), initializing strings. 4. String functions

These topics have been taken from the book '*The Waite Group's Turbo C Programming for the PC*' by Robert Lafore, according to the Syllabus outline of BISE.

ANNEXURE-B-VII

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CHEMISTRY - XII

Chapter	TOPIC
1. Introduction to Fundamental Concepts of Chemistry	
1.6	Modern Periodic Law-Periodic Table Based on Moseley's contribution
1.7	Classification and Long form of Periodic Table on the basis of Electronic configuration
1.8	Types of elements based on Electronic configuration
2. Hydrogen	
2.2	Position of hydrogen in the Periodic table
2.4	Atomic Hydrogen
2.5	Binary Compounds of Hydrogen
3. S-Block Elements	
3.1	Introduction
3.2	Group trends in alkali and alkaline earth metals
3.3	Chemical properties of S-blocks elements
3.4	Occurrence and Extraction of Metals
4. P-Block Elements	
4.1	Introduction
4.3	Metallurgy of Metals
4.6	Nitric Acid (HNO_3)
4.10	Chlorine
5. d- Block Elements (Transition Elements)	
5.1	Introduction
5.3	Generals Characteristics
5.6	Copper Sulphate ($CuSO_45H_2O$)
5.7	Potassium Chromate (K_2CrO_4)
5.10	Corrosion and its prevention
6. Introduction to Organic Chemistry	
6.1	Natural sources of organic compounds
6.4	Polymerization
6.5	Classification of organic compounds or Types of organic compounds
6.6	Homologous series
6.7	Isomerism
6.8	Nomenclature
7. Chemistry of Hydrocarbons	
7.1	Open chain and closed chain hydrocarbons
7.3	Chemistry of Ethane
7.4	Chemistry of Ethene
7.5	Chemistry of Ethyne
7.6	Benzene
7.7	The Molecular orbital treatment of Benzene

8. Alkyl Halides	
8.1	Classification of alkyl Halides
8.2	Nomenclature
8.4	Mechanism of Nucleophilic substitution Reactions
9. Carbon Compounds with Oxygen Containing Functional Group	
9.1	Alcohols
9.4	Aldehydes and Ketones
10. Chemistry of Life	
10.1	Definition and Introduction
10.3	Carbohydrates
10.4	Amino acids
10.7	Enzymes
11. Chemical Industries in Pakistan	
11.1	Fertilizers
11.3	Glass
11.5	Plastics

ANNEXURE-B-VIII

NO.SO(CURRICULUM)SELD/CONDENSE-SYLLABUS /2020
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MATHEMATICS - XII

Chapter	Topics & Exercises
Chapter -1: Function and Limits	1.25 Meaning of the phrase "x tends to a" 1.6 Limit of function Exercise 1.6 1.27 Limit as x tends to ±∞ Exercise 1.7
Chapter -2: The Straight Line	2.1 Cartesian coordinates system 2.2 Distance between two given points Exercise 2.1 2.1 Division of a given line segment in a given ratio Exercise 2.2 2.5 Curves and equations 2.6 Slope (or gradient) of a line 2.7 Slope of a line joining two given points 2.8 Condition for three points to be collinear 2.9 Parallel perpendicular lines 2.10 Angle from one line to another in the slope Exercise 2.4 2.11 Lines parallel to the axes of coordinates various form of an equation of a line from another 2.12 Various forms of equation of straight line 2.13 Deduction of one form of an equation of a line from another Exercise 2.5
Chapter -3: The General Equation of straight line	3.1 The general linear equation 3.2 Angle between two lines from l_2 to l_1 in the general form 3.3 point of intersection of two straight lines 3.4 Concurrency of three lines 3.5 Equation of lines in the matrix form 3.6 Lines through the intersection of two given lines Exercise 3.1 3.7 Position of a point with respect to a given straight line 3.8 Distance of a point from a line 3.9 Area of triangle, Exercise 3.2
Chapter -4: Differentiability	4.1 Derivatives of a function at a point Exercise 4.1 4.2 Composite function Exercise 4.2 4.3 Implicit function Exercise 4.3 4.4 Paramedic function 4.5 Higher derivative Exercise 4.4
Chapter -5: Application of Differential calculus	5.4 Increasing and decreasing function Exercise 5.3
Chapter -6 Antiderivatives	6.1 Antiderivatives or Integration Exercise 6.1, 6.2 6.2 Integration by substitution Exercise 6.3, 6.5 6.4 Integration by parts Exercise 6.7 6. 6 Integration of rational functions Exercise 6.9
Chapter -7: Circle	7.1 Introduction 7.2 Equation of circle 7.3 Equation of circle with line segment and its diameter Exercise 7.1
Chapter -8: Parabola Ellipse & Hyperbola	8.5 Equation of chords 8.6 Equation of Tangents and normal to conics 8.7 two tangent and condition of tendency to conics Exercise 8.4

Chapter -9: Vectors	9.9 The scalar and vector products of two vectors Exercise 9.5 9.10 Scalar product of three vectors Exercise 9.6 9.11 Application of vectors mechanics Exercise 9.7

ANNEXURE-B-IX

NO.SO(CURRICULUM)SELD/CONDENSE-SYLLABUS /2020
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PHYSICS - XII

Chapter name	Topics
11.Heat	1- Thermal expansion 2- Linear thermal expansion Volume expansion 4- Boyle's law 5- Charle's law 6- General gas equation 7- Specific heat capacity 8- Molar specific heat 9- First law of thermodynamics 10- Application of first law of thermodynamics 11- Second law of thermodynamics 12- The Carnot engine
12.Electrostatics	1- Coulomb's law 2- Intensity of electric field 3- Gauss's law 4- Electric potential 5- Parallel plate Capacitor & combination of capacitors
13.Current electricity	1. Electric current 2. Electric resistance & Ohm's law 3. Combination of resistors 4. Electromotive force
14.Magnetism & Electromagnetism	1. Magnetic field due to current 2. Force on a current carrying conductor in a uniform magnetic field 3. Ampere's law 4. Electromagnetic induction 5. Laws of electromagnetic induction (Faraday's laws) 6. Self-induction 7- Mutual induction 8- Transformer
15.Electrical measuring instruments	1. The moving coil galvanometer 2. The ammeter The Voltmeter
16.Electromagnetic waves & Electronics	1- Amplitude Modulation 2- Frequency Modulation 3- Transistor
17.Advent of modern Physics	1. Frame of reference 2. The principle of relativity 3. Postulates & consequences of Special theory of relativity 4. The Photoelectric effect 5. The Compton effects 6. Pair production & annihilation of matter
18.The atomic spectra	1. Bohr's model for Hydrogen atom 2. X-ray spectra 3. Introduction to laser & its principles
19.The atomic nucleus	1. Radioactivity & Nuclear changes 2. The law of radioactive decay 3. The half period or the half-life of the radioactive nuclide 4. Nuclear fission 5. Nuclear fusion
20.Nuclear radiations	1. Wilson cloud chamber 2. Geiger Counter
GUIDELINE FOR TEACHER FOR EFFECTIVE TEACHING: The above enlisted topics their relevant practical work and problems are included in the course	

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NOTIFICATION

NO.SO(CURRICULUM)SELD/CONDENSE-SYLLABUS /2020 :In compliance with the decision of Sindh Curriculum Council and with the approval of Competent Authority i.e Minister for Education & Literacy Department, Government of Sindh the reduced syllabus for HSC Grades XI-XII is hereby notified for the academic year 2020-2021, jointly designed by the Directorate of Curriculum, Assessment & Research (DCAR) Sindh, Directorates of School Education and Boards of Intermediate and Secondary Education under the supervision and guidance of the working group on condensed syllabus:

I. The condense syllabus of HSC Part-I (grade-XI) (1- English, 2- Asan Urdu 3-Urdu Compulsory, 4- Islamiat, 5-Ethics 6- Biology, 7-Computer Science 8- Chemistry, 9- Mathematics and 10- Physics) annexed at Annexure-A-I to X.

II. The condense syllabus of HSC Part-II (grade-XII) (1-English, 2- Sindhi Compulsory 3-Urdu Compulsory, 4-Pakistan Study 5-Biology 6-Computer Science 7- Chemistry 8- Mathematics and 9- Physics) annexed at Annexure-B-I to IX.

III. The Annual Examination of HSC Part-I&II, 2021 of the boards will be conducted from reduced syllabus vide Annexure-A- I to X for HSC Part-I and Annexure-B-I to IX for HSC Part-II.

AHMED BAKHSH NAREJO
SECRETARY TO GOVT. OF SINDH

NO.SO(CURRICULUM)SELD/CONDENSE-SYLLABUS /2020: Karachi, the dated October, 2020

A Copy is forwarded for information to:

1. The Principal Secretary to Governor, Sindh Karachi
2. The Principal Secretary to Chief Minister, Sindh Karachi.
3. The Secretary, College Education Department Government of Sindh.
4. The Secretary, Universities &Boards Department Government of Sindh.
5. The Special/Additional Secretary (All) School Education & Literacy, Department, Govt. of Sindh.
6. The Deputy Secretary (Staff) to Chief Secretary, Sindh, Karachi.
7. The Director General Colleges, Sindh, Karachi.
8. Members (All) Steering Committee on Education.
9. The Chairmen (All) Board of Intermediate & Secondary Education with the request for strict implementation.
10. The Director General Inspection & Registration of Private Educational Institutions, Sindh, Karachi with the direction to circulate and ensure strict implementation in the institutions.
11. The Director School Education (P/ES&HS) all, with the direction to circulate and ensure strict implementation in the Schools.
12. The Director, Curriculum, Assessment & Research, Jamshoro.
13. The Additional Director, Teachers Training Institutions, Sindh, Hyderabad.
14. The PS to Minister for Education & Literacy, Sindh.
15. The PS to Secretary School Education & Literacy Department Government of Sindh.
16. The Website.
17. The Office file

SECTION OFFICE (CURRICULUM)
19/10/20

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HSC PART-I

GRADE - XI

CONDENSED COURSE OF ACADEMIC YEAR 2020-21

ANNEXURE-A-I

ENGLISH -XI

Lesson No.	Lesson Name
READING TEXT # 01	Pakistan Zindabad
READING TEXT # 02	Birkenhead Drill
READING TEXT # 03	The United Nations
READING TEXT # 04	My Bank Account
READING TEXT # 08	The Wolves of Cernogratz
READING TEXT # 10	The English Language
READING TEXT # 12	Science and Society
Selections from English Verse (Part-I)	
Poem # 1	Under the Green Wood Tree
Poem # 2	Character of Happy Life
Poem # 05	Lucy Gray
Poem # 7	Abou Ben Adhem
Poem # 10	The Toys
Poem # 11	I have Reached Your Doorsteps
Drama/ Play	
"THE COUNT'S REVENGE"	Introduction of Play "THE COUNT'S REVENGE"
"THE COUNT'S REVENGE"	Characterization of the play
"THE COUNT'S REVENGE	SCENE-1
	SCENE-II
	SCENE-III
	The Story of play, Dueling
	Presentation/Dramatization

Guidelines for Effective Teaching:

- Adopt/implement flexible learning where learning choices may be offered to learners. (references of online resources, e-learning programs, media literature and telecommunication learning material etc.
- Home tasks may be assigned to engage students for practice.
- The Condensed course content need to be well organized/ planned before conducting session/class.
- Teaching & learning may be contextualized keeping in view the environment and resources.
- For development of Language skills especially in English student may be motivated to get assistance from parents, Siblings etc.
- Quick and constructive feedback may be provided to individual students on previous task to further enhance students' skills
- Development of Charts, individual classroom presentation, individual performances may be encouraged during the class.
- Grammar and language activities may be developed according to age and grade level of students. Grammar may be developed as per Board assessment.
- Activities/Exercises Questions at the end of unit may be used for assessing the students' progress according to condensed course during formative or summative assessment.
- A balanced test may be developed in accordance to target language.

ANNEXURE-A-II

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ASAN URDU - XI

نمبر شمار	عنوان / مضمون	مصنف	صفحہ نمبر
۱.	حمد (نظم)	ابو الاثر حفیظ جالندھری	۵
۲.	نبی کریم صلی اللہ علیہ وآلہ وسلم کی ہجرت	علامہ سید سلمان ندوی	۸
۳.	حُبِ وطن (نظم)	مولانا حالی	۱۶
۴.	جیسی کرنی ویسی بھرنی	خواجہ حسن نظامی	۱۹
۵.	ایران کا جاڑا	مولوی محمد حسین آزاد	۲۳
۶.	آدمی نامہ (نظم)	نظیر اکبر آبادی	۲۶
۷.	نصوح کا خواب	از: آغا محمد اشرف	۲۹
۸.	اسلامی حکومت کا امیر سب کا خادم ہوتا ہے	مؤلف	۳۴
۹.	آسمان اور تارے (نظم)	مولوی محمد اسمٰعیل میرٹھی	۳۷
۱۰.	حج اکبر	منشی پریم چند	۴۲
۱۱.	رباعیات (نظم)	انیس ، حالی، اکبر، داغ	۵۰
۱۲.	طالب علموں کے نام سر سیّد کا ایک خط	سر سیّد احمد خان	۶۵
۱۳.	مردِ مجاہد (نظم)	مولوی شفیع الدین نیّر	۶۸
۱۴.	اُردو کی آخری کتاب	پطرس بُخاری	۷۲

جماعت وار تلخیصی کورس (نصاب اُردو کے مطابق) آسان اُردو برائے گیارہویں جماعت

زبان شناسی / قواعد

- مرکب مصادر کو بطور فعل معاون سیکھ سکے ۔
- اصنافِ سُخن کی تعریف کر سکے اور ان میں تمیز کر سکے۔
- علم بیان بدیع کی مجوزہ صنعتوں کی تعریف کر سکے۔
- مثلاً مبالغہ، تکرار، تضاد، تلمیح، تعلیل تشبیہ و استعارہ وغیرہ ۔
- مرکب جملوں کا درست استعمال کر سکے۔
- نظم و نثر میں رموزِ اوقاف کا درست استعمال کر سکے ۔
- کہانی ، انشائیہ یا مضمون وغیرہ لکھ سکے۔
- اسکول یا اس سے باہر کسی رسالے، اخبار اور ویب سائٹ وغیرہ میں اپنے پسندیدہ اسلوب میں تحریر پیش کر سکے۔

ANNEXURE-A-III

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URDU (COMPULSORY) GRADE XI

- زبان شناسی / قواعد:
- (1) اِشتقاق، مشتقات، وصفی اور لغوی، مجازی معنی، سلینگ بول چال اور اصطلاحی معنوں کے حوالے سے لُغت کا استعمال
- (2) مرکب مصادر کو بطور معاون افعال استعمال کرنا (3) متعلق فعل (Model Verb) کی تعریف و استعمال سے آگاہی
- (4) اصناف سخن کی تعریف اور پہچان (5) روداد/ مکالمہ (6) درخواست/ خط (7) تلخیص

ANNEXURE-A-IV

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ISLAMIAT -XI

CHAPTER	CONDENSED CONTENT
باب اول بنیادی عقائد۔	1.اللہ تعالی پر ایمان
	2.رسالت (انبیاء کی خصوصیات۔رسالت محمدی خاتم النبیین صلی اللہ علیہ وعلیٰ آلہ واصحابہ وسلم اور اس کی خصوصیات)
	3. آخرت
باب دوم اسلامی تشخص	1. نماز
	2. روزہ
	3. اللہ تعالی اور رسول حضرت محمد رسول اللہ خاتم النبیین صلی اللہ علیہ وعلیٰ آلہ واصحابہوسلم کی محبت و اطاعت
	4. حقوق العباد
	5. معاشرتی ذمے داریاں
باب سوم اسوہ حضرت محمد رسول اللہ خاتم النبیین صلی اللہ علیہ وعلیٰ آلہ واصحابہوسلم	1. رحمۃ للعالمین
	2. صبر و استقلال
	3. عفوو درگذر
باب چہارم تعارف قرآن و حدیث	1. تعارف قرآن مجید (فضائل قرآن مجید - وحی کیا ہے - نزول قرآن -قرآن مجید کی خوبیاں)
	2. حدیث اور سنت
	3. منتخب آیات (عربی متن بمع ترجمہ و تشریح)
	4. منتخب احادیث(عربی متن بمع ترجمہ و تشریح)

ہدایات برائے اساتذہ (اسلامیات)

- سبق پڑھانے سے پہلے سبق کا خلاصہ بیان کریں تاکہ سبق کے مقاصد کا حصول ممکن ہو ۔
- سبق پڑھاتے ہوئے، الکلمات والتراکیب ، کا ترجمہ اور تشریح ضرور کرے۔
- استاد صاحب قرآنی آیات کا ترجمہ پہلے خود کرے۔ پھر مختلف طلبہ سے باری باری ترجمہ کروایا جائے ۔
- ہر پیراگراف کا مفہوم مختلف طلبہ سے زبانی پوچھا جائے۔ تاکہ طلبہ کو پورا سبق ذہن نشین ہوجائے اور وہ مشق از خود حل کرسکیں۔
- تحقیق کی سرگرمی کے ذریعے سے طلبہ میں تلاش و جستجو کی عادت پیدا کرنے کی کوشش کرے۔
- تدریس کے دوران آسان سے مشکل اور معلوم سے نامعلوم کی طرف سفر کرنے کے اصول کو اپنایا جائے۔
- دوران تدریس تقریری طریقہ ۔ ترجمے والا طریقہ۔ مباحثی طریقہ اور تفویضی طریقہ اختیار کیا جائے ۔ نیز مزیدطریقہائے تدریس بھی استعمال کیے جاسکتے ہیں۔

ANNEXURE-A-V

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ETHICS - XI-XII

Chapter Theme	Condensed Content
باب پهريون: اخلاق	♦ اخلاق جي وصف ♦ اخلاق جو ڪارج ♦ اخلاقي حڪم ۽ عالمگير اخلاقي قدر
باب ٻيو: اخلاق جا ڪجهه بنيادي مسئلا	♦ خدا جو وجود
باب ٽيون: اخلاقي قانون، حق ۽ فرض	♦ اخلاقي قانون ♦ اخلاقي قدر
باب چوٿون: آزادي، اختيار ۽ ذميواري	♦ وڇڙيون فضيلتون ♦ فرض ۽ ذميواري
باب پنجون: سوسائٽي، اخلاقي زندگي، اعليٰ ادرش	♦ سوسائٽي ♦ ارسطو
باب ڇهون: دنيا جي مذهبن جو اخلاقي فلسفو	♦ يهودي مذهب ♦ عيسائي مذهب ♦ بڌ مت ♦ زرتشت مذهب ♦ هندو ڌرم ♦ اسلام ♦ سک مذهب

Guide line for teacher for effective teaching:

1. استاد کي گهرجي ته سبق پڙهائڻ يا تدريسي عمل کان پهرين سبق جو خلاصو بيان ڪري ته جيئن پڙهائڻ جو مقصد حاصل ٿي سگهي.
2. سبق پڙهائڻ وقت شاگردن جو ڌيان عملي طور شامل هڻڻ گهرجي
3. سبق پڙهائڻ وقت عملي سرگرمين جهڙوڪ سوال ڪرڻ، يا تجسس پري جاڻ حاصل ڪرڻ جي جستجو ۽ عادت پيدا ڪرڻ لاء شاگرد کي همٿائڻ گهرجي.
4. سبق جي تدريس کان پوءِ شاگردن کان سبق بابت سوال ڪرڻ گهرجن ته جيئن سبق جو مقصد درست انداز ۾ سمجهي سگهن.
5. تدريس جو طريقو سولي کان سولو اختيار ڪيو وڃي.
6. پڙهائڻ ۽ سيکارڻ وقت عملي، بياني، بحث ۽ مباحثو ۽ تحريري وغيره طريقا استعمال ۾ آندا وڃن.

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BIOLOGY -XI

Chapter/Theme	Topic(s)
1. **The Biology**	1. Biology and its some major fields 2. Levels of Biological Organization
2. **Biological Molecules**	1. Relationship between structure and function of molecules 2. Organic molecules 3. Synthesis of large molecules by condensation 4. Breaking of large molecules by hydrolysis
3. **Enzymes**	1. Enzymes and their Characteristics 2. Factors affecting Enzymes activity
4. **The Cell**	1. Cell as basic unit of Life 2. Cell Theory 3. Eukaryotic Cell 4. Cytoplasmic organelles &membrane system
5. **Variety Of Life**	1. Needs and Basis of Biological Classification 2. Concept of Hierarchy 3. Two Kingdom to Five Kingdom Systems 4. Viruses (Discovery; Characteristics, Structure and classification) 5. Life cycle of Bacteriophage 6. Animal Diseases
6. **The Kingdom Prokaryote**	1. Bacteria (Discovery, Structure, Nutrition, Respiration and Reproduction) 2. Cyanobacteria (Nostoc structure, nutrition, reproduction and importance)
7. **The Kingdom Protoctista**	1. Diversity among Protista (Plant-like algae, Fungi-like Protoctista) 2. Protozoa and its classification
8. **The Kingdom Fungi**	1. The body of fungus 2. Classification of fungi with reference to structure, reproduction and importance)
9. **The Kingdom Plantae**	1. Classification of Plants 2. Bryophytes (General characteristics; adaptations; life cycle and classes) 3. Tracheophytes 4. Major Groups of Vascular Plants 5. Spermopsida successful group of land plants

10. The Kingdom Animalia	1. Phylum Porifera (General Characteristics) 2. Phylum Cnidaria (General Characteristics; Diploblastic organization; Polymorphism and classes) 3. General Characteristics and classes 4. Phylum Platyhelminthes 5. Phylum Nemathelminthes 6. Phylum Annelida 7. Phylum Mollusca and classes 8. Phylum Arthropoda 9. Phylum Echinodermata 10. Phylum Chordata (Basics Chordate 11. Pisces, Amphibia, Reptilia, Aves and Mammalia
11.Bioenergetics	1. Need of Energy and role of ATP as energy 2. Photosynthesis (Raw material; product, process of photosynthesis) 3. Cellular respiration 4. Aerobic and anaerobic respiration
12. Nutrition	1. Autotrophic and Heterotrophic mode of Nutrition in Plants 2. Holozoic nutrition 3. Human Digestive System
13. Gaseous Exchange in Plants	1. Gaseous Exchange in plants 2. Gaseous Exchange in animals 3. Human respiratory system
14. Transport	1. Transport in Plants (Uptake and transport of water and minerals) 2. Ascent of sap 3. Transpiration (process, types, stomata structure and opening and closing) 4. Transport in Animals 5. Circulatory system in man 6. Human heart (Structure, Cardiac Cycle, heart beats) 7. Blood vessels 8. Lymphatics System 9. Immune system

Guide Lines for teachers for effective teaching:

1. Locate, select, organize and present relevant information from variety of sources.
2. Try to develop relationship among the remaining topics.
3. Guide students to understand scientific concepts & Terminology.
4. Use different teaching strategies to cover given topics in limited time.
5. Ensure that the students understand the concept(s) and processes.
6. Use appropriate Tools and techniques for teaching in Biology.

ANNEXURE-A-VII

NO.SO(CURRICULUM)SELD/CONDENSE-SYLLABUS /2020
GOVERNMENT OF SINDH
SCHOOL EDUCATION & LITERACY DEPARTMENT
Karachi, the dated October, 2020

COMPUTER SCIENCE - XI

Topics/ Sub Topic
INTRODUCTION TO COMPUTER 1. Introduction to Computer 2. Generation of Computers 3. Advantages and Disadvantages of Computer 4. Types of Computers: According to Size, According to Function
COMPUTER SYSTEM 1. Hardware of Computer 2. Input Devices (Keyboard, Mouse, Scanner, Mic) 3. Output Devices (Monitor, Printer), Types of Printers, Types of Monitors, Plotters, Speakers) 4. Computer Components: CPU, ALU, CU 5. RAM and ROM (Its types)
NETWORKING 1. Internet 2. Intranet 3. Networking a. LAN b. WAN c. MAN 4. Topologies: Star, Ring, Bus
BOOLEAN ALGEBRA 1. Boolean Algebra 2. Law of Boolean Algebra 3. Truth Table 4. Logical Gates
COMPUTER SOFTWARE 1. Computer Software 2. Types of Software 3. Data Management Software 4. Language Translator 5. Types of Application Software 6. Types of General-Purpose Software 5. Special Purpose Software
DATA COMMUNICATION 1. Data Communication and its components a. • Signals: - Digital - Analog 2. Modem (Its Function) 3. Types of Coding: o BCD o EBCDIC o ASCII
DATA SECURITY 1. Virus 2. Firewall and Proxy 3. Emails

Guidelines: Teachers should also conduct practicalabout programming (using BASIC or C). However, Final Practical Examination may be taken from MS Word or MS Excel.

ANNEXURE-A-VIII

NO.SO(CURRICULUM)SELD/CONDENSE-SYLLABUS /2020
GOVERNMENT OF SINDH
SCHOOL EDUCATION & LITERACY DEPARTMENT
Karachi, the dated October, 2020

CHEMISTRY -XI

Chapter	TOPIC
1. Introduction to Fundamental Concepts of Chemistry	
1.2	Significant figures
1.5	Empirical Formula
1.6	Molecular Formula
1.8	Calculations Based on Chemical Equations
2. The Three states of Matter Gases, Liquid and Solids	
2.1	Kinetic Theory
2.3	Gas Laws (general gas equation and their problems grham,s law of diffusion)
2.7	Viscosity
2.8	Surface Tension
2.9	Vapour Pressure
2.12	Types of Crystals
2.13	Isomorphism
2.14	Polymorphism
3. The Atomic Structure	
3.2	Crookes's Tube or Discharge Tube Experiments-Passage of Electricity Through Gases at Low Pressure
3.4	Radioactivity-Confirmation of Electrons and Protons
3.5	Chadwick Experiment-Discovery of Neutrons
3.7	Planck's Quantum Theory-Quantization of Energy
3.8	Spectra
3.11	Bohr's Theory
3.12	Bohr's Theory and Hydrogen Atom
3.13	Determination of Energy
3.15	Heisenberg's Uncertainty Principle
3.16	Energy Levels and Energy Sub-Levels
3.17	Orbitals and Quantum Numbers
3.18	Pauli's Exclusion Principle
3.19	Shapes of Orbitals
3.20	Electronic Configuration
4. Chemical Bonding	
4.5	Dipole Moment
4.7	Bond Energy
4.8	Sigma and Pi Bond

4.9	Hybridization
4.10	Shape of Simple Molecules
4.11	Hydrogen Bond
5. Energetics of Chemical Reactions	
5.1	Thermodynamic Terms System; Surroundings and State
5.2	First Law of Thermodynamic
5.5	Hess's Law of Constant Heat Summation
5.6	Heat of Formation
6. Chemical Equilibrium	
6.2	Equilibrium State
6.3	The Law of Mass Action (Equilibrium Law)
6.4	Determination of Equilibrium Constant
6.5	Applications of The Law Equilibrium
6.6	Factors Affecting Balance of Chemical Equilibrium (Le Chatelier's Principle)
7. Solutions and Electrolytes	
7.2	Hydration
7.3	Hydrolysis
7.4	Theory of Ionization
7.7	Oxidation Number (O.N)
7.8	Oxidation and Reduction Reactions
7.9	Balancing Oxidation-Reduction Equations (Ion-electron Method)
7.10	Indicators
8. Introduction to Chemical Kinetics	
8.1	Rate and Velocity of Reaction
8.5	Factors Affecting Rate of Reaction

ANNEXURE-A-IX

NO.SO(CURRICULUM)SELD/CONDENSE-SYLLABUS /2020
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MATHEMATICS -XI

Chapters	Topics & Exercises
Chapter-1: Sets	1.1 Revision 1.2 A few definition 1.3 Operation on sets 1.4 Properties of operations on sets 1.5 Some important laws Exercise 1.1
Chapter-2: Real and Complex Number System	2.5 The system of complex numbers 2.6 Properties of complex numbers 2.7 Definition of imaginary numbers 2.8 Conjugate of complex number 2.9 Modulus of complex number 2.10 The subtraction of complex number 2.11 The division of complex numbers Exercise 2.2 2.12 Geometrical representation of the complex number $x + iy$ as pair of real numbers (x, y) 2.13 The order relations 2.14 vector interpretation of complex numbers 2.15 The triangle inequality 2.16 Real and Imaginary parts of $(x + y)^n$ Exercise 2.3
Chapter -3: Equation	3.5 The cube roots of unity 3.6 properties of the cube roots of unity Exercise 3.3 3.7 Equations reducible to the quadratic formExercise 3.4 3.8 The theory of quadratic equations 3.9 Nature of the roots of a quadratic equationExercise 3.5 3.10 Relations between the roots and the coefficients of a quadratic equation 3.11 To form a quadratic equation when it roots are given Exercise-3.6 3.13 system of two equations involving two variable 3.14 solution of different types of system of equationEx.3.8
Chapter -6: Sequence and Series	6.1 Introductions 6.2 Arithmetic sequence and arithmetic progression (A.P) 6.3 Standard form of an A.P Exercise 6.1 6.4 Arithmetic series Exercise 6.2 6.8 Geometric sequence or geometric progression (G.P) 6.9 Standard form of a G.P Exercise 6.4 6.10 Geometric series Exercise 6.5 6.14 Harmonic sequence or harmonic progression (H.P) 6.15 General term of an A.P

	6.16 the characteristic relation for an H.P 6.17 An important theorem 6.18 Harmonic mean 6.19 To insert (i) a single Harmonic mean (ii) n harmonic mean (n>1) Between any two numbers a and b Exercise 6.8
Chapter -7: Permutations, combinations and introduction to probability	7.1 The counting principles 7.2 the factorial notation 7.3 permutation and combination Exercise 7.1 7.4 Number of permutation 7.5 circular (or cyclic) permutation Exercise 7.2 7.6 Number of combinations Exercise 7.3
Chapter -8: Mathematical Induction and Bionomical Theorem	8.1The principal of mathematical induction Exercise 8.1 8.3 Binomial theorem 8.4 The binomial theorem for a positiveIntegral index 8.5Some important observation 8.6 The general term 8.7 The middle terms Exercise 8.3
Chapter -9: Fundamental of Trigonometry	9.1 introduction 9.2 Radian measure 9.3 General and its measure in degree and Radians 9.4 Relation between radians and degree measure 9.5 Relation between arc-length radius and general angle Ex-9.1 9.8 values of trigonometric function Exercise 9.3
Chapter -10: Trigonometric Identities	10.2 The distance formula 10.3 A fundamental Laws 10.4 Deductions from the fundamental laws 10.5 The sum and difference identities 10.6 Applications Exercise 10.2 10.7 Identities for $\sin 2\theta \cos 2\theta$ and $\tan 2\theta$ 10.8 Identities for $\sin \theta/2$, $\cos \theta/2$ and $\tan \theta/2$ 10.9 Sum and product identities for trigonometric functions 10.10 Applications Exercise 10.3
Chapter -12: Solution of Triangles	12.1 The laws of Sines 12.2 The Law of Cosines 12.3 The Law of tangent 12.4 Solution of triangles Exercise 12.2 12.5 Half angle formulas of the lengths of the sides of a triangles Exercise 12.3 12.6 Area of triangle Exercise 12.4
Chapter -13: Inverse trigonometric Functions & Trigono-Equations	13.3 solutions of trigonometric equation Exercise 13.2