DAV PUBLIC SCHOOLS , JHARKHAND ZONE -F

Syllabus for 2021-22

SPLIT UP SYLLABUS- CLASS XII ENGLISH CORE 2021- 22

Flamingo Prose	Flamingo Poem	Vistas (Supplementary Reader)	Reading/ Writing
1. The Last Lesson	1. My Mother at 66 2.An Elementary School classroom in a Slum	1. The Third Level	Notice Advertisements
 Lost Spring Deep Water 	3. Keeping Quiet	2. The Tiger King 3. Journey To the end of the Earth	Business Letters -Making Enquiries - Registering complaints Article Writing
4. The Rattrap	4. A Thing of Beauty	4. The Enemy	Poster Placing orders & sending replies Debate
	REVISION	SA 1	
5. Indigo	5.A Roadside Stand	5. Should Wizard Hit Mommy	Invitation & Replies to Invitation (Formal) Application for a Job
6. Poets and Pancakes 7. The Interview Part- 1	6. Aunt Jennifer's Tigers	6. On The Face of It	Invitation & Replies to Invitations (Informal) Speech
7. The Interview Part- 2 8. Going Places	Revision	7. Evans Tries an O Level 8. Memories of Childhood	Revision of Letters Report Writing
	REVISION	PRE- BOARD	
STRUCTURED	REVISION		
	Prose 1. The Last Lesson 2. Lost Spring 3. Deep Water 4. The Rattrap 5. Indigo 6. Poets and Pancakes 7. The Interview Part- 1 7. The Interview Part- 2 8. Going Places	Prose Poem 1. The Last Lesson 1. My Mother at 66 2. An Elementary School classroom in a Slum 2. Lost Spring 3. Keeping Quiet 3. Deep Water 4. A Thing of Beauty REVISION 5. Indigo 5. A Roadside Stand 5. A Roadside Stand 6. Poets and Pancakes 7. The Interview Part- 1 7. The Interview Part- 2 8. Going Places REVISION	Prose Poem (Supplementary Reader) 1. The Last Lesson 66 2. An Elementary School classroom in a Slum 2. Lost Spring 3. Keeping Quiet 3. Journey To the end of the Earth 4. A Thing of Beauty 4. The Enemy Fatand Fancakes 7. The Interview Part- 1 7. The Interview Part- 2 8. Going Places Revision PRE- BOARD 1. The Third Level 1. The Third Level 1. The Third Level 1. The Third Level 2. The Tiger King 3. Journey To the end of the Earth 4. The Enemy 5. Should Wizard 4. The Enemy 6. On The Eace of It 7. Evans Tries an O Level 8. Memories of Childhood REVISION PRE- BOARD

BLUE PRINT (SA- I)

Subject: English Time: 3 Hrs.

S. NO. Of The questions		Long Answer	Short Writing Task I	Short Writing Task II	мсо	TOTAL MARKS
1. 2.	Part – A (Reading Comprehension)				10 10	20
3. 4. 5.	Part – A (Literature)				8 4 8	20
6. 7 8. 9.	Part- B (Writing)	5 5	3 3			16
10. 11. 12. 13.	Part- B (Literature)	5 5		5*2= 10 2*2= 4		24
	Total	20	06	10+4=14	40	80

डीएवी पब्लिक स्कुल पाठ्यक्रम-मासिक सत्र 2021-22

कक्षा –बारहवीं

विषय - हिंदी

मास	आरोह भाग 2	वितान भाग 2	अभिव्यक्ति और माध्यम	सृजनात्मक गतिविधियां
अप्रैल	पद्य-आत्म परिचय,	सिल्वरवैडिंग	समाचार,फीचर, आलेख	कविता वाचन
	दिन जल्दी -जल्दी ढलता है ,			
	गद्य -भक्तिन			
मई	पद्य -पतंग,कविता के		जनसंचार(विभिन्न माध्यमों	
	बहाने ,बात सीधी थी पर,		के लिए लेखन)	
जून	गद्य-बाजार दर्शन ,	जूझ	कैसे बनती है कविता ,सामान्य	भाषण
	पद्य-कैमरे में बंद अपाहिज		लेखन -निबंध तथा औपचारिक	
			पत्र	
जुलाई	गद्य-काले मेघा पानी दे ,		जनसंचार(पत्रकारीय लेखन	
	पद्य-सहर्ष स्वीकारा है		के विभिन्न रूप और लेखन	
			प्रक्रिया ,विशेष लेखन स्वरूप	
			और प्रकार	
अगस्त	गद्य-पहलवान की ढोलक ,	अतीत में दबे	नाटक लिखने का व्याकरण,	परियोजना कार्य
	पद्य-उषा	पांव	कैसे लिखें कहानी	
सितंबर	पुनरावृति,अर्धवार्षिक परीक्षा			
अक्टूबर	पद्य-कवितावली(उत्तरकांड से)		सामान्य लेखन- निबंध तथा	वाद विवाद
	लक्ष्मण -मूर्च्छा और राम का		औपचारिक पत्र	
	विलाप,			
	गद्य-चार्ली चैपलिन यानी हम			
	सब			
नवंबर	पद्य-रुबाइयां, गजल ,			
	गद्य-नमक			
दिसंबर	पद्य-छोटा मेरा खेत ,बगुलों के	डायरी के पन्ने	कैसे बनता है रेडियो नाटक	प्रश्नोत्तरी
	पंख			
जनवरी	गद्य-शिरीष के फूल,		नए और अप्रत्याशित विषयों	
	श्रम विभाजन और जाति -		पर लेखन	
	प्रथा			
फरवरी	पुनरावृति, वार्षिक परीक्षा			

परीक्षा भार विभाजन

खंड अ (वस्तुपरक प्रश्न)

		विषयवस्तु	उप भार	कुल भार	
1		ठित गद्यांश (चिंतन क्षमता एवं अभिव्यक्ति कौशल पर बहुविकल्पात्मक प्रश्न जाएंगे)	1	15	
	अ	दो अपठित गद्यांशों में से कोई एक गद्यांश करना होगा (450-500 शब्दों के) (1अंक x 10 प्रश्न)	10	10	
	व	दो अपठित पद्यांशों में से कोई एक पद्यांश करना होगा (250-250 शब्दों के) (1अंक x 5 प्रश्न)	05	05	
2	कार्यालयी हिंदी और रचनात्मक लेखन ('अभिव्यक्ति और माध्यम' पुस्तक के आधार पर)				
	अ	अभिव्यक्ति और माध्यम पुस्तक से बहुविकल्पात्मक प्रश्न (1अंक x5 प्रश्न)	05	05	
3	पाट	ज्यपुस्तक आरोह भाग – 2 से बहुविकल्पात्मक प्रश्न	1	10	

	अ	पठित काव्यांश पर पाँच बहुविकल्पी प्रश्न (1अंक x 05 प्रश्न)	05
	व	पठित गद्यांश पर पाँच बहुविकल्पी प्रश्न। (1अंक x 05 प्रश्न)	05
4	अन्	10	
	अ	पठित पाठों पर सात बहुविकल्पी प्रश्न (1अंक x 10 प्रश्न)	10

परीक्षा भार विभाजन

खंड ब (वर्णनात्मक प्रश्न)

	io	विषयवस्तु	उप भार	कुल भार
5	का	र्यालयी हिंदी और रचनात्मक लेखन		20
	1	दिए गए तीन नए और अप्रत्याशित विषयों में से किसी एक विषय पर लगभग 150 शब्दों में रचनात्मक लेखन (5 अंक x1 प्रश्न)	05	
	2	औपचारिक विषय से संबंधित पत्र लेखन। (5 अंक x1 प्रश्न) (विकल्प सहित)	05	
	3	कविता/कहानी/नाटक की रचना प्रक्रिया पर आधारित दो लघुउत्तरीय प्रश्न (3 अंक x 1 प्रश्न) + (2 अंक x 1 प्रश्न) (विकल्प सहित)	05	
	4	समाचार लेखन (उल्टा पिरामिड शैली)/फीचर लेखन/आलेख लेखन पर आधारित दो लघुउत्तरीय प्रश्न (3 अंक x 1 प्रश्न) + (2 अंक x 1 प्रश्न) (विकल्प सहित)	05	
6 पाठ्यपुस्तक आरोह भाग – 2				
	1	काव्य खंड पर आधारित तीन प्रश्नों में से किन्हीं दो प्रश्नों के उत्तर (लगभग 50-60 शब्दों में) (3 अंक x 2 प्रश्न)	6	
	2	काव्य खंड पर आधारित तीन प्रश्नों में से किन्हीं दो प्रश्नों के उत्तर (लगभग 30-40 शब्दों में) (2 अंक x 2 प्रश्न)	4	
	3	गद्य खंड पर आधारित तीन प्रश्नों में से किन्हीं दो प्रश्नों के उत्तर (लगभग 50-60 शब्दों में) (3 अंक x 2 प्रश्न)	6	
	4	गद्य खंड पर आधारित तीन प्रश्नों में से किन्हीं दो प्रश्नों के उत्तर (लगभग 30-40 शब्दों में) (2 अंक x 2 प्रश्न)	4	
3	ल अं	क		80
,	(अ) श्रवण तथा वाचन	10	20
	(व)	परियोजना कार्य	10	
g.	ल उ	भंक		100

MONTH	CHAPTER'S NUMBER AND NAME (AS PER NCERT BOOK)	TOPICS
APRIL	CHAPTER 5: Continuity and Differentiability	Continuity and differentiability, derivative of composite functions, chain rule, derivatives of implicit functions and inverse trigonometric functions. Concept of exponential and logarithmic Functions. Logarithmic differentiation, Parametric Differentiation, Higher order derivatives, Rolle's theorem and Lagrange's mean value theorem (without proof) and their geometric interpretations.
MAY	CHAPTER 3 :Matrices	Matrices, Types of matrices, Algebra of matrices (Addition, subtraction, scalar multiplication, multiplication of two matrices), symmetric and skew-symmetric matrices, Existence of Inverse, Calculation of inverse of 2x2 and 3x3 matrices, using elementary operations.
	CHAPTER 4:Determinants	Determinants ,its properties,are of triangle,adjoint,inverse of a matrix,solving linear equations by matrix method.
JUNE	CHAPTER 2:Inverse Trigonometric Functions	Inverse trigonometric functions ,Introduction,Basic concepts,Properties of Inverse Trigonometric Functions and their graphs
JULY	CHAPTER 1:Relations and Functions	Relation and Functions:Introduction,Type of Relations,Types of Functions,Composition of functions and Invertible Functions.
	CHAPTER 6: Applications of derivatives	Application of derivatives (i)First derivative as rate measure (ii)Errors and approximations (iii)Tangent and Normals (iv)Increasing and decreasing functions (v) Maxima and Minima,
AUGUST	CHAPTER 7:Integrals	Integration as inverse process of differentiation. Integration of a variety of functions by substitution, by partial fractions and by parts, only simple integrals of the type $\int \frac{dx}{x^2 \pm a^2}, \int \frac{dx}{\sqrt{x^2 \pm a^2}}, \int \frac{dx}{\sqrt{a^2 - x^2}}$
	CHAPTER 7:Integrals	1

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AUGUST	(continued)	$\int dx \int dx$
(continued)		$\int \frac{dx}{ax^2 + bx + c}, \int \frac{dx}{\sqrt{ax^2 + bx + c}}$
		$\int \frac{(px+q)}{ax^2+bx+c} dx , \int \frac{(px+q)}{\sqrt{ax^2+bx+x}} dx$
		$\int \sqrt{a^2 \pm x^2} dx , \int \sqrt{x^2 - a^2} dx$
		$\int \sqrt{ax^2 + bx + c} dx, \int (px + q) \sqrt{ax^2 + bx + c} dx$
		to be evaluated.
		Definite integrals as a limit of a sum, Fundamental
		Theorem of Calculus (without proof). Basic properties of definite integrals and
		evaluation of definite integrals.
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SEPTEMBER	REVISION for First Terminal, and	
	First Terminal	
	CHAPTER 8:Application of	Applications in finding the area under simple
	Integrals	curves, especially lines, areas of circles/
		parabolas/ellipses (in standard form only), area
		between the two above said curves (the region should be clearly identifiable).
OCTOBER	CHAPTER 9:Differential	Definition, order and degree, general and
	Equations	particular solutions of a differential equation.
		Formation of differential equation whose general
		solution is given. Solution of differential equations by method of separation of
		variables, homogeneous differential
		equations of first order and first degree. Solutions
		of linear differential equation of the
		type:
		$(i)\frac{dy}{dx} + py = q$, where p and q are
		either functions of x alone
		or are cons tan ts.
		$(ii) \frac{dx}{dx} + px = q$, where p and q are
		either functions of y alone
		or are cons tan ts.

OCTOBER (continued)	CHAPTER 10:Vectors	Vectors and scalars, magnitude and direction of a vector. Direction cosines and direction ratios of vectors. Types of vectors (equal, unit, zero, parallel and collinear vectors), position vector of a point, negative of a vector, components of a vector, addition of vectors, multiplication of a vector by a scalar, position vector of a point dividing a line segment in a given ratio. Scalar (dot) product of vectors, projection of a vector on a line. Vector (cross) product of vectors.
NOVEMBER	CHAPTER 11: Three dimensional geometry	Direction cosines and direction ratios of a line joining two points. Cartesian and vector equation of a line, coplanar and skew lines, shortest distance between two lines. Cartesian and vector equation of a plane. Angle between (i) two lines, (ii) two planes. (iii) a line anda plane. Distance of a point from a plane. Family of planes
	CHAPTER 12: Linear programming,	Introduction, definition of related terminology such as constraints, objective function, optimization, different types of linear programming (L.P.) problems, mathematical formulation of L.P. problems, graphical method of solution for problems in two variables, feasible and infeasible regions, feasible and infeasible solutions, optimal feasible solutions (up to three non-trivial constraints).
	CHAPTER 13 :Probability	Multiplication theorem on probability. Conditional probability, independent events, total probability.
DECEMBER	CHAPTER 13: Probability(Continued)	Baye's theorem, Random variable and its probability distribution, mean and variance of random variable. Repeated independent (Bernoulli) trials and Binomial distribution.

Term-1 syllabus/Blue-print for MATHEMATICS

(Session 2021-22)

Class: XII Full marks: 80(Theory)

Chapter Number (As per NCERT book)	Chapter's Name	Weightage	Number of Questions carrying 1 mark	Number of Questions carrying 2 marks	Number of Questions carrying 3 marks	Number of Questions carrying 4 marks	Number of Questions carrying 5 marks	Number of Questions carrying 6 marks
1	Relations and Functions	8	3	1	1	-	-	-
2	Inverse Trigonometric Functions	8	3	1	1	-	-	-
3 4	Matrices and Determinants	20	6	3	1	-	1	
5	Continuity and Differentiability	16	4	2	1	-	1	-
6	Application of Derivatives	14	6	1	2	-	-	
7	Indefinite Integrals and Definite Integrals	14	2	2	1	-	1	
	Total Marks	80	24	20	21		15	

DAV PUBLIC SCHOOLS, JHARKHAND ZONE-F

Monthly Syllabus for Class XII (21-22) Subject: Physical Education (048)

Month - April & May

Unit I Planning in Sports

Unit II Sports & Nutrition

Month - June & July

Unit III Yoga& Lifestyle

Unit IV Physical Education & Sports for CWSN(Children with Special Needs-Divyang)

Month - August

Unit V Children & Women in Sports

Unit VI Test & Measurement in Sports

Month - September

Unit VII Physiology & Injuries in Sports Unit VIII Biomechanics & Sports

Month - October

Unit IX Psychology & Sports

Month - November

Unit X Training in Sports

Month – December & January

• Revision

Term – 1 Blueprint for the subject PHE for the session 2021-22 Class: XII

Full Mark: 70(Th.) + 30 (Pr)

Chapter No.	Chapter Name	Weightage	No of questions carrying 1 mark	No of questions carrying 3 marks	No of questions carrying 3 marks	No of questions carrying 5 marks
1	Planning in Sports	15	2	1	2	1
2	Sports & Nutrition	15	2	1	2	1
3	Yoga & Lifestyle	15	2	1	2	1
4	Physical education and sports for CWSN (children with special needs - Divyang)	10	4		2	
5	Children & Women in Sports	15	2	1	2	1
		70 MARKS	(1 x 12 = 12)	(2 x 4 = 12)	(3 x 10 = 30)	(5 x 4 = 20)

D.A.V PUBLIC SCHOOLS F-ZONE

DISTRIBUTION OF SYLLABUS MONTH WISE

SUBJECT: CHEMISTRY CLASS:XII

MONTHS

APRIL -Unit I: Solid State

insulators and n and p type semiconductors.

Classification of solids based on different binding forces: molecular, ionic, covalent and metallic solids, amorphous and crystalline solids (elementary idea). Unit cell in two dimensional and three dimensional lattices, calculation of density of unit cell, packing in solids, packing efficiency, voids, number of atoms per unit cell in a cubic unit cell, point defects, electrical and magnetic properties. Band theory of metals, conductors, semiconductors and

Unit II: Solutions

Types of solutions, expression of concentration of solutions of solids in liquids, solubility of gases in liquids, solid solutions, Raoult's law, colligative properties - relative lowering of vapour pressure, elevation of boiling point, depression of freezing point, osmotic pressure, determination of molecular masses using colligative properties, abnormal molecular mass, Van't Hoff factor.

MAY- Unit III: Electrochemistry

Redox reactions, EMF of a cell, standard electrode potential, Nernst equation and its application to chemical cells, Relation between Gibbs energy change and EMF of a cell, conductance in electrolytic solutions, specific and molar conductivity, variations of conductivity with concentration, Kohlrausch's Law, electrolysis and law of electrolysis (elementary idea), dry cell-electrolytic cells and Galvanic cells, lead accumulator, fuel cells, corrosion.

Unit IV: Chemical Kinetics

Rate of a reaction (Average and instantaneous), factors affecting rate of reaction: concentration, temperature, catalyst; order and molecularity of a reaction, rate law and specific rate constant, integrated rate equations and half-life (only for zero and first order reactions), concept of collision theory (elementary idea, no mathematical treatment), activation energy, Arrhenius equation.

JUNE-UnitV: Surface Chemistry

Adsorption - physisorption and chemisorption, factors affecting adsorption of gases on solids, catalysis: homogenous and heterogenous, activity and selectivity of solid catalysts; enzyme catalysis, colloidal state: distinction between true solutions, colloids and suspension; lyophilic, lyophobic, multimolecular and macromolecular colloids; properties of colloids; Tyndall effect, Brownian movement, electrophoresis, coagulation, emulsion - types of emulsions.

Unit VI: General Principles and Processes of Isolation of Elements

Principles and methods of extraction - concentration, oxidation, reduction electrolytic method and refining; occurrence and principles of extraction of
aluminium, copper, zinc and iron.

JULY-Unit VII:p-Block Elements

Group -15 Elements: General introduction, electronic configuration, occurrence, oxidation states, trends in physical and chemical properties; Nitrogen preparation properties and uses; compounds of Nitrogen: preparation and properties of Ammonia and Nitric Acid, Oxides of Nitrogen (Structure only); Phosphorus - allotropic forms, compounds of Phosphorus: Preparation and properties of Phosphine, Halides and Oxoacids (elementary idea only).

Unit VIII: d and f Block Elements

General introduction, electronic configuration, occurrence and characteristics of transition metals, general trends in properties of the first row transition metals – metallic character, ionization enthalpy, oxidation states, ionic radii, colour, catalytic property, magnetic properties, interstitial compounds, alloy formation, preparation and properties of K2Cr2O7 and KMnO4.

AUGUST-Unit IX: Coordination Compounds

Coordination compounds - Introduction, ligands, coordination number, colour, magnetic properties and shapes, IUPAC nomenclature of mononuclear coordination compounds. Bonding, Werner's theory, VBT, and CFT; structure and stereoisomerism, importance of coordination compounds (in qualitative analysis, extraction of metals and biological system).

Unit X: Haloalkanes and Haloarenes.

Haloalkanes: Nomenclature, nature of C–X bond, physical and chemical properties, optical rotation mechanism of substitution reactions.

Haloarenes: Nature of C–X bond, substitution reactions (Directive influence of halogen in monosubstituted compounds only).

SEPTEMBER-Uses and environmental effects of - dichloromethane, trichloromethane, tetrachloromethane, iodoform, freons, DDT.

FIRST TERM EXAMINATION

OCTOBER- Unit XI: Alcohols, Phenols and Ethers

Alcohols: Nomenclature, methods of preparation, physical and chemical properties (of primary alcohols only), identification of primary, secondary and tertiary alcohols, mechanism of dehydration, uses with special reference to methanol and ethanol.

Phenols: Nomenclature, methods of preparation, physical and chemical properties, acidic nature of phenol, electrophilic substitution reactions, uses of phenols.

Ethers: Nomenclature, methods of preparation, physical and chemical properties, uses.

Unit XII: Aldehydes, Ketones and Carboxylic Acids

Aldehydes and Ketones: Nomenclature, nature of carbonyl group, methods of preparation, physical and chemical properties, mechanism of nucleophilic addition, reactivity of alpha hydrogen in aldehydes, uses.

Carboxylic Acids: Nomenclature, acidic nature, methods of preparation, physical and chemical properties; uses.

Unit XIII: Amines

Amines: Nomenclature, classification, structure, methods of preparation, physical and chemical properties, uses, identification of primary, secondary and tertiary amines

NOVEMBER-XIII: Amines (CONT.)

.Diazonium salts: Preparation, chemical reactions and importance in synthetic organic chemistry.

Unit XIV: Biomolecules

Carbohydrates - Classification (aldoses and ketoses), monosaccharides (glucose and fructose), D-L configuration oligosaccharides (sucrose, lactose, maltose), polysaccharides (starch, cellulose, glycogen); Importance of carbohydrates.

Proteins -Elementary idea of - amino acids, peptide bond, polypeptides, proteins, structure of proteins - primary, secondary, tertiary structure and quaternary structures (qualitative idea only), denaturation of proteins; enzymes. Hormones - Elementary idea excluding structure.

Vitamins - Classification and functions

Unit XV: Polymers

Classification - natural and synthetic, methods of polymerization (addition and condensation), copolymerization, some important polymers: natural and synthetic like polythene, nylon polyesters, bakelite, rubber. Biodegradable and non-biodegradable polymers.

Unit XVI: Chemistry in Everyday life

Chemicals in medicines - analgesics, tranquilizers antiseptics, disinfectants, antimicrobials, antifertility drugs, antibiotics, antacids, antihistamines.

Chemicals in food - preservatives, artificial sweetening agents, elementary idea of antioxidants.

DECEMBER – REVISION OF WHOLE SYLLABUS

JAN- PRE-BOARD EXAMINATION

BLUE PRINT OF THE QUESTION PAPER FOR FIRST TERMINAL EXAMINATION 21-22

	1- MARK	2- MARKS	3-MARKS	5-MARKS
TOPIC	QUESTION	QUESTION	QUESTION	QUESTION
SOLID STATE	2	1	1	
Solutions			1	1
Electrochemistry	4	2		
Chemical Kinetics	1	2	1	
Surface Chemistry	1	1	1	
p-Block Elements	7			1
d and f Block			1	1
Elements			1	1
Coordination Compounds	3		1	
Haloalkanes and Haloarenes	2	1	1	
TOTAL =	20 QUESTION	7 QUESTION	7 QUESTION	5 QUESTION

DAV PUBLIC SCHOOL JHARKHAND ZONE-F

SESSION -2021-2022

CLASS XII

UNIT	TITLE	MARKS
VI	Reproduction	14
VII Genetics and Evolution		18
VIII	Biology and Human Welfare	14
IX	Biotechnology and its Applications	10
X	Ecology and Environment	14
	TOTAL	70

FIRST-TERM SYLLABUS (APRIL-AUGUST)

Unit-VI Reproduction

Chapter-1: Reproduction in Organisms

Reproduction, a characteristic feature of all organisms for continuation of species; modes of reproduction - asexual and sexual reproduction; asexual reproduction - binary fission, sporulation, budding, gemmule formation, fragmentation; vegetative propagation in plants; events in sexual reproduction.

Chapter-2: Sexual Reproduction in Flowering Plants

Flower structure; development of male and female gametophytes; pollination - types, agencies and examples; outbreeding devices; pollen-pistil interaction; double fertilization; post fertilization events - development of endosperm and embryo, development of seed and formation of fruit; special modesapomixis, parthenocarpy, polyembryony; Significance of seed dispersal and fruit formation.

Chapter-3: Human Reproduction

Male and female reproductive systems; microscopic anatomy of testis and ovary; gametogenesis - spermatogenesis and oogenesis; menstrual cycle; fertilisation, embryo development upto blastocyst formation, implantation; pregnancy and placenta formation (elementary idea); parturition (elementary idea); lactation (elementary idea).

Chapter-4: Reproductive Health

Need for reproductive health and prevention of Sexually Transmitted Diseases (STDs); birth control-need and methods; medical termination of pregnancy (MTP); amniocentesis; infertility and assisted reproductive technologies - IVF, ZIFT, GIFT, AI (brief overview).

Unit-VII Genetics and Evolution

Chapter-5: Principles of Inheritance and Variation

Heredity and variation, Mendelian inheritance; deviations from Mendelism – incomplete dominance, codominance, multiple alleles and inheritance of blood groups, pleiotropy; elementary idea of polygenic inheritance; chromosome theory of inheritance; chromosomes and genes; linkage and crossing over; Sex determination - in human being, birds, grasshopper and honey bee; Mutation, Pedigree analysis, sex linked inheritance - haemophilia, colour blindness; Mendelian disorders in humans –sickle cell anaemia, Phenylketonuria, thalassemia; chromosomal disorders in humans; Down's syndrome, Turner's and Klinefelter's syndromes.

Chapter-6: Molecular Basis of Inheritance

Structure of DNA and RNA; DNA packaging; Search for genetic material and DNA as genetic 8 material; DNA replication; Central Dogma; transcription, genetic code, translation; gene expression and regulation - lac operon; Human genome project; DNA fingerprinting.

Chapter-7: Evolution

Origin of life; biological evolution and evidences for biological evolution (paleontology, comparative anatomy, embryology and molecular evidences); adaptive radiation; Biological evolution: Lamarck's theory of use and disuse of organs, Darwin's theory of evolution; mechanism of evolution - variation (mutation and recombination) and natural selection with examples, types of natural selection; Gene flow and genetic drift; Hardy - Weinberg's principle; brief account of evolution; human evolution.

Unit-VIII Biology and Human Welfare

Chapter-8: Human Health and Diseases

Pathogens; parasites causing human diseases (malaria, dengue, chikungunya, filariasis, ascariasis, typhoid, pneumonia, common cold, amoebiasis, ring worm) and their control; Basic concepts of immunology - vaccines; cancer, HIV and AIDS; Adolescence - drug and alcohol abuse.

PRE - BOARD SYLLABUS(OCTOBER-NOVEMBER)

(Pre – Board Syllabus also includes First-Term Syllabus)

Chapter-9: Strategies for Enhancement in Food Production

Animal husbandry, Plant breeding, tissue culture, single cell protein.

Chapter-10: Microbes in Human Welfare

Microbes in food processing, industrial production, Antibiotics; production and judicious use, sewage treatment, energy generation and microbes as bio-control agents and bio-fertilizers.

Unit-IX Biotechnology and its Applications

Chapter-11: Biotechnology

- Principles and Processes Genetic Engineering (Recombinant DNA Technology).

Chapter-12: Biotechnology and its Application

Application of biotechnology in health and agriculture: genetically modified organisms - Bt crops; RNA interference, Human insulin, gene therapy; molecular diagnosis; transgenic animals; biosafety issues, biopiracy and patents.

Unit-X Ecology and Environment

Chapter-13: Organisms and Populations

Organisms and environment: Habitat and niche, abiotic factors, ecological adaptations; population interactions - mutualism, competition, predation, parasitism, commensalism; population attributes - growth, birth rate and death rate, age distribution.

Chapter-14: Ecosystem

Ecosystem: structure and function; productivity and decomposition; energy flow; pyramids of number, biomass, energy; nutrient cycles (carbon and phosphorous); ecological succession; ecological services - carbon fixation, pollination, seed dispersal, oxygen release (in brief).

Chapter-15: Biodiversity and Conservation Biodiversity

- Concept, levels, patterns, importance; loss of biodiversity; biodiversity conservation; hotspots, endangered organisms, extinction, Red Data Book, Sacred Groves, biosphere reserves, national parks, wildlife, sanctuaries and Ramsar sites.

Chapter-16: Environmental Issues

Air pollution and its control; water pollution and its control; agrochemicals and their effects; solid waste management; radioactive waste management; greenhouse effect and climate change impact and mitigation; ozone layer depletion; deforestation; case study exemplifying success story addressing environmental issue(s).

PRACTICALS

Time allowed: 3 Hours

Evaluation sche	Marks	
One Major Experiment 5, 6, 8, 9,	5	
One Minor Experiment 2, 3, 4	4	
Slide Preparation 1, 7	5	
Spotting	7	
Practical Record + Viva Voce	Credit to the students' work over	4
Investigatory Project and its Project and		
its Record + Viva Voce	5	
Total	•	30

- 1. Prepare a temporary mount to observe pollen germination.
- 2. Collect and study soil from at least two different sites and study them for texture, moisture content, pH and water holding capacity. Correlate with the kinds of plants found in them.
- 3. Collect water from two different water bodies around you and study them for pH, clarity and presence of any living organism.
- 4. Study the presence of suspended particulate matter in air at two widely different sites.
- 5. Study the plant population density by quadrat method.
- 6. Study the plant population frequency by quadrat method.
- 7. Prepare a temporary mount of onion root tip to study mitosis.
- 8. Study the effect of different temperatures and three different pH on the activity of salivary amylase on starch.
- 9. Isolate DNA from available plant material such as spinach, green pea seeds, papaya, etc.

B. Careful observation of the following (Spotting):

- 1. Flowers adapted to pollination by different agencies (wind, insects, birds).
- 2. Pollen germination on stigma through a permanent slide or scanning electron micrograph.
- 3. Identification of stages of gamete development, i.e., T.S. of testis and T.S. of ovary through permanent slides (from grasshopper/mice).
- 4. Meiosis in onion bud cell or grasshopper testis through permanent slides.
- 5. T.S. of blastula through permanent slides (Mammalian).
- 6. Mendelian inheritance using seeds of different colour/sizes of any plant.
- 7. Prepared pedigree charts of any one of the genetic traits such as rolling of tongue, blood groups, 10 ear lobes, widow's peak and colourblindness.
- 8. Controlled pollination emasculation, tagging and bagging.
- 9. Common disease causing organisms like Ascaris, Entamoeba, Plasmodium, any fungus causing ringworm through permanent slides, models or virtual images. Comment on symptoms of diseases that they cause.
- 10. Two plants and two animals (models/virtual images) found in xeric conditions. Comment upon their morphological adaptations.
- 11. Two plants and two animals (models/virtual images) found in aquatic conditions. Comment upon their morphological adaptations.

BLUE PRINT FIRST TERMINAL EXAMINATION 2021-22

		SECTION-A	SECTION-B	SECTION-C	SECTION-D	SECTION-E	
UNIT	TITLE	VSA (1 marks)	CASE BASED QUESTIONS	SA (2 marks)	LA-I (3 marks)	LA-II (5 marks)	OVERALL
VI	Reproduction in Organisms	2	1				28
Reproducton	Sexual Reproduction in Flowering Plants	1		1	1		
	Human Reproduction	1		1		1	
	Reproductive Health	2		1	1		
VII	Principles of Inheritance and Variation	2	1	1		1	32
Genetics and Evolution	Molecular Basis of Inheritance	2			1	1	
Evolution	Evolution	3		1	1		
VIII Biology and Human Welfare	Human Health and Diseases	1	1	1	1		10
	TOTAL	14(14)=14	3(14)	6(2)=12	5(3)=15	3(5)=15	70

Typology of Questions →		Section A	Section B	Section C	Section D	Section E		
			Case-based	SA	LA-I	LA-II	TOTAL	%
Competencies ↓		(1 marks)	Questions	(2 marks)	(3 marks)	(5 marks)		
Demonstrate	Remembering	4 (1) =4		1 (2) =2	1 (3) =3	1 (5) =5	14	20%
Knowledge and Understanding	Understanding	7 (1) =7	1 (5) =5	3 (2) =6	1 (3) =3		21	30%
Application of Knowledge / Concepts		1 (1) =1	1(5) = 5	2 (2) =4	2 (3) = 6	1 (5) = 5	21	30%
Formulate, Analyse, Evaluate and Create		2 (1) =2	1 (4) = 4		1 (3) = 3	1 (5) = 5	14	20%
Total		14(14) =14	3 (14)	6 (2) = 12	5 (3) = 15	3 (5) = 15	31 (70)	100

DAV PUBLIC SCHOOLS , JHARKHAND ZONE -F

Syllabus for 2021-22

CLASS: XII

SUBJECT: COMPUTER SCIENCE

Month	Unit	Topics
APRIL 2021	UNIT1	1.Revision of Python topics covered in Class XI.
	Computational Thinking and	2. Functions: types of function (built-in functions, functions defined in
	Programming - 2	module,
	(40 MARKS)	
MAY 2021	UNIT 1	1.Function contd.
	Computational Thinking and	user defined functions), creating user defined function, arguments
	Programming - 2	and parameters,
		default parameters, positional parameters, function returning
		value(s), flow of execution, scope of a variable (global scope, local
		scope)
		2. Python libraries: creating python libraries
JUNE 2021	UNIT 1	Text file: opening a text file, text file open modes (r, r+, w, w+, a, a+),
	Computational Thinking and	closing a text file, opening a file using with clause, writing/appending
	Programming - 2	data to a text file using write() and writelines(), reading from a text
		file using read(), readline() and readlines(), seek and tell methods,
		manipulation of data in a text file
JULY 2021	UNIT 1	1.Binary file: basic operations on a binary file: open using file open
	Computational Thinking and	modes (rb, rb+, wb, wb+, ab, ab+), close a binary file, import pickle
	Programming -2	module, dump() and load() method, read, write/create, search,
		append and update operations in a binary file
		2. CSV file: import csv module, open / close csv file, write into a csv
		file using csv.writerow() and read from a csv file using csv.reader()
		3.Database concepts: introduction to database concepts and its need
	Unit III: Database	4. Relational data model: relation, attribute, tuple, domain, degree,
	Management	cardinality, keys (candidate key, primary key, alternate key, foreign
	(20 MARKS)	key)

ALICUICT		
AUGUST	Unit III: Database	Structured Query Language: introduction, Data Definition Language and
2021	Management	Data Manipulation Language, data type (char(n), varchar(n), int, float,
		date), constraints (not null, unique, primary key), create database, use
		database, show databases, drop database, show tables, create table,
		describe table, alter table (add and remove an attribute, add and
		, , , , , , , , , , , , , , , , , , ,
		remove primary key), drop table, insert, delete, select, operators
		(mathematical, relational and logical), aliasing, distinct clause, where
		clause, in, between, order by, meaning of null, is null, is not null, like,
		update command, delete command, aggregate functions (max, min,
		avg, sum, count), group by, having clause, joins: cartesian product on
		two tables, equi-join and natural join
SEPTEMBER	Unit III: Database	Interface of python with an SQL database: connecting SQL with Python,
2021	Management	performing insert, update, delete queries using cursor, display data by
		using fetchone(), fetchall(), rowcount, creating database connectivity
		applications
		REVISION
		FIRST TERMINAL EXAMINATION

OCTOBER 2021	UNIT 1 Computational Thinking and Programming -2	1.Recursion: simple programs with recursion: sum of first n natural numbers, factorial, fibonacci series 2. Idea of efficiency: number of comparisons in Best, Worst and Average case for linear search
NOVEMBER 2021	UNIT 1 Computational Thinking and Programming -2	1.Data Structure: Stack, operations on stack (push & pop), implementation of stack using list. Introduction to queue, operations on queue (enqueue, dequeue, is empty, peek, is full), implementation of queue using list.
	Unit II: Computer Networks (10 MARKS)	2.Evolution of networking: introduction to computer networks, evolution of networking (ARPANET, NSFNET, INTERNET) Data communication terminologies: concept of communication, components of data communication (sender, receiver, message, communication media, protocols), measuring capacity of communication media (bandwidth, data transfer rate), IP address, switching techniques (Circuit switching, Packet switching)

DECEMBER	Unit II: Computer	1.Transmission media: Wired communication media (Twisted pair
2021	Networks	cable, Co-axial cable, Fiber-optic cable), Wireless media (Radio waves,
		Micro waves, Infrared waves)
		 Network devices (Modem, Ethernet card, RJ45, Repeater, Hub,
		Switch, Router, Gateway, WIFI card)
		 Network topologies and Network types: types of networks (PAN, LAN,
		MAN, WAN), networking topologies (Bus, Star, Tree)
		• Network protocol: HTTP, FTP, PPP, SMTP, TCP/IP, POP3, HTTPS,
		TELNET, VoIP, wireless/mobile communication protocol such as GSM,
		GPRS and WLL
		 Mobile telecommunication technologies: 1G, 2G, 3G, 4G and 5G
		• Introduction to web services: WWW, Hyper Text Markup Language
		(HTML), Extensible Markup Language (XML), domain names, URL,
		website, web browser, web servers, web hosting
		REVISION
		PREBOARD EXAMINATION

BLUE PRINT OF QUESTION PAPER FOR FIRST TERMINAL EXMINATION

			=			
UNIT	VSA	SA	SA	LA	LA	TOTAL
ONII	1 MARKS	2 MARKS	3 MARKS	4 MARKS	5 MARKS	
REVIEW OF STD XI	8	2				12
FUNCTIONS	3	2				7
PACKAGES		1	1			5
TEXT FILE		1	1			5
BINARY FILE		1			1	7
CSV FILE				1		4
DATA BASE CONCEPTS	2	2				6
SQL	2	1	1	1	2	21
INTRFACE OF PYTHON WITH			1			3
MYSQL						
	15	10	4	2	3	70
	(1x15=15)	(2x10=20)	(3X4=12)	(4X2=8)	(5X3=15)	

SYLLABUS OF INFORMATICS PRACTICES (PYTHON) 2021-22 CLASS- XI

ORGANIZATION MAY
WITH PYTHON JUNE
NTALS JULY
AUGUST
ITERATIVE SEPTEMBER
N SEPTEMBER
N SEPTEMBER
OCTOBER
DATA
NOVEMBER
NOVEMBER DECEMBER

1. Distribution of Marks and Periods

12

12

EMERGING TRENDS

Unit	Unit Name	Marks	Periods	Periods	Total
No			Theory	Practical	Period
1	Introduction to computer system	10	10	-	10
2	Introduction to Python	25	35	28	63
3	Database concepts and the Structured Query Language	30	23	17	40
4	Introduction to Emerging Trends	5	7	-	7
	Practical	30	-	-	-
	Total	100	75	45	120

FEBRUARY

SUBJECT: INFORMATICS PRACTICES (New)

Code: 065. BLUE PRINT (HALF YEARLY)

SNO	CHAPTER	NAME OF CHAPTER	MONTHS	WEIGHTAGE
	NO.			
1	1	BASIC COMPUTER ORGANIZATION	MAY	10
2	2	GETTING STARTED WITH PYTHON	JUNE	10
3	3	PYTHON FUNDAMENTALS	JULY	15
4	4	DATA HANDELING	AUGUST	15
5	5	CONDITIONAL AND ITERATIVE	SEPTEMBER	20
		STATEMENTS		
6		PRACTICAL		30
				100
		TOTAL		100

DAV PUBLIC SCHOOLS, JHARKHAND ZONE-F

Syllabus for 2021-22

BIOTECHNOLOGY (Code No. 045)

CLASS XII (2021-22)

COURSE- STRUCTURE- (THEORY)

One Paper Max. Marks 70+30 Time: 3 hrs

UNITS		MARKS	PERIODS
Unit V	Protein and Gene	40	100
	Manipulation		
Unit VI	Cell Culture and	30	80
	Genetic		
	Manipulation		
	Practicals	30	60
	Total	100	240

One paper Time: 3 hrs. Total Marks: 70

FIRST-TERM SYLLABUS (APRIL-AUGUST)

Unit-V Protein and Gene Manipulation

40 Marks

Chapter-1: Recombinant DNA Technology

Introduction, Tool of DNA technology, Making DNA, Introduction of recombinant DNA into host cells, Identification of recombinants, Polymerase Chain Reaction (PCR), Hybridization techniques, DNA library, DNA Sequencing, Site-directed Mutagenesis

Chapter-2: Protein Structure and Engineering

Introduction to the world of proteins, 3-D shape of proteins, Structure-function Relationship in proteins, Purification of proteins, Characterization of proteins, Protein based products, Designing proteins (Protein Engineering)

Chapter-3: Genomics, Proteomics and Bioinformatics

Introduction, Genome, Sequencing projects, Gene prediction and counting, Genome similarity, SNPand Comparative genomics, Functional genomics, Proteomics, History of bioinformatics, Sequences and nomenclature, Information sources, Analysis using bioinformatics tools.

BIOTECHNOLOGY (Code No. 045) 5

Unit-VI Cell Culture and Genetic Manipulation 30 Marks

Chapter-1: Microbial Cell Culture and its Applications

Introduction, Microbial nutrition and culture techniques, Measurement and kinetics of microbial growth, Scale-up of microbial process, Isolation of microbial products, Strain isolation and improvement, Applications of microbial culture technology, Biosafety issues in microbial technology

PRE - BOARD SYLLABUS(OCTOBER-NOVEMBER) (Pre – Board Syllabus also includes First-Term Syllabus)

Chapter -2: Plant Cell Culture and Applications

Introduction, Cell and tissue culture techniques, Applications of cell and tissue culture, Gene transfer Methods in plants, Transgenic plants with beneficial traits, Biosafety of transgenic plants

Chapter-3: Animal Cell Culture and Applications

Introduction, Animal cell culture techniques, Characterization of cell lines, Methods of gene delivery into cells, Scale-up of animal culture process, Applications of animal cell culture, Stem cell technology, Tissue engineering

BIOTECHNOLOGY (Code No. 045) BLUE PRINT

FIRST TERMINAL EXAMINATION 2021-22

UNIT	TOPIC	VSQ (1marks)	CASE BASED QUES	SA (2marks)	LA-I (3marks)	LA-II (5marks)	OVERALL
V Protein and	Recombinant DNA Technology	2	1(4)	3	1	1	20
Gene Manipulation	Protein Structure and Engineering	2	1(4)	3	1	1	20
	Genomics, Proteomics and Bioinformatics	5		2	2		15
VI Cell Culture and Genetic Manipulation	Microbial Cell Culture and its Applications	5		1	1	1	15
	TOTAL	1(14)=14	2(8)=8	2(9)=18	3(5)=15	5(3)=15	70

DAV PUBLICSCHOOLS, JHARKHAND ZONE - F SESSION 2021-2022 CLASS XII SUBJECT - MATHEMATICS -241 [Commerce]

Month	Chapter's Name	Topic
April	Number Qualifications	Modulo Arithmetic, Congruence Modulo, Simple Arithmetic
	And Numerical	Functions, Alligation and Mixture, Boats and Streams , Pipes
	Applications	and Cisterns, Races and Games, Partnership, Scheduling ,
		Numerical Inequalities .
May	Algebra	Matrices and types of matrices, Equality of matrices,
		Transpose of a matrix, Symmetric and Skew symmetric
		matrix , Algebra of Matrices, Determinants, Inverse of a
		matrix, Solving system of simultaneous equations using
		matrix method, Cramer's rule and row reduction method
		Simple applications of matrices and determinants
		including Leontiff input output model for two variables.
June	Calculus	Higher Order Derivatives, Application of Derivatives, Marginal
		Cost and Marginal Revenue using derivatives, Increasing
		/Decreasing Functions , Maxima and Minima,
July	Integration and its	Integration , Indefinite Integrals as family of curves, Definite
	Applications ,	Integrals as area under the curve, Application of integration.
	Differential Equations	Differential Equations, Formulating and Solving Differential
	and Modeling	Equations, Application of Differential Equations
August	PROBABILITY	Probability Distribution, Mathematical Expectation, Variance,
	DISTRIBUTIONS	Binomial Distribution, Poison Distribution, Normal Distribution
September	INFERENTIAL	Population and Sample , Parameter and Statistics and
	STATISTICS	Statistical Interferences, t-Test (one sample t-test and two
		independent groups t-test).
October	INDEX NUMBERS AND	Index Numbers, Construction of Index numbers, Test of
	TIME BASED DATA,	adequacy of Index numbers, Time Series , Components of
	FINANCIAL	Time Series , Time Series analysis for univariate data, Secular
	MATHEMATICS	Trend , Methods of Measuring trend .Perpetuity, Sinking
		Funds , Valuation of Bonds, Calculation of EMI , Calculation of
		Returns, Nominal Rate of Return, Compound Annual Growth
		Rate, Stock, Shares and Debentures , Linear method of
		Depreciation
November	LINEAR PROGRAMMING	Introduction and related terminology, Mathematical
		formulation of Linear, Programming Problem , Different types
		of Linear Programming Problems, Graphical method of

solution for problems in two variables, Feasible and Infeasible					
Regions , Feasible and infeasible solutions, optimal feasible					
solution					

No.	Units	No. of Periods	Marks
	Numbers, Quantification and Numerical Applications	30	09
	Algebra	20	10
III	Calculus	50	15
IV	Probability Distributions	35	10
V	Inferential Statistics	10	05
VI	Index Numbers and Time-based data	30	10
VII	Financial Mathematics	50	15
VIII	Linear Programming	15	06
	Total	240	80
	Internal Assessment		20

DAV PUBLIC SCHOOLS, JHARKHAND ZONE-F

Syllabus for SESSION 2021-2022

SYLLABUS CUM BLUEPRINT (STD- XII)(SA- 1 /2021-22

S NO.	CHAPTERS	MARKS	1 mark	2 marks	3 marks	5 marks
	NITIMBED OTTAL IEICATIONS AND					
1	NUMBER QUALIFICATIONS AND APPILICATIONS	13	6	2	1	****
1	MITEICHTIONS	13	0		1	
2	MATRIX AND DETERMINANTS	13	5	1	1	1
3	SOLVING THE EQUATIONS	3	1	1	****	****
4	LINEAR INEQUALITY	6	1	1	1	****
5	APPLICATIONS OF DERIVATIVES	13	3	1	1	1
6	INTEGRATIONS	10	3	2	1	****
7	APPLICATIONS OF INTEGRATIONS	12	2	1	1	1
8	DIFFERENTIATE EQUATIONS	8	3	1	1	****
	mom . v	0.0	2.4	20	2.1	1.7
	TOTAL	80	24	20	21	15

APPLIED MATHEMATICS (241)

DAV PUBLIC SCHOOLS, JHARKHAND ZONE-F SESSION 2021-2022

Class XII Accountancy (055)

UNIT	NAME	MONTH	SA 1	SA 2
PARTA				
1.	Financial Statements of Not-for-ProfitOrganisations	April	15	10
2.	Accounting for Partnership Firms			
	a. Fundamental and Valuation of Goodwill	May		
	b. Change in Profit Sharing Ratio	May		
	c. Admission of a Partner	June-July	48	30
	d. Retirement of a Partner	July		
	e. Death of a Partner	July		
	f. Dissolution of Partnership Firm	August		
3.	Accounting for Companies			
	a. Accounting for Share capital (without pro-rata)	August	17	
	HALF YEARLY EXAMINATION (SEPTEMBER)			$\left\ \cdot \right\ _{20}$
				<u> </u>
	b. Accounting for shares (continued)	October		
	c. Accounting for debentures (Issue & Redemption)	October		
PART				
В				
4.	Analysis of Financial Statements			
	a. Financial statements of a company	November		
	b. Financial statement analysis	То		12
	c. Financial tools	December		
	d. Ratio Analysis			
5.	Cash Flow Statement	December		08
PART	PROJECT WORK		20	20
C				
	TOTAL		100	100

HALF YEARLY BLUE PRINT- ACCOUNTANCY XII

UNIT	TOPIC	(1	(3marks)	(4marks)	(6marks)	(8marks)	Total
		Mark)					
1.	Financial Statement of NPO	2	1	1	1		15
2.	Accounting for Partnership Firm	13	1	3	2	1	48
3.	Accounting for Companies a. Accounting for share capital	5		1		1	17
	Total	1x20	3x2	4x5	6x3	8x2	80

ANNUAL EXAMINATION -BLUE PRINT- ACCOUNTANCY XII

UNIT	TOPIC	(1	(3marks)	(4marks)	(6marks)	(8marks)	Total
		Mark)					
1.	Financial Statement of NPO	1	1		1		10
2.	Accounting for Partnership Firm	10		3		1	30
3.	Accounting for Companies	2		1	1	1	20
4.	Analysis of Financial Statement	5	1	1			12
5.	Cash Flow Statement	2			1		08
	Total	1x20	3X2	4x5	6x3	8x2	80

DAV PUBLIC SCHOOLS, JHARKHAND ZONE-F

SYLLABUS FOR THE SESSION -2021-22

CLASS XII BUSINESS STUDIES (Code No. 054)

Theory: 80 Marks 3 hours Project: 20 Marks

Units	Chapter Name	Month	НҮ	ANNUAL
PART A	PRINCIPLES AND FUNCTIONS OF MANGEMENT			
1	Nature and Significance of Management	April	10	
2	Principles of Management	May	12	
3	Business Environment	June	10	16
4	Planning	July	10	
5	Organising	July- august	10	14
6	Staffing	August	10	
7	Directing	September	10	
8	Controlling	September- October	8	20
PART B	BUSINESS FINANCE AND MARKETING			
9	Financial Management	October		
10	Financial Markets	November		15
11	Marketing Management	November – December		
12	Consumer Protection	December		15
PART C	PROJECT WORK		20	20
	Total Marks		100	100

BLUE PRINT XII th BUSINESS STUDIES(2021-22)

	CHAPTER NAME	1M	3M	4M	6M	TOTAL
1	Nature and Significance of	12	2	2	1	32
	Management					
2	Principles of Management					
3	Business Environment					
4	Planning	4	2	1	1	20
5	Organising					
6	Staffing	4	-	3	2	28
7	Directing					
8	Controlling					
	TOTAL	20	4Q	6Q	4Q	80

MARK ANALYSIS						
MARKS	NO. OF QUESTION	TOT.(marks x no. Of question)	Optional/ Choice Question			
1	20	20	2			
3	4	12	2			
4	6	24	2			
6	4	24	2			
	34	80				

Note -- Blue print is as per the CBSE Sample paper (2020-21)

DAV PUBLIC SCHOOLS , JHARKHAND ZONE -F

Syllabus for 2021-22

Month-Wise Syllabus of Std – XII Session : 2021-22 Subject: Economics (30)

SUBJECT: ECONOMICS(030)

(2021-22)

Theory: 80 Marks Project: 20 Marks 3 Hours

<u> </u>	o Marks Floject . 20 Marks	3 Hours						
Units	Topics	Marks (SA1)	Marks Pre board					
Month	Topics							
April	Part A: Unit 1: National Income Accounting (Macro Economics)							
•	E \	Part B:Unit6:Development Experience (1947-90) & Economic Reforms since 1991						
May	Part A; Unit 1: Contd (Macro Economics)							
	Part B; Unit 6: Contd(Indian Economic Development)							
June	Part A: Unit 2: Money & Banking (Macro Economics)							
	Part B: Unit 7: Current Challenges facing Indian Economy: Poverty							
July	Part A: Unit 3:Determination of income & Employment							
	Part B: Unit 7: Current Challenges facing Indian Economy: Human C	Capital Formation						
Augus								
	Part B: Unit7:Current Challenges facing Indian Economy: Rural Dev	elopment						
Septembe								
	Commencement of Summative Assessment 1							
Octobe	\mathcal{E}							
	Part B: Unit 7:Current Challenges facing Indian Economy: Employm	ent						
Novemb								
	Part B: Unit 7: Current Challenges facing Indian Economy: Infrastruc	ture & Sustainabl	e Development					
Decemb								
	Part B: Unit8: Development Experience of India: A Comparison with neighbours							
January	Part B: Revision: unit 6 & 7							
	Pre- Board	1	1					
Part A	Introductory Macro Economics							
Unit 1	National Income & Related Aggregates	15	10					
Unit 2	Money & Banking	10	6					
Unit 3	Determination of income & Employment	15	12					
Unit 4	Govt Budget	NA	6					
Unit 5	Balance of Payment	NA	6					
Total		40	40					
Part B	Indian Economic Development							
Unit 6	Development Experience (1947-90) & Economic Reforms since 1991	25	12					
Unit 7	Current Challenges facing Indian Economy	15(Chapters	22					
		included:						
		Poverty,						
		Human						
		Capital						
		Formation& Rural						
I Init 0	Development Experience of India-A comparison with neighbours	Development)	12					
Unit 8	Development Experience of India-A comparison with neighbours	NA 40	40					
Total	Droject	40	40					
Part C	Project One comprehensive project in two parts	20	20					
	One comprehensive project in two parts First Part, of the project to be avaluated in SA1Evamination	20	20					
	First Part of the project to be evaluated in SA1Examination							
Grand	Second Part of the project will be evaluated in Annual Examination	100	100					
Total		100	100					
1 Utal								

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Std: XII

SUBJECT: ECONOMICS(030)

(2021-22)

Theory: 80 Marks Project : 20 Marks 3 Hours

Part A: Introductory Macro Economics

UNIT	CHAPTER	No. of Questions 1 mark	No. of Questions 3 marks	No. of Questions 4 mark	No. of Questions 6 mark	Total No. of Questions	Total Marks
1	National Income Accounting	5		1	1	7	15
2	Money & Banking		2	1		3	10
3.	Theory of Income & Employment	5		1	1	7	15
Total						17	40

Part B: Indian Economic Development

UNIT	CHAPTER	No. of Questions 1 mark	No. of Questions 3 marks	No. of Questions 4 mark	No. of Questions 6 mark	Total No. of Questions	Total Marks
6	Development Experience (1947- 90) & Economic Reforms since 1991	8	1	2	1	12	25
7	Current Challenges facing Indian Economy(Chapters included: Poverty, Human Capital Formation& Rural Development)	2	1	1	1	5	15
	Total	5		1	1	17	40

DAV PUBLIC SCHOOL, BISTUPUR, JAMSHEDPUR ZONE F

Geography(Code No. 029) (Session 2021 – 22)

MONTH WISE SYLLABUS

CLASS-12

PRESCRIBED BOOK-1- FUNDAMENTALS OF HUMAN GEOGRAPHY [NCERT] BOOK-2 - INDIA-PEOPLE AND ECONOMY [NCERT] PRACTICAL WORK IN GEOGRAPHY PART II [NCERT]

S.NO	MONTH	BOOK 1	BOOK 2	PRACTICAL
1	APRIL	UNIT-1 CH-1 HUMAN GEOGRAPHY- NATURE AND SCOPE Definition of Human Geography; Naturalization of Human and Humanization of Nature; Environment	UNIT-I) CH-1 POPULATION: DISTRIBUTION, DENSITY AND GROWTH, AND COMPOSITION Population: distribution, density and growth; composition of population - linguistic, religious; sex, rural-urban and occupational-regional variations in growth of population	
2	MAY	UNIT- 2 CH-2 THE WORLD POPULATION DISTRIBUTION, DENSITY AND GROWTH Population change-spatial patterns and structure; determinants of population change Population Composition - age-sex ratio; rural-urban composition CH-3 POPULATION COMPOSITION Sex composition; age structure; age pyramid; rural urban composition; literacy; occupational structure Chapter - 4: Human Development (Unit - I	CH-2 MIGRATION: TYPES, CAUSES, AND CONSEQUENCES Migration: international, national- causes and consequences	
3	JUNE	CH-4 HUMAN DEVELOPMENT Growth and development; the four pillars of human development; approaches of human development; measuring human development; International comparisons C	CH-3 HUMAN DEVELOPMENT Human development: selected indicators and regional patterns	

4	JULY	UNIT-3 CH-5 PRIMARY ACTIVITIES Primary activities - concept and changing trends; gathering, pastoral, mining, subsistence agriculture, modern agriculture; people engaged in agricultural and allied activities - some examples from selected countries CH-6 SECONDARY ACTIVITIES -concept; manufacturing: types - household, small scale, large scale; agro based and mineral based industries; people engaged in secondary activities - some examples from selected countries,	(UNIT II) CH-4-HUMAN SETTLEMENTS Rural settlements - types and distribution Urban settlements - types, distribution and functional classification CH-5 LAND RESOURCES AND AGRICULTURE Land resources- general land use; agricultural land use; geographical conditions and distribution of major crops (Wheat, Rice, Tea, Coffee, Cotton, Jute, Sugarcane and Rubber); agricultural development and problems	Type and Sources of data: Primary, Secondary and other sources
5	AUGUST	CH-7 TERTIARY AND QUATERNARY ACTIVITIES Tertiary activities-concept; trade, transport and tourism; services; people engaged in tertiary activities - some examples from selected countries	(UNIT-III) CH-6 WATER RESOURCES Water resources-availability and utilization-irrigation, domestic, industrial and other uses; scarcity of water and conservation methods- rain water harvesting and watershed management CH-7 MINERALS AND ENERGY RESOURCES Mineral and energy resources- distribution of metallic (Iron ore, Copper, Bauxite, Manganese); non- metallic (Mica, Salt) minerals; conventional (Coal, Petroleum, Natural gas and Hydroelectricity) and non-conventional energy sources (solar, wind, biogas) and conservation	Tabulating and processing of data; calculation of averages, measures of central tendency
6	SEPTEMBER	REVISION MAPS AND	SA1	SA1
7	OCTOBER	DIAGRAMS PRACTICALS		Poprocontation of
,	OCTOBER	UNIT- 3 CH-8 TRANSPORT AND COMMUNICATION Land transport - roads, railways; trans-continental railways Water transport- inland waterways; major ocean routes Air transport- Intercontinental air routes Oil	CH-8 MANUFACTURING INDUSTRIES Industries - types, factors of industrial location; distribution and changing pattern of selected industries-iron and steel, cotton textiles, sugar, petrochemicals, and knowledge based industries; impact	Representation of data- construction of diagrams: bars, circles and flowchart

		and gas pipelines Satellite communication and cyber space- importance	of liberalization, privatization and globalization on industrial location; industrial clusters CH-9 PLANNING AND SUSTAINBLE DEVELOPMENT IN INDIAN CONTEXT Planning in India- target group area planning (case study); idea of sustainable development (case study)	
8	NOVEMBER	UNIT-4 CH-9 INTERNATIONAL TRADE bases and changing patterns; ports as gateways of international trade; role of WTO in international trad	CH-10 TRANSPORT AND COMMUNICATION Transport and communication-roads, railways, waterways, and airways: oil and gas pipelines; Geographical information and communication net works CH-11 INTERNATIONAL TRADE International trade- changing pattern of India's foreign trade; sea ports and their hinterland and airports	Thematic maps; construction of dot; choropleth and isopleths maps, Data analysis and generation of diagrams, graphs and other visual diagrams using computers
9	DECEMBER	CH-10 HUMAN SETTLEMENTS Settlement types - rural and urban; morphology of cities (case study); distribution of mega cities; problems of human settlements in developing countries	CH-12-GEOGRAPHYCAL PERSPECTIVE ON SELECTED ISSUES AND PROBLEMS Environmental pollution; urbanwaste disposal Urbanization, rural- urban migration; problems of slums Land degradation	REVISION
10	JANUARY	REVISION AND PRE BOARD	REVISION AND PRE BOARD	REVISION AND PRE BOARD
11	FEBRUARY	EXAMINATION CONTINUES	EXAMINATION CONTINUES	EXAMINATION CONTINUES

Weightage to form of questions:

Type of Questions	LA(5MARK S)	SA(3MARKS)	OBJECTIVE(1 MARK)	MAP WORK (5 MARKS)	TOTAL
NO OF QUESTIONS	6	4	18	2	30
MARKS	30	12	18	10	70

Part	Units	Marks
Α	Fundamentals of Human Geography	35 Marks
	Unit 1: Human Geography	30
	Unit 2: People	
	Unit 3: Human Activities	
	Unit 4: Transport, Communication and Trade	
	Unit 5: Human settlements	
	Map Work	5

В	India: People and Economy	35 Marks
	Unit 6: People	30
	Unit 7: Human Settlements	
	Unit 8: Resources and Development	
	Unit 9: Transport, Communication and International	
	Trade	
	Unit 10: Geographical Perspective on selected issues and	
	problems	
	Map Work	5
С	Practical Work in Geography Part II	30 Marks
	Unit 1: Processing of Data and Thematic Mapping	15
	Unit 2: Field study or Spatial Information Technology	10
	Practical Record Book and Viva Voce	5

DAV PUBLIC SCHOOLS, JHARKHAND ZONE-F MONTHLY SYLLABUS 2021-22

SOCIAL SCIENCE CLASS- XII

	I	HISTORY XII: THEMES IN INDIANS HISTORY
S.N.	MONTH	UNIT/CHAPTER/CONTENT
1		PART-I - CHAPTER 1 : BRICKS, BEADS AND BONES
1	APRIL	THE STORY OF THE FIRST CITIES:Harappan Archaeology Broad overview: Early urban centers Story of discovery: Harappan civilization Excerpt: Archaeological report on a major site Discussion: How it has been utilized by archaeologists/historians PART-1- CHAPTER 2: KINGS, FARMERS AND TOWNS Political and Economic History: How Inscriptions tell a story. Broad overview: Political and economic History from the Mauryan to the Gupta period Story of discovery: Inscriptions and the Decipherment of the script. Shifts in the Understanding of political and economic history. Excerpt: Ashokan inscription and Gupta period land grant Discussion: Interpretation of inscriptions by historians.
2	MAY	PART-1- CHAPTER 3: KINSHIP, CASTE AND CLASS Social Histories: Using the Mahabharata Broad overview: Issues in social history, including caste, class, kinship and gender Story of discovery: Transmission and publications of the Mahabharata Excerpt: from the Mahabharata, illustrating how it has been used by historians. Discussion: Other sources for reconstructing social history PART-1-CHAPTER 4: THINKERS, BELIEFS AND BUILDINGSA History of Buddhism: Sanchi Stupa Broad overview: a) A brief review of religious histories of Vedic religion, Jainism, Vaishnavism, Shaivism (Puranic Hinduism) b) Focus on Buddhism. Story of discovery: Sanchi stupa. Excerpt: Reproduction of sculptures from Sanchi. Discussion: Ways in which sculpture has been interpreted by historians, other sources for reconstructing the history of Buddhism.
3	JUNE	Part-II CHAPTER 5: THROUGH THE EYES OF TRAVELLERS Medieval Society through Travellers' Accounts Broad Overview: outlines of social and cultural life as they appear in traveller's account. Story of their writings: A discussion of where they travelled, what they wrote and for whom they wrote. Excerpts: from Al Biruni, IbnBattuta, Francois Bernier. Discussion: What these travel accounts can tell us and how they have been interpreted by historians. PART-II- CHAPTER 6: BHAKTI- SUFI TRADITIONS Religious Histories: The Bhakti-Sufi Tradition Broad overview: a. Outline of religious developments during this period saints. b. Ideas and practices of the Bhakti-Sufi Story of Transmission: How Bhakti-Sufi compositions have been preserved. Excerpt: Extracts from selected Bhakti-Sufi works. Discussion: Ways in which these have been interpreted by historians.

4	JULY	PART-II – CHAPTER 7 : AN IMPERIAL CAPTIAL VIJAYANAGARANew Architecture:
		Hampi broad over view: a. Outline of new buildings during Vijayanagar period-
		temples, forts, irrigation facilities. b. Relationship between architecture and the
		political system Story of Discovery: Account of how Hampi was found. Excerpt:
		Visuals of buildings at Hampi Discussion: Ways in which historians have analyzed
		and interpreted these structures.
		PART-II-CHAPTER 8 : PEASANTS, ZAMINDARS AND THE STATE
		Agrarian Relations: The Ain-I Akbari Broad overview: a. Structure of agrarian
		relations in the 16th and 17th centuries. Patterns of change over the period.
		Story of Discovery: Account of the compilation and translation of Ain I Akbari
		Excerpt: from the Ain-I Akbari. Discussion: Ways in which historians have used
		texts to reconstruct history.
5	AUGUST	PART-II-CHAPTER 9 : KINGS AND CHRONICLES
		The Mughal Court: Reconstructing Histories through Chronicles Broad overview:
		a. Outline of political history15th -17thcenturies Discussion of the Mughal court
		and politics. Story of Discovery: Account of the production of court chronicles,
		and their subsequent translation and transmission. Excerpts: from the
		Akbarnama and Badshahnama Discussion: Ways in which historians have used
		the text store construct political histories.
		PART-III - CHAPTER 10 : COLONIALISM AND THE COUNTRYSIDE
		Colonialism and Rural Society: Evidence from Official Reports Broad overview: a.
		Life of zamindars, peasants and artisans in the late18thcentury b. East India
		Company, revenue settlements in various regions of India and surveys Changes
		over the nineteenth century Story of official records: An account of why official
		investigations into rural societies were under taken and the types of records and
		reports produced. Excerpts: From Fifth Report, Accounts of Frances Buchanan -
		Hamilton, and Deccan Riots Report.Discussion: What the official records tell and
		do not tell, and how they have been used by historians.
6	SEPTEMBER	HALF YEARLY EXAMINATION
	PORTION C	OF HALF YEARLY EXAMINATION – CONTENTS COVERED UP TO AUGUST
7	OCTORER	PART-III-CHAPTER 11: REBELS AND THE RAJ
7	OCTOBER	Representations of 1857 Broad overview: a. Theeventsof1857-58. b. Vision of
		·
		Unity c. How these events were recorded and narrated
		Focus: Lucknow Excerpts: Pictures of 1857.Extracts from contemporary accounts.
		Discussion: How the pictures of 1857 shaped British opinion of what had
		happened.
		PART-III-CHAPTER 12: COLONIAL CITIES Colonialism and Indian Towns Town Plans and Municipal Paparts Prood
		Colonialism and Indian Towns:Town Plans and Municipal Reports Broad

overview: History of towns in India, colonization and cities, hill stations, town planning of Madras, Calcutta and Bombay. Excerpts: Photographs and paintings. Plans of cities. Extract from town plan reports. Focus on Calcutta town planning Discussion: How the above sources can be used to reconstruct the history of

		towns. What these sources do not reveal.
8	NOVEMBER	PART-III- CHAPTER 13: MAHATMA GANDHI AND NATIONAL
		MOVEMENTS
		Mahatma Gandhi through Contemporary Eyes Broad overview: a. The Nationalist
		Movement 1918 -48. b. The nature of Gandhian politics and leadership. Focus:
		Mahatma Gandhi and the three movements and his last days as "finest hours"
		Excerpts: Reports from English and Indian language newspapers and other
		contemporary writings. Discussion: How newspapers can be a source of history
		PART-III -CHAPTER 14: UNDERSTANDING PARTITION
		Partition through Oral Sources Broad overview: a. Thehistoryofthe1940s. b.
		Nationalism, Communalism and Partition. Focus: Punjab and Bengal Excerpts:
		Oral testimonies of those who experienced partition Discussion: Ways in which
		these have been analyzed to reconstruct the history of the event
9	DECEMBER	PART-III -CHAPTER 15: FRAMING THE CONSTITUTION
		The Making of the Constitution an overview: a. Independence and then new
		nation state. b. The making of the Constitution Focus: The Constituent Assembly
		Debates Excerpts: from the debates. Discussion: What such debates reveal and
		how they can be analyzed.
		REVISION
10	JANUARY	PRE BOARD
11	FEBRUARY	REVISION
12	MARCH	BOARD EXAM

	HISTORY- CLASS XII SUBJECT CODE 027					
(Session 2021-22) TIME: 3 Hours Maximum Marks: 80						
S.NO	COMPETENCIES		MARKS	%WEITAGE		
1.	Remembering:	Exhibit memory of	40	50%		
	previously learned material by recalling facts					
	answers. Understand					
	Demonstrate understanding of facts and idea					
	translating, interpreting, giving descriptions a					
2.	Applying:	Solve problems to new	15	18.75%		
	situations by applying acquired knowledge, fa					
	different way					
3.	High Order Thinking Skills-	(Analysis & Synthesis	20	25%		
	Classify, Apply, solve, compare, contrast, or differentiate between different pieces of information; Organize and/or integrate unique pieces of					
	information from a variety of sources)	Evaluation-				
	(Appraise, Argue, judge, support, critique, an					
	of a decision or outcome, or to predict outco					
4.	Map skill-based question-	Identification, location,	5	6.25%		
	significance					
	TOTAL MARKS AND WEITAGE			100%		
1) This question paper comprises of six sections. Some questions have an internal choice 2) Section A: Question						

numbers 1 to 16 are objective type questions carrying 1 mark and should be answered in one word or one sentence each (*Only 15 will be attempted*)3) Section B: Question numbers 17 to 19 are Case Based/ Source Based having Multiple Choice questions. Each question has 4 sub-parts. Attempt any three sub-parts from each question.

- 4) Section C: Answer to questions carrying 3 marks (Question 20 to 23) should not exceed 100 words each.
- 5) Section D: Answer to questions carrying 8 marks (Question 24 to 26) should not exceed 350 words each.
- 6) Section E: Question number 27 to 29 are Source-based questions carrying 5 marks each.
- **7) Section F:** Question number 30 is a Map question that includes the identification and location of significant test items.

PROJECT WORK CLASS - XII (2021-22) ASSESSMENT Allocation of Marks (20)									
					The marks will be allocated under the following heads:				
							T		
S.NO	CRITERIA	MARKS							
1	Project Synopsis	2 Marks							
2	Data/Statistical analysis/Map work	3 Marks							
3	Visual/overall presentation	5 Marks							
4	Analysis/explanation and interpretation	5 Marks							
5	Bibliography	1 Marks							
6	Viva	4 Marks							
	TOTAL	20 Marks							

FEW SUGGESTIVE TOPICS FOR PROJECTS

- 1. The mysteries behind the mound of dead –Mohenjo-Daro
- 2. An In-depth study to understand Spiritual Archaeology in the Sub-Continent
- 3. Buddha's Path to Enlightenment
- 4. Insight and Reflection of Bernier's notions of The Mughal Empire
- 5. An exploratory study to know the women who created history
- 6. "Mahatma Gandhi" A legendary soul
- 7. To reconstruct the History of Vijayanagar through the Archaeology of Hampi
- 8. The emerald city of Colonial Era –BOMBAY
- 9. Vision of unity behind the first war of Independence
- 10. Divine Apostle of Guru Nanak Dev
- 11. Help, Humanity and Sacrifices during Partition
- 12. Glimpses inside Mughals Imperials Household
- 13. The process behind the framing of the Indian Constitution
- 14. The 'BrahmNirupam' of Kabir A journey to Ultimate Reality

DAV Public Schools , Jharkhand Zone -F Syllabus for class XII Political Science 2021-22

Month.	Chapter.	Marks
April	1.Cold War Era and Non-Alignment.	6
	2. Challenges of Nation-Building.	6
May.	1.The End of Bipolarity.	6
	2.Planning and Development.	6
June.	1.India's Foreign Policy.	6
July.	1.New Centres of Powers.	6
	2.Parties and the Party Systems in India	5
August	1.South Asia and the	6
	2.Contemporary World Democratic Resurgence.	5
September	1.United Nations and its Organisations.	4
October	1. Social and New Social Movements in India.	6
	2.Security in the Contemporary World.	4
November.	1.Environment and Natural Resources	4
	2.Regional Aspirations.	6
December.	1.Globalisation.	4
	2.Indian Politics: Trends And Developments.	6

Blue Print of the question paper. Question. **Total marks** Marks. 1 to 16 16 1 mark each. 17&18 1+1+1+1=4 4 (Passages) 1+1+1+1=4. 4 19 to 22. 2 marks each 8 23 to 27. 4 marks each. 20 28 &29. 5 marks each 10 30 to 32 6 marks each. 18

DAV PUBLIC SCHOOL, BISTUPUR . JAMSHEDPUR MONTHLY SYLLABUS FOR THE SESSION 2021-22

CLASS – XII SUBJECT - PHYSICS

MONTH	UNIT/CHAPTER	PORTION TO BE COVERED		
APRIL	UNIT- I/CHAPTER- 1	ELECTRIC CHARGES AND FIELDS		
	UNIT –I/CHAPTER -2	ELECTROSTATIC POTENTIAL AND POTENTIAL ENERGY		
MAY UNIT-I/CHAPTER – 2		CAPACITANCE		
	UNIT-II/CHAPTER - 3	CURRENT ELECTRICITY		
JUNE	UNIT – III/CHAPTER – 4	MOVING CHARGES AND MAGNETISM		
	UNIT – III/CHAPTER -5	MAGNETISM AND MATTER		
JULY	UNIT – IV/CHAPTER –6	ELECTROMAGNETIC INDUCTION		
	UNIT – IV/CHAPTER - 7	ALTERNATING CURRENT		
AUGUST	UNIT – V/CHAPTER – 8	ELECTROMAGNETIC WAVES		
	UNIT – VI/CHAPTER -9	RAY OPTICS AND OPTICAL INSTRUMENTS		
SEPTEMBER	REVISION			
	IST TERMINAL			
OCTOBER	UNIT-VI/CHAPTER - 10	WAVE OPTICS		
	UNIT- VII/CHAPTER - 11	DUAL NATURE OF RADIATION AND MATTER		
NOVEMBER UNIT VIII / CHAPTER – 12&13		ATOMS AND NUCLEI		
	UNIT IX / CHAPTER - 14	ELECTRONIC DEVICES		

BLUE PRINT OF QUESTION PAPER - 2021-22

EXAMINATION – FIRST TERMINAL CLASS – XII SUBJECT – PHYSICS

UNIT	1 MARK	2 MARKS	3MARKS	4 MARKS	5 MARKS	TOTAL
1. ELECTROSTATICS	4	2	-	-	1	13
2.CURRENT ELECTRICITY	2	2	2	-	-	12
3.MAGNETIC EFFECT OF CURRENT &	2	1	-	1	1	13
MAGNETISM						
4.ELECTROMAGNETIC INDUCTION AND	2	2	2	-	-	12
ALTERNATING CURRENT						
5.ELECTROMAGNETIC WAVES	-	1	1	-	_	05
6. RAY OPTICS	4	1	-	1	1	15
TOTAL MARKS	14	18	15	8	15	70