SARIYA COLLEGE, SURIYA
FYUGP FRAME WORK OF NATURAL AND PHYSICAL SCIENCE

BOTANY DEPARTMENT

COURSE STRUCTURE- MAJOR

SEMESTER	CODE	PAPER(COURSE NAME)	CREDIT	SIE	ESE	TOTAL (SIE + ESE)
I	MJ-1	Microbiology and Algae	4	25	75	100
II	MJ-2	Fungi, Plant Pathology and Bryophyta	4	25	75	100
	MJ-3	Practical -1	4	-	-	100
III	MJ-4	Pteridophyta,Gymnosperms and Palaeobotany	4	25	75	100
	MJ-5	Practical -2	4	-	-	100
IV	MJ-6	Systematics and Taxonomy	4	25	75	100
	MJ-7	Plant Anatomy	4	25	75	100
	MJ-8	Practical -3	4	-	-	100
V	MJ-9	Cell biology and Biochemistry	4	25	75	100
	MJ-10	Cytogenetics and Plant breeding	4	25	75	100
	MJ-11	Practical -4	4	-	-	100
VI	MJ-12	Ecology and Environmental Science	4	25	75	100
	MJ-13	Embryology and Economic Botany	4	25	75	100
	MJ-14	Molecular biology	4	25	75	100
	MJ-15	Practical -5	4	-	-	100
VII	MJ-16	Plant physiology and Cell	4	25	75	100

		fractionation				
	MJ-17	Plant biotechnology and Nanobiotechnology	4	25	75	100
	MJ-18	Applied Botany	4	25	75	100
	MJ-19	Practical -6	4	-	-	100
VIII	MJ-20	Research	4	25	75	100
	AMJ-1	Research methodology for plants	4	15	60	75
	AMJ-2	Genomics, bioinformatics and computational biology	4	15	60	75
	AMJ-3	Practical -7	4	-	-	100

COURSE STRUCTURE - MINOR (BOTANY)

SEMESTER	CODE	PAPER(COURSE NAME)	CREDIT	SIE	ESE	TOTAL MARKS SIE+ESE
I	MN-1	Microbes,Algae,Fungi and Archegoniates	4	15	60	75+25 =100
		Practical examination			25	
III	MN-2	Plant Ecology and Taxonomy	4	15	60	75+25 =100
		Practical examination			25	
V	MN-3	Plant Anatomy, Embryology and Economic Botany	4	15	60	75+25 =100
		Practical examination			25	
VII	MN-4	Plant Physiology, Cell biology & genetics and biotechnology	4	15	60	75+25 =100
		Practical examination			25	

SEMESTER	PAPER(COURSE TOPIC)	CREDIT	SIE	ESE	TOTAL
I /II/III	The fundamental unit of cell	3	-	75	100
	Diversity in plant kingdom				
	Economic importance of microorganisms				
	Reproduction in flowering plants				
	Plant physiology				
	Environment and pollution management				
	Biodiversity and its conservation				
	Economic botany and application of Biology				

ZOOLOGY DEPARTMENT

COURSE STRUCTURE - MAJOR

SEMESTER	CODE	PAPER (COURSE NAME)	CREDIT	SIE	ESE	TOTAL SIE +ESE MARKS
I	MJ-1	Systematics & Diversity of Non -chordates	4	25	75	100
II	MJ-2	Systematics & Diversity of Chordates	4	25	75	100
	MJ-3	Practical -1 (Non-chordates & Chordates)	4	-	100	100
III	MJ-4	Cell and Molecular biology	4	25	75	100

	MJ-5	Practical -2	4	-	100	100
IV	MJ-6	Mammalian physiology & Reproductive biology	4	25	75	100
	MJ-7	Biochemistry	4	25	75	100
	MJ-8	Practical -3	4	-	100	100
V	MJ-9	Genetics	4	25	75	100
	MJ-10	Evolution & population genetics	4	25	75	100
	MJ-11	Practical -4	4	-	100	100
VI	MJ-12	Endocrinology	4	25	75	100
	MJ-13	Development Biology & Medical zoology	4	25	75	100
	MJ-14	Environmental biology	4	25	75	100
	MJ-15	Practical -5	4	-	100	100
VII	MJ-16	Immunology & Microbiology	4	25	75	100
	MJ-17	Biostatistics & Bioinformatics	4	25	75	100
	MJ-18	Animal Behaviour & Economic zoology	4	25	75	100
	MJ-19	Practical -6	4	-	100	100
VIII	MJ-20	Biotechnology	4	25	75	100
	AMJ-1	Applied zoology	4	15	60	75
	AMJ-2	Tools & Techniques	4	15	60	75
	AMJ-3	Practical -7	4	-	100	100

COURSE STRUCTURE - MINOR ZOOLOGY

SEMESTER	CODE	PAPER (COURSE NAME)	CREDIT	SIE	ESE	TOTAL MARKS SIE+ESE
I	MN-1	Animal classification & Diversity	3	15	60	75
		Practical	1	-	25	25
III	MN-2	Cell biology, Genetics & Evolution	3	15	60	75
		Practical	1	-	25	25
V	MN-3	Biochemistry, physiology & Developmental Biology	3	15	60	75
		Practical	1	-	25	25
VII	MN-4	Ecology & Economic zoology	3	15	60	75
		Practical	1	-	25	25

COURSE STRUCTURE -MDC(MULTIDISCIPLINARY COURSE)
COURSE OPTION -ZOOLOGY(AS PER CHOICE IN MDC)

SEMESTER	PAPER(COURSE NAME)	CREDIT	SIE	ESE	TOTAL
I/II/III	Environmental waste impact and Management	3	-	75	75
	Wildlife resources and conservation				
	Common pest , damage and their control				
	Economic zoology				
	Human physiology & health				
	Reproductive health and sex education				

PHYSICS DEPARTMENT

COURSE STRUCTURE -MAJOR

SEMESTER	CODE	PAPER(COURSE NAME)	CREDIT	SIE	ESE	TOTAL SIE+ESE
I	MJ-1	Mathematical, Physics & mechanics	4	25	75	100
II	MJ-2	Electricity and Magnetism	4	25	75	100
	MJ-3	Practical	4	-	100	100
III	MJ-4	Waves and Optics	4	25	75	100
	MJ-5	Practical	4	-	100	100
IV	MJ-6	Mathematical Physics	4	25	75	100
	MJ-7	Thermal physics	4	25	75	100
	MJ-8	Practical	4	-	100	100
V	MJ-9	Analog and Digital Electronics	4	25	75	100
	MJ-10	Elements of modern physics	4	25	75	100
	MJ-11	Practical	4	–	100	100
VI	MJ-12	Quantum mechanics and Application	4	25	75	100
	MJ-13	Solid state physics	4	25	75	100
	MJ-14	Electromagnetic theory	4	25	75	100
	MJ-15	Practical	4	–	100	100
VII	MJ-16	Nuclear and Particle physics	4	25	75	100
	MJ-17	Classical Dynamics	4	25	75	100

	MJ-18	Physics of devices and instrument	4	25	75	100
	MJ-19	Practical	4	-	100	100
VIII	MJ-20	Statistical mechanics	4	25	75	100
	AMJ-1	Advanced Quantum mechanics	4	25	75	100
	AMJ-2	Atomic physics and spectroscopy	4	25	75	100
	AMJ-3	Practical	4	-	100	100

SEMESTER	CODE	PAPER(COURSE NAME)	CREDIT	SIE	ESE	TOTAL MARKS
I	MN-1	Mechanics	4	15	60	75+25=100
III	MN-2	Electricity and Magnetism	4	15	60	75+25=100
V	MN-3	Thermal physics	4	15	60	75+25=100
VII	MN-4	Waves and Optics	4	15	60	75+25=100

COURSE STRUCTURE -MDC
(MULTIDISCIPLINARY COURSE)

COURSE OPTION -PHYSICS (AS PER CHOICE IN MDC)

SEMESTER	PAPER (COURSE NAME)	CREDIT	SIE	ESE	TOTAL
I/II/III	Mechanics	3	-	75	75
	Electricity and Magnetism				
	Waves and Optics				

FYUGP FRAMEWORK OF MATHEMATICS & STATISTIC

MATHEMATICS DEPARTMENT

COURSE STRUCTURE - MAJOR

SEMESTER	CODE	PAPER. (COURSE NAME)	CREDIT	SIE	ESE	TOTAL (SIE + ESE)
I	MJ-1	Calculus	4	25	75	100
II	MJ-2	Algebra	4	25	75	100
	MJ-3	Real Analysis-1	4	25	75	100
III	MJ-4	Differential equations	4	25	75	100
	MJ-5	Multivariate Calculus	4	25	75	100
IV	MJ-6	Introduction to group theory	4	25	75	100
	MJ-7	Partial differential equations	4	25	75	100
	MJ-8	Numerical Analysis	4	25	75	100
V	MJ-9	Ring theory	4	25	75	100
	MJ-10	Real Analysis-2	4	25	75	100
	MJ-11	Mechanics	4	25	75	100
VI	MJ-12	Linear programming problem	4	25	75	100
	MJ- 13	Linear algebra	4	25	75	100
	MJ-14	Probability and statistics	4	25	75	100
	MJ-15	Laplace Transform	4	25	75	100
VII	MJ-16	Metric space	4	25	75	100

	MJ-17	Complex Analysis	4	25	75	100
	MJ-18	Advance Group theory	4	25	75	100
	MJ-19	Real Analysis-3	4	25	75	100
VIII	MJ-20	Differential Geometry and Tensor	4	25	75	100
	AMJ-1	Topology	4	25	75	100
	AMJ-2	Special functions	4	25	75	100
	AMJ-3	Analytical Dynamics and Gravitation	4	25	75	100
		OR				
	RC-1	Research methodology	4	25	75	100
	RC-2	Project Dissertation/ Research Internship/ Field work	8			200

COURSE STRUCTURE - MINOR
Mathematics

SEMESTER	CODE	PAPER (COURSE NAME)	CREDIT	SIE	ESE	TOTAL
I	MN-1	Calculus	4	25	75	100
III	MN-2	Algebra	4	25	75	100
V	MN-3	Real Analysis	4	25	75	100
VII	MN-4	Group theory	4	25	75	100