

## Std XII Information Technology (Science - 97)

Proposed Units for Self learning/Non-evaluation for the academic year 2020-2021 only under COVID-19 situation

Figure 1.1

### Theory (Science - 97)

Chapter no	Chapter Name	Unit for Self Learning/ Non-evaluative	Page No
3	Advanced JavaScript	i) Math object ii) Date Object iii) Array object	45 46 47
4	Emerging Technologies	4.3 AI (section only)	56
5	Server-Side Scripting(PHP)	i) PHP Associative Array ii) Multidimensional Array iii) Form Connectivity with Database	66 67 70-73

		181	5.5.2	Vector Triple Product	Deleted
6	6. Line and Plane	217	6.5.1	Angle between planes	Deleted
		217	6.5.2	Angle between a line and a plane	Deleted
		218	6.6	Coplanarity of two lines	Deleted
		219	6.7	Distance of a point from a plane	Deleted
7	7. Linear Programming	235	7.2.2	Mathematical formulation of L.P.P. and word problems	Deleted

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**Standard : 12<sup>th</sup> Mathematics**  
**Sub : Arts & Science Maths Part - 1**  
**(Academic Year 2020 – 21)**

Sr. No.	Chapter & No. Name	Page No.	Column	Matter of Self Study	Remark
1	1. Mathematical Logic	14	1.3.2	Dual	Deleted
		21	1.5	Applications of Logic to switching Circuit	Deleted
2	2. Matrices	40	-	Uniqueness of Inverse of a matrix	Deleted
		57	2.3.2	Method of Reduction	Deleted
3	3. Trigonometric Functions	68	-	The General Solution : Theorem 3.1, 3.2, 3.3, 3.4,3.5, 3.6	Deleted
		82	3.3.7	Applications of Sine rule, Cosine rule, Projection rule	Deleted
		94	3.4.8	Proofs of Properties of Inverse Trigonometric Functions	Deleted
4	4. Pair of Straight Lines	124	4.4	General Second Degree equation in x and y	Deleted
5	5. Vectors	180	5.5.1	Proof of Theorem 9 (Volume of Parallelopiped)	Deleted
		180	5.5.1	Proof of Theorem 10 (Volume of tetrahedron)	Deleted

**Standard : 12<sup>th</sup> Mathematics**  
**Sub : Arts & Science Maths Part - 2**  
**(Academic Year 2020 – 21)**

Sr. No.	Chapter & No. Name	Page No.	Column	Matter of Self Study	Remark
1	1. Differentiation	56	1.5.2	Successive differentiation of some standard functions	Deleted
2	2. Applications of Derivatives	73	2.2.1	Approximations	Deleted
		76	2.3.1	Rolle's Theorem	Deleted
		78	2.3.2	Lagrange's Mean Value Theorem	Deleted
3	3. Indefinite Integration	135	3.3.2	Integral of Type $\int (px + q)\sqrt{ax^2 + bx + c}$	Deleted
		145	3.5	Something Interesting	Deleted
4	4. Definite Integration	151	4.1	Definite Integral as a limit of sum	Deleted
		173	-	Reduction Formulae	Deleted
6	6. Differential Equations	204	6.4.2	Linear Differential Equation	Deleted
7	7. Probability Distribution	233	7.4	Probability Distributions of Continuous Random Variables	Deleted

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### XII PHYSICS (54)

Sr No.	Page No	Article No	Portion Deleted for year 2020-21
<b>Chapter 1 Rotational Dynamics</b>			
1	11	1.4.2	Sphere of Death
2	11	1.4.3	Vehicle at the Top of a Convex Over Bridge
3	19-20	1.11	Rolling Motion
<b>Chapter 2 Mechanical Properties Of Fluids</b>			
1	27-33	2.3	Pressure
2	48-49	2.8	Equation of Continuity
3	50-53	2.9	Bernoulli Equation
<b>Chapter 3 Kinetic Theory Of Gases and Radiation</b>			
1	56	3.2	Behaviour of a gas
2	57	3.3	Ideal Gas and Real Gas

**PHYSICS (Reduced / Non Evaluation Syllabus only for Academic Year 2020-21 only )**

3	57	3.4	Mean Free Path
4	61-62	3.8	Law of Equipartition of Energy
<b>Chapter 4 Thermodynamics</b>			
1	96	4.8	Heat Engines
2	99	4.9	Refrigerators and Heat Pumps
3	102	4.10	Second Law of Thermodynamics
4	104	4.11	Carnot Cycle and Carnot Engine
5	106	4.12	Sterling Cycle
<b>Chapter 5 : Oscillations</b>			
1	116-117	5.7	Reference Circle Method
2	118-119	5.9	Graphical representation of S.H.M.
3	126-127	5.14	Damped Oscillations
4	127-128	5.15	Free Oscillations, Forced Oscillations and Resonance
<b>Chapter 6: Superposition of Waves</b>			
1	132-133	6.3	Reflection of waves
2	153	6.10	Characteristics of sound
3	154	6.11	Musical Instruments
<b>Chapter 7 : Wave Optics</b>			
1	158	7.2.	Corpuscular Nature
2	164	7.6	Refraction of a light at a Plane Boundary between two media
3	164	7.7	Polarization
4	180	7.10	Resolving power
<b>Chapter 8 : Electrostatics</b>			
1	194-195	8.5	Equipotential Surfaces
2	199	8.7	Conductors and insulators, Free charges and Bound charges
3	208	8.11	Displacement current
4	210-211	8.13	Van de Graaff Generator
<b>Chapter 10 Magnetic Fields due to Electric Current</b>			
1	232-234	10.3	Cyclotron Motion
2	234	10.4	Helical Motion
<b>Chapter 11 Magnetic Materials</b>			
1	251-253	11.2	Torque Acting on a Magnetic Dipole in a Uniform Magnetic Field

**PHYSICS (Reduced / Non Evaluation Syllabus only for Academic Year 2020-21 only )**

2	257-261	11.5	Magnetic Properties of Materials
3	261-262	11.6	Hysteresis
4	262	11.7	Permanent Magnet and Electromagnet
5	262	11.8	Magnetic Shielding
<b>Chapter 12 Electromagnetic Induction</b>			
1	270-273	12.6	Induced emf in a Stationary Coil in a Changing Magnetic Field
2	273-274	12.7	Generator
3	274-276	12.8	Back emf and back torque
4	281	12.13	Energy Density of a Magnetic Field
<b>Chapter 13 AC Circuits</b>			
1	288	13.2	A.C. Generator
2	297-299	13.6	Power in A.C. Circuits
3	302-303	13.9	Sharpness of Resonance: Q factor
4	303	13.10	Choke coil
<b>Chapter 14 Dual Nature of Radiation and Matter</b>			
1	314	Table 14.2	Summary of analysis of observations from
2	316	14.4	Photo Cell
3	318-319	14.6	Davison and Germer Experiment
<b>Chapter 15 Structure of Atoms and Nuclei</b>			
1	324	15.3	Geiger Marsden Experiment
2	330-332	15.7	Atomic Nuclues
3	332-333	15.8	Nuclear Binding Enenergy
4	333-336	15.9	Radioactive Decays
5	338-341	15.11	Nuclear energy
<b>Chapter 16 Semiconductor Devices</b>			
1	347-350	16.3.1	Zener Diode

**Note Due to the Covid 19 pandemic situation and the social distancing**

**it may be difficult to complete even 75% Practicals and Activities.**

**Hence for the year 2020-21 the students are required to perform only 60% of the Practicals and Activities**

**Note for XI Practical:**

Due to Covid-19, 60% of total Chemistry practicals should be conducted by teachers during academic year 2020-21.

**XII Chemistry (55)****Deleted and Non- Evaluative portion for Year 2020-21.**

Sr.No.	Chapter No. and Name	Deleted and Non evaluative portion
1.	1.Solid State	1.2.1 Crystalline solid, 1.2.2.Amorphous solid, 1.7.3 Packing efficiency of metal crystal in fcc lattice, Table 1.3 Edge length and particle parameters in cubic system, Table 1.4 Point no.3 fcc/hcp only, 1.9 Electrical properties of solids, 1.10 Magnetic properties of solid
2	2.Solutions	Demonstration and Exceptions to Henry's Law, 2.11.1 Van't Hoff factor (i), 2.11.2 Modification of expressions of colligative property, 2.11.3 Van't Hoff factor and degree of dissociation, Problem 2.10,2.11,2.12,2.14
3	3.Ionic Equilibria	3.1 Introduction, 3.6.2 Acidity, basicity and neutrality of aqueous solution, 3.8.3 Properties of Buffer 3.10.1 Common ion effect and solubility
4	4.Chemical Thermodynamics	4.1 Introduction, 4.2.6 Thermodynamic Equilibrium, key points for spontaneous process, 4.11.3 Entropy and spontaneity, 4.11.4 Second law of thermodynamics, 4.11.5 Gibbs energy,4.11.6 Gibbs energy and spontaneity, 4.11.7 Spontaneity and $\Delta H$ or $\Delta S$ , 4.11.8 Temperature of equilibrium, 4.11.9 Gibbs function and equilibrium constant, Problem 4.16,4.17,4.18, Problem 4.19 and 4.20
5	5.Electrochemistry	5.1 Introduction, 5.2.2 Ionic conduction,5.2.3 Measurement of conductivity of solution, Significance of molar conductivity, 5.4.1 Electrochemical reactions ,5.4.2 Electrodes, 5.10.1 Dry cell, 5.10.2 Lead accumulator, 5.11 Fuel cells
6	6.Chemical Kinetics	6.1 Introduction, 6.6 collision theory of bimolecular reactions, 6.7 Temperature dependence of reaction rate, Problem 6.12 and 6.13, Problem 6.14
7	7.Elements of Groups 16,17 and 18	Introduction, Table 7.2 Atomic and physical properties of group 16 elements, Table 7.3,7.4 Atomic and physical properties of group 17 and 18 elements, Table 7.5,7.6 Properties of hydrides of Group 16 and 17 elements, 7.9 Oxygen and compounds of oxygen, Fig.7.1 Flow diagram for manufacture of sulphuric acid, 7.11.2 Hydrogen chloride, 7.13 Compounds of Xenon (Excluding Table no.7.14)
8	8. Transition and inner transition elements	8.1.1 General Introduction , Table 8.5 Atomic Properties of First Transition series, Table 8.6 Ionisation enthalpy of first transition series Remember, 8.3 Compounds of Mn and Cr, 8.6.1 Metallurgy 8.6.2 Extraction of iron from hematite ore using blast furnace, Table 8.12 I.E of Lanthanoids, Problem, Table 8.13 Effective Magnetic moments of Lanthanoids
9.	9.Co-ordination Compounds	9.9.6 CFT, 9.9.7 Factors affecting Crystal Field splitting parameters, 9.9.8 Colour of the octahedral complexes, 9.9.9 Tetrahedral complexes
10	10.Halogen Derivatives	10.3.5 Sandmeyer's reaction, 10.5.5 Representation of configuration of molecule, 10.6.1 Laboratory test of haloalkane, 10.7 Uses and Environmental effect of some polyhalogen compound
11	11.Alcohols , Phenols and Ethers	Preparation of alcohols a) From alkyl halide b) By acid catalyzed hydration of alkenes, a)Laboratory test of alcohols and phenol i) Litmus test , ii) Reaction with base



		ii) Reaction with Phosphorus Halide, iii) Dehydration of alcohols to alkenes, a) Laboratory test of ether
12	12. Aldehydes, Ketones and carboxylic acids	12.1 Introduction, a) By oxidation of alcohol b) from hydrocarbons, ii) Preparation of aromatic ketones from acyl chloride, b) Laboratory test for ketonic group, 12.9.2 Laboratory tests for carboxyl group.
13	13. Amines	13.6.1 Laboratory test for amines, Reaction with fluoboric acid b) Reactions involving retention of diazonium group.
14	14. Biomolecules	14.1 Introduction, 14.2.10 Polysaccharides (Starch, cellulose and glycogen), b) Secondary structure of protein, c) Tertiary structure of protein, d) Quaternary structure of protein, Fig. 14.26 Formation of nucleoside, Fig. 14.27 Structure of nucleotide, Fig. 14.28 Formation of dinucleotide, 14.4.3 DNA double helix
15	15. Introduction to Polymer chemistry	Fig. 15.2 Classification of polymers, 15.3.6 Phenol-formaldehyde and related polymers, Fig. 15.3 Preparation of Bakelite, Fig. 15.4 Formation of crosslinked malemine formaldehyde resin, 15.3.9 Viscose rayon, Fig 15.7 Formation of viscose rayon, 15.4 Molecular mass and degree of polymerization of polymers
16	16. Green Chemistry and Nanochemistry	Fig. 16.1 Macro-materials to atoms, Fig. 16.2 Scale of Nanomaterials, 16.6.4 Thermal properties, 16.6.5 Mechanical Property, 16.6.6 Electrical conductivity, 16.7 Synthesis of Nanomaterial, 16.7.4 Photographs of Instruments

**Note for XII Practical:**

**Due to Covid-19, 60% of total Chemistry practicals should be conducted by teachers during academic year 2020-21.**

**Chapterwise details for HSC Exam Feb/Mar 2020-21.**

<b>Sr. No.</b>	<b>Chapter Number and Name</b>	<b>Portion non-evaluative for March 2020 -21 examination</b>
1	Chapter 1 Reproduction in lower and higher plants	1.1: Asexual reproduction
2	Chapter 2 Reproduction in lower and higher animals	2.1: Asexual reproduction in animals
3	Chapter 3 Inheritance and Variation	-----
4	Chapter 4 Molecular Basis of Inheritance	<b>No topic is deleted from this chapter</b>
5	Chapter 5 Origin and Evolution of life	5.1: Origin of life : (Protobiogenesis) 5.2: Chemical Evolution of Life 5.3: Organic Evolution 5.4: Darwinism 5.5: Mutation Theory 5.7: Mechanism of organic evolution 5.8: Hardy-Weinberg's principle 5.9: Adaptive Radiation 5.10: Evidences of organic evolution 5.11: Speciation 5.12: Geological time scale

6	Chapter 6 Plant water relations	6.4 Absorption of water by roots from soil 6.5 Water potential 6.6 Plasmolysis 6.7 Path of water across the root 6.8 Mechanism of absorption of water 6.9 Translocation of water 6.10 Transport of mineral ions 6.11 Transport of food 6.12 Transpiration 6.13 Structure of stomatal apparatus
7	Chapter 7 Plant growth	7.1 Plant growth 7.2 Phases of growth 7.3 Conditions of growth 7.4 Growth rate and types of growth 7.5 Growth curve 7.6 Differentiation, dediffrenntion and rediffrentiation 7.7 Development 7.8 Plasticity 7.10 Photoperiodism 7.11 Vernalization 7.12 Mineral nutrition 7.13 Nitrogen cycle
8	Chapter 8 Respiration and circulation	8.5: Modified respiratory movements, Artificial ventilation, ventilator FROM 8.16: Angiography, heart transplant, silent heart attack

9	Chapter 9 Control and coordination	From 9.6: Reflex action and chart 9.15: Types of reflex actions 9.7: Receptors
10	Chapter 10 Human health and diseases	-----
11	Chapter 11 Enhancement of food production	11.2 Plant breeding 11.3 Tissue culture 11.4 Single cell protein 11.6 Animal husbandry
12	Chapter 12 Biotechnology	No topic is deleted from this chapter
13	Chapter 13 Organisms and population	No topic is deleted from this chapter
14	Chapter 14 Ecosystems and energy flow	14.1 Ecosystem 14.2 Energy flow 14.3 Ecological pyramids 14.4 Nutrient cycles 14.6 Ecosystem services
15	Chapter 15 Biodiversity conservation and Environmental issues	15.7 Environmental issues a. Air pollution and control measures b. Noise pollution and control measures c. Water pollution and its control, Thermal pollution, Measures to reduce sewage water, Solid waste management 15.8 Greenhouse effect and global warming 15.9 Ozone depletion 15.10 Deforestation

# XII Electronics P1 Reduced Syllabus

## Electronics Paper-1 Applied Electronics Reduced Syllabus

### class 12th

BIFOCAL VOCATIONAL COURSES  
Standard - XII Subject - ELECTRONICS (C2) Paper - I - Applied Electronics ( Theory ) page-1  
25 % Reduction of Syllabus for Academic year - 2020-2021

Sr. No.	Topic	Sub-Topic	Content to be omitted for academic year - 2020-2021	Remark
1)	Instruments	Cathode Ray Oscilloscope	Draw CRO displays waveform, dual trace CRO. Applications- phase, amplitude measurement using Lissajous figures	Self study possible, consider for internal evaluation.
		Function Generator D. M. M.	Basic elements of function generator, Block diagram & brief description of each block.	
2)	Power Supplies	Half wave rectifier, Full wave rectifier (CT) Bridge rectifier	*	
		Filters :	*	
		Concept of regulation	*	
		Zener regulator	*	
		Transformer Regulator :	Current limiting - basic ideas ( no feedback limiting only ).	
3)	Transducers	Classification	*	
		Selection	*	
4)	Operational Amplifier	Introduction	Draw CM, of RC coupled & direct coupled amplifiers, advantages of differential amp, need for dual power supply.	
		Parameters	*	
		Linear Applications	Integrator & Differentiator ( using simple OPAMP. Derivation in each case is expected, numericals are expected.)	
		Non-linear Applications	Schmitt trigger (basic circuit), their applications. ( in all above cases, practical applications should be stated)	
5)	Modern Electronic communication	Element of communication system	*	
		Types of electronic communication	*	
		Electromagnetic spectrum	*	
		Bandwidth	*	
		Modulation	*	
		AM	*	
		FM	*	
		Satellite communication	*	
		Satellite communication system	*	
		Application overview of satellites	communication ( T.V & Telephony ), surveillance ( military ) observation ( meteorological, monitoring earth's resources etc.) GPS ( introduction only )	
Concept of digital communication	speed of data transfer : baud rate			

BIFOCAL VOCATIONAL COURSES  
Standard - XII Subject - ELECTRONICS (C2) Paper - I - Applied Electronics ( Theory ) page-2  
25 % Reduction of Syllabus for Academic year - 2020-2021

Sr. No.	Topic	Sub-Topic	Content to be omitted for academic year - 2020-2021	Remark
6)	Modern Electronic communication ( continue - )	Modem	What is modem, its use in communication.	Self study possible, consider for internal evaluation.
		Introduction to computer network	*	
		Fibre-optic communication	Basic block diag. of fibre optic communication system showing: Up data to coder, light source, ( transmitter ) fibre optic cable, light detector, amplifier, wave shaper, decoder & up data ) Function of each in brief, Advantages of fibre optic cables over conventional electrical cables for communication, application of fibre optic cable ( mention only ).	
		FACSIMILE (Fax)	What is Fax, Basic block diagram of fax machine (Source of light, CCD, ADC, digital data compressor, modulator to telephone line interface, telephone line interface to demodulator, data expander, printer, control logic, motor control, operator control) & working in brief concept of scanning to be explained.	
		Cellular Radio (cell-phone)	Basic concept ( concept of dividing geographical area in to cells each having a low power transmitter, each cell connected to master control centre & automatic switching of system from one cell to another by master control centre ), General block diag. of cellular radio ( antenna, transmitter, receiver, frequency synthesizer, logic unit, control unit, hand set ), function of each block in brief.	
4)	Study of integrated circuit	IC 555	PPM, PAM, FSK.	
		IC 741	*	
		IC 317	*	

Note: Teachers can use supplementary material like e- sources, worksheets, projects, assignments, home work etc. to deal with the self - study portion.

# XII Electronics Paper 2

BIFOCAL VOCATIONAL COURSES  
 Standard - XII      Subject - ELECTRONICS (C2)      Paper - II - Digital Electronics ( Theory )      page-1  
 25 % Reduction of Syllabus for Academic year - 2020-2021

Sr. No	Topic	Sub-Topic	Content to be omitted for Academic year - 2020-2021	Remark
1)	Number System & Boolean Algebra	Decimal ; Binary & Hexadecimal number	*	Self study possible , consider for internal evaluation .
		Codes	BCD , ASCII ( 7-bit ) , EBCDIC problems conversion not expected.	
		Binary Arithmetic	*	
2)	Logic Gates	Introduction	*	
		Basic Gates	*	
		De Morgan's Theorem's	*	
		Derived Gates	*	
		Ex-OR gate	*	
		Adders	4-bit binary adder / subtractor.	
3)	Logic Families & IC specifications	Introduction to Logic fam	*	
		T T L	*	
		C M O S	Basic ckt of NAND , NOR , NOT gates & working using CMOS , Open collector TTL NAND , Tristate concept ( with ckt. & working) ( specification of IC numbers should not be stated but not expected in exam)	
		Characteristics	Noise margin	
4)	Combinational Logic Circuit	Multiplexers	*	
		De multiplexer	*	
		Applications	*	
		Encoder	*	
		Decoder	Seven segment display decoder driver(eg. 7446) ( internal dig. Pin configurations not to be asked in exam.)	
5)	Flip-Flops	Flip-Flops	*	
		Registers	Prset & clear facility, Master slave concept ( JK MS) Concept of shift register, Left shift, right shift (using D Flip-Flop).	
		counters	Basic concept of up- down counter. Ring counter.	

## HSC Electronics Reduced Syllabus 2020 class -- 12th Paper 2

BIFOCAL VOCATIONAL COURSES  
 Standard - XII      Subject - ELECTRONICS (C2)      Paper - II - Digital Electronics ( Theory )      page-2  
 25 % Reduction of Syllabus for Academic year - 2020-2021

Sr. No	Topic	Sub-Topic	Content to be omitted for Academic year - 2020-2021	Remark
6)	A/D & D/A Converters	D/A converters	*	Self study possible , consider for internal evaluation .
		A-D converters	Successive approximation type ADC with block diagram and working.	
7)	Computer Fundamentals	Computer	*	
		I/O devices	*	
		Memory	*	
		Secondary Memory	Floppy disc, Hard disk , CD ROM, Magnetic tape . General explanation with Read/Write mechanism.	
	Specifications of PC	Clock frequency, Main memory (RAM), Secondary storage (HD) device, Input output ports, Keyboard mouse, Processor, Printer, Mouse, Floppy disc drives, CD Drive, M O D E M, Multimedia kit with sound blaster, Cache memory, requirements of UPS ( specifications of any type are to be listed & explanation is not required.)		

Note -Teachers can use supplementary material like e- sources , worksheets , projects , assignments , home work etc. to deal with the self - study portion.