S.P. Mandali's Ramnarain Ruia Autonomous College

Department of Life Science

Notice

Internal Examination Portion (2020-21)

TYBSC Life Science

Sr.No.	PAPER TITLE	PAPER CODE	UNIT	PORTION
Paper I	Genetics and Immunology- I	RUSLSc 501	I	1)Unique and repetitive sequences of DNA 2)Denaturation kinetics 3)'CoT' value
			II	1)Life Cycle of lytic and lysogenic phages
			III	1)Overview of the immune system. 2)Cells and organs of immune system
			IV	3)Major Histocompatibility Complex. 4)Complement system.
Paper II	Developmental Biology and Neuroscience- I	RUSLSc 502	I	1) Dictyostelium - acquisition of multicellularity 2) Sea urchin development
			II	1)Chick Development
			III	1)Central Nervous system in Human
			IV	1)Resting Membrane Potential Action Potential, Graded Potential, Electrical Synapse,Chemical Synapse
Paper III	Biotechnology and Genetic Engineering-I	RUSLSc 503	I	1) History of fermentation. 2)Fermentation equipment and instrumentation. 3)Batch/ stir tank and Airlift reactors. 4)Principles of microbial growth
			II	1)Batch and Continuous fermentation
			III	1)DNA ligase 2)Adaptors 3)Linkers 4)Homopolymer tailing
			IV	1)Isolation of mRNA 2)cDNA synthesis 3)Chromosome Walking
Paper IV	Ecology, Conservation Biology Assessment and Management-I	RUSLSc504	I	1)Ecosystem and concept of Biotic Communities.
			II	1)Bioaccumulation & Biomagnification.
			III	1)Toxicology
			IV	1) Sustainable Development 2) Legal Provisions

SYBSc Life Science

SR.NO.	PAPER TITLE	PAPER CODE	UNIT	PORTION
Paper 1	Physiological Systems in Plants and Animals-I	RUSLSc 301	I	1) Endocrine Gland 2) Plant Regulators
			II	Human Nervous System
			III	1)Role of SRY gene. 2) Aromatase. 3)Alternation of generations in plants.
Paper II	Biochemical Approach to Life Processes in Plants and Animals-I	RUSLSc 302	I	1)History and Features of enzymes. 2)Nomenclature and classification. 3)Terms in enzymology. 4)Bioenergetics. 5)Michaelis Menten and Lineweaver Burk equations. 6)Effect of pH and Temperature on activity. 7)Specificity of enzyme action. 8)Models proposed to explain ES formation.
			II	1)Glycolysis
Paper III	Evolutionary Biology, Biostatistical Approach and Bioinformatics	RUSLSc303	I	1)Charles Darwin and Natural Selection 2)Evidences for Evolution. 3)Kinds of Selection.
			II	1)Theory- Probability ,Poisson, Normal distributions,Correlation and Regression Analysis
			III	1)Bioinformatics - Network Protocol - Cloud Platforms - Databases

MSc Life Science, Semester 03 - Portion for Internals 2020-21

PAPER	TITLE	PAPER CODE	UNIT	TOPICS
PAPER I	Genetic Engineering	RPSLSc301	I	1) Error prone PCR. 2) Cassette mutagenesis. 3) Site Saturation mutagenesis.
			II	Microbial Expression Systems: Entire unit
			III	Engineering in Lower eukaryotes - I: Algae
PAPER II	Fermentation Technology	RPSLSc302	I	Upstream processes: Entire unit
			II	Fermentation processes I: Entire unit
			III	Fermentation processes II: Entire unit (Excluding microbial secondary metabolites)
PAPER III	Industrial Enzymes, Tissue culture and its applications	RPSLSc303	I	1) Nutraceuticals and Functional Foods; Lycopene, Probiotics, Glucosamine, Phytosterols, Isoflavonoids. 2) Fruit Juice and vegetable processing; Jams and jellies/ Diabetic jams and jellies, Glucose isomerase, Aspartame synthesis.
			II	Plant tissue culture: Entire unit
			IV	In Vitro Fertilization (IVF)
PAPER IV	Research Methodology and Quality control	RPSLSc304	II	1) Scientific and Nonscientific writing. 2) Synopsis, Dissertation, Thesis, Posters 3) Scientific Grammar
			III	ISO, GMP and GLP: Entire unit
			IV	Use of software in research: Entire unit

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