	Price Index Nur	nhers: Construction Uses Limitations Tests for index numbers Various formulae and	
	their comparison	is, Chain Index Number.	
	Some Importan Production – me	t Indices: Consumer Price Index, Wholesale Price Index and Index of Industrial thods of construction and uses.	
	Measurement of as income distrib	income inequality: Gini's coefficient, Lorenz curves, Application of Pareto and Lognormal putions.	
	Population Star Introduction: So Rates and ratios	tistics: urces of Population Data – Census data, Registration data and the errors in such data. of vital events.	
	Measurements o rate and Caus	f Mortality: Crude Death rate, Specific Death Rate, Standardized death Rate, Case fatality e of Death Rate, Infant Mortality Rate, Neonatal and Perinatal Mortality Rates.	
	Life tables: Des Tables, Stable p and death statist	criptions of Complete and Abridged Life Tables and their uses, Cohort vs. Current Life opulation and Stationary population, Construction of complete life table from population tics.	
	Measurements of Fertility Rate. G	of Fertility: Crude Birth Rate, General Fertility Rate, Age Specific Fertility Rate, Total rowth Curve models.	
	Time Series Analysis: Introduction: Examples of time series from various fields, Components of a times series, Additive and Multiplicative models. Trend and Seasonal Components: Estimation of trend by linear filtering (simple and weighted moving-averages) and curve fitting (polynomial, exponential), Estimation of seasonal component by ratio to moving-average method, ratio to trend method, some special processes-: Moving Average process, Auto Regressive processes of orders one and two. Exponential smoothing method of forecasting		
	Linear Program	nming: Formulation of LP problems, Simple LP model and its graphical solution, Simplex	
	Official statistics: The Statistical system in India: The Central and State Government organizations, the functions of th Central Statistical Organization (CSO), National Sample Survey Organization (NSSO) and West Beng Bureau of Applied Economics and Statistics.		
	National Income statistics: Income, expenditure and production approaches. Their applications in variou sectors in India.		
ZOOLOGY :			
Paper – I :	Group A :	Short/objective questions. This group will cover the whole content of the Paper (I)	
	Group B :	 Non-Chordata & Chordata 01. Outline classifications of Protozoa upto Phyla 02. Outline classifications of Porifera to Hemichordata upto classes. 03. Classification of chordata upto orders. 	
	Non Chordata	Locomotion in Protozoa Annelida, Insecta & Mollusca, Excretion and Osmoregulation in Annelida, Arthropoda & Mollusca. Sense organs in Mollusca and Arthropoda.	
		<u>Specialized Features:</u> Conjugation in ciliates Polymorphism in Siphonophora Coral reefs: types and formation Evolutionary position of Onychophora, Limulus Social Organisation in insects – Honey bee & Termites	
	Chordata	Specialized Features: Ciliary mode of feeding in lower chordates. Integumentary derivatives in mammals. Comparative anatomy of heart, aortic arches & Kidney Respiratory structure and function in fish, bird and mammals.	

		Ruminant stomach.	
		Evolutionary position of Sphenodon and Monotremata	
		Poison apparatus, Biting mechanism and types of poison in snakes.	
		Retrogressive metamorphosis, Neoteny and paedogenesis.	
		Migration of Birds	
		Aerodynamics in Dirus night.	
	Group C :	Ecology, Biodiversity and Ethology	
		Energy flow, Population Dynamics — Growth forms, mortality, natality, population	
		density regulation.	
	Pollution :	Green house effect, Pollutants types and nature. Acute and chronic toxicity due to air	
	and water pollution.		
	Innate and learned behaviour, FAP (Fixed Action Plan), Selfishness, Co-operation, Altruism and Kinship		
	Biodiversity :	Definition, Levels, values, in-situ and Ex-situ conservation, Hot spots, megadiversity	
		Countries, Diopiracy.	
		Elementary concept on remote sensing for sustainable diversity.	
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	Systematics and Quantitative Biology		
	Codes of Zoolog	ical nomenclature, species concept, phenetics and cladistics.	
	Measure of Cent	ral Tendency, Probability, Student t test Chi square, ANOVA, Goodness of fit.	
Paper – II :	Group A :	Short/objective questions. This group will cover the whole content of the Paper (II)	
	Group B :		
	Cell Biology & Genetics :		
	Ultra structure	& functioning of – Plasmamembrane, Golgi complex, Mitochondria, FR, Lysosome,	
	Chromosome, Nucleosome, Cell cycle.		
	Allele : Types, problems. Autos Man. Replication & Tryptophan, I anaemia, Thala Transgenic anim	ABO blood group, Bombay phenotype, 3 point chromosome mapping in diploid with somal & sex linked inheritance in Drosophila & Man, Sex determinations in Drosophila & 1, Transcription and m RNA processing & Translation in prokaryots. Operon concept – Lac Mutations & Mutagenesis, Down, Klinefelter and Turner syndrome, Albinisim, Sickle cell Issemia, Recombinant DNA : Vector, Principle of cloning, Restriction Endonucleases hals. Role of protooncogene & Tumor Supressor Genes. Human Genome Project.	
	Histology & Endocrinology :		
	Histology : C Mechanism of he mammals. Gen	Cell types and functions. Pituitary, endocrine pancreas, gonads, Thyroid, adrenal. ormone action, Basic concept of cell signalling. Hormonal control of reproductive cycles in eral idea of insect endocrine glands and their function.	
	Physiology & E Osmoregulation Macromolecules & oxidative and Foetal haemoglo Principles and us printing.	 Biochemistry : Enzymes : Classes, kinetics and factors affecting enzyme action. Types and mechanism in aquatic vertebrates. Protein, fat & carbohydrates. Glycolysis, pentose phosphate pathway, Transamination non-oxidative deamination. Role of haemoglobin in oxygen & carbon di oxide transport, obin, Physiology of nerve impulse and propagation, Muscular contraction, Vitamines. se of instruments – Spectrophotometer, TLC, RAPD, RFLP, PCR, ELISA , DNA finger 	
	Group C :		
	Developmenta Gametogenesis, Organizer, induct	I Biology fertilization, IVF basic concept, cleavage-types and examples. Gastrulation in frog and chick. tion and competence. Placenta: Types and formation. Organogenesis: Eye and heart.	
	Evolution & ad Origin of life, na	l aptation : itural selection : modern view, Neutral theory.	
	Evolution : Elep Hardy Weinberg	phant, Horse & Man. 9 equilibrium and factors affecting it.	

Fossilization, Zoogeographical realms, continental drift, Adaptive features of Aquatic, Volant and desert animals. Mimicry and colouration.
Economic Zoology : Pisciculture, Apiculture, Sericulture & Poultry. Types of cattle breed in India. Common pests of paddy, wheat and jute – damage & control, IPM.
Parasitology & Immunology : Morphology, Life-cycle, Pathogenecity and control of <i>Plasmodium, Leishmania, Taenia, Fasciola, Ancylostoma & Wuchereria</i> . Immunoglobulin classification, T & B cell cooperation. T cell receptors, cytokines, complements. Antigen-antibody reaction. Principles and importance of vaccination. Pathophysiology of Tuberculosis, Types of virus.