

**SARDAR PATEL UNIVERSITY**  
**B.Sc. Semester: VI**  
**(Under Choice Based Credit Scheme)**  
**Syllabus with Effect from: 2020-21**

Course Type	Course Code	Name Of Course	T / P	Credit	Contact Hours Per Week	Exam Duration in hrs	Component of Marks		
							Internal	External	Total
<b>Core Course (Any One Group)</b>									
<b>Chemistry</b>	US06CCHE21	Organic Chemistry	T	4	4	3	30	70	100
	US06CCHE22	Inorganic Chemistry	T	4	4	3	30	70	100
	US06CCHE23	Physical Chemistry	T	4	4	3	30	70	100
	US06CCHE24	Applied Chemistry	T	4	4	3	30	70	100
	US06CCHE25	Practicals (Prac. I, Prac. II & Prac. III)	P	6	12	12	45	105	150
<b>Discipline Specific Elective (Any One)</b>	US06DCHE26	Selected Topics in Chemistry-1	T	2	2	2	==	50	50
	US06DCHE27	Selected Topics in Chemistry-2	T	2	2	2	==	50	50
<b>Electronics</b>	US06CELE21	Discrete & Linear Circuits	T	4	4	3	30	70	100
	US06CELE22	Digital System	T	4	4	3	30	70	100
	US06CELE23	8-Bit Microprocessor Programming & Applications	T	4	4	3	30	70	100
	US06CELE24	Industrial Electronics	T	4	4	3	30	70	100
	US06CELE25	Practicals	P	6	12	6	45	105	150
<b>Discipline Specific Elective (Any One)</b>	US06DELE26	Analog Communication & Fiber Optics	T	2	2	2	==	50	50
	US06DELE27	Analog Communication & Fiber Optics	T	2	2	2	==	50	50
<b>Physics</b>	US06CPHY21	Quantum Mechanics	T	4	4	3	30	70	100
	US06CPHY22	Atomic and Molecular Spectroscopy	T	4	4	3	30	70	100
	US06CPHY23	Solid State Physics & Nuclear Physics	T	4	4	3	30	70	100
	US06CPHY24	Electrodynamics and Plasma Physics	T	4	4	3	30	70	100
	US06CPHY25	Practicals	P	6	12	6	45	105	150
<b>Discipline Specific Elective (Any One)</b>	US06DPHY26	Transducers and Sensors	T	2	2	2	==	50	50
	US06DPHY27	Electronic Communications	T	2	2	2	==	50	50

Course Type	Course Code	Name Of Course	T/P	Credit	Contact Hours Per Week	Exam Duration in hrs	Component of Marks		
							Internal	External	Total
<b>Applied Physics</b>	US06CAPH21	Advanced Quantum Mechanics	T	4	4	3	30	70	100
	US06CAPH22	Remote Sensing and Its Applications	T	4	4	3	30	70	100
	US06CAPH23	Instrumentation and Sensors	T	4	4	3	30	70	100
	US06CAPH24	Solid State Electronics	T	4	4	3	30	70	100
	US06CAPH25	Practicals	P	6	12	6	45	105	150
<b>Discipline Specific Elective (Any One)</b>	US06DAPH26	Thermal and Nuclear Physics	T	2	2	2	==	50	50
	US06DAPH27	Electronic Communication and Thin Film Interference	T	2	2	2	==	50	50
<b>Mathematics</b>	US06CMTH21	Complex Analysis	T	4	4	3	30	70	100
	US06CMTH22	Ring Theory	T	4	4	3	30	70	100
	US06CMTH23	Linear Algebra	T	4	4	3	30	70	100
	US06CMTH24	Riemann Integration & Series of Functions	T	4	4	3	30	70	100
	US06CMTH25	Mathematics Practical	P	6	12	6	45	105	150
<b>Discipline Specific Elective (Any One)</b>	US06DMTH26	Number Theory - 2	T	2	2	2	==	50	50
	US06DMTH27	Graph Theory - 2	T	2	2	2	==	50	50
	US06DMTH28	Mechanics - 2	T	2	2	2	==	50	50
	US06DMTH29	Operations Research - 2	T	2	2	2	==	50	50
<b>Instrumentation</b>	US06CINS21	8085 Microprocessor Architecture and Programming-2	T	4	4	3	30	70	100
	US06CINS22	Process Measurement Techniques-2	T	4	4	3	30	70	100
	US06CINS23	Advanced Control Systems	T	4	4	3	30	70	100
	US06CINS24	Programmable Logic Controller-2	T	4	4	3	30	70	100
	US06CINS25	Practicals	P	6	12	6	45	105	150
<b>Discipline Specific Elective (Any One)</b>	US06DINS26	Analytical Instrumentation	T	2	2	2	==	50	50

Course Type	Course Code	Name Of Course	T/P	Credit	Contact Hours Per Week	Exam Duration in hrs	Component of Marks		
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<b>Instrumentation (Voc.)</b>	US06CINV21	Process Measurement Techniques - II	T	4	4	3	30	70	100
	US06CINV22	Control System components and Technique – II	T	4	4	3	30	70	100
	US06CINV23	8-Bit Microprocessor Programming & Applications-II	T	4	4	3	30	70	100
	US06CINV24	Spectroscopy & Biomedical Instrumentation	T	4	4	3	30	70	100
	US06CINV25	Practicals	P	6	12	6	45	105	150
<b>Discipline Specific Elective (Any One)</b>	US06DINV26	Radio, TV Communication and Telemetry fundamentals	T	2	2	2	==	50	50
<b>Biochemistry</b>	US06CBCH21	Genetic Engineering	T	4	4	3	30	70	100
	US06CBCH22	Basic Immunology	T	4	4	3	30	70	100
	US06CBCH23	Human Metabolism-II	T	4	4	3	30	70	100
	US06CBCH24	Clinical Biochemistry	T	4	4	3	30	70	100
	US06CBCH25	Practicals	P	6	12	6	45	105	150
<b>Discipline Specific Elective (Any One)</b>	US06DBCH26	Clinical Endocrinology	T	2	2	2	==	50	50
	US06DBCH27	Plant Biochemistry	T	2	2	2	==	50	50
<b>Bioinformatics</b>	US06CBNF21	Python Programming	T	4	4	3	30	70	100
	US06CBNF22	R Programming	T	4	4	3	30	70	100
	US06CBNF23	Biomolecules and their Metabolism	T	4	4	3	30	70	100
	US06CBNF24	Structural Bioinformatics	T	4	4	3	30	70	100
	US06CBNF25	Practicals	P	6	12	6	45	105	150
<b>Discipline Specific Elective (Any One)</b>	US06DBNF26	Instrumental Methods of Analysis	T	2	2	2	==	50	50

Course Type	Course Code	Name Of Course	T/P	Credit	Contact Hours Per Week	Exam Duration in hrs	Component of Marks		
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<b>Biotechnology</b>	US06CBIT21	Molecular Communications	T	4	4	3	30	70	100
	US06CBIT22	Industrial Biotechnology	T	4	4	3	30	70	100
	US06CBIT23	Metabolism	T	4	4	3	30	70	100
	US06CBIT24	Enzymology	T	4	4	3	30	70	100
	US06CBIT25	Practicals	P	6	12	6	45	105	150
<b>Discipline Specific Elective (Any One)</b>	US06DBIT26	Virology	T	2	2	2	==	50	50
<b>Botany</b>	US06CBOT21	Pharmacognosy and Phytochemistry	T	4	4	3	30	70	100
	US06CBOT22	Anatomy of Angiosperms	T	4	4	3	30	70	100
	US06CBOT23	Plant Biochemistry	T	4	4	3	30	70	100
	US06CBOT24	Plant Biotechnology	T	4	4	3	30	70	100
	US06CBOT25	Practicals	P	6	12	6	45	105	150
<b>Discipline Specific Elective (Any One)</b>	US06DBOT26	Microtechniques	T	2	2	2	==	50	50
	US06DBOT27	Floriculture	T	2	2	2	==	50	50
<b>Environmental Science</b>	US06CENV21	Environmental Microbiology	T	4	4	3	30	70	100
	US06CENV22	Pesticide, Herbicide, Fungicide Toxicology	T	4	4	3	30	70	100
	US06CENV23	Environmental Management & Technology	T	4	4	3	30	70	100
	US06CENV24	Environmental Legislation & Biostatistics	T	4	4	3	30	70	100
	US06CENV25	Practicals	P	6	12	6	45	105	150
<b>Discipline Specific Elective (Any One)</b>	US06DENV26	Biofertilizers	T	2	2	2	==	50	50
	US06DENV27	Green Technologies	T	2	2	2	==	50	50

Course Type	Course Code	Name Of Course	T /P	Credit	Contact Hours Per Week	Exam Duration in hrs	Component of Marks		
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<b>Genetics</b>	US06CGEN21	Genetic Engineering-II	T	4	4	3	30	70	100
	US06CGEN22	Plant Breeding and Plant Biotechnology	T	4	4	3	30	70	100
	US06CGEN23	Animal Biotechnology and Animal Breeding	T	4	4	3	30	70	100
	US06CGEN24	Biomedical Genetics	T	4	4	3	30	70	100
	US06CGEN25	Practicals	P	6	12	6	45	105	150
<b>Discipline Specific Elective (Any One)</b>	US06DGEN26	Instrumental Methods of Analysis	T	2	2	2	==	50	50
	US06DGEN27		T	2	2	2	==	50	50
<b>Microbiology</b>	US06CMIC21	Molecular Biology	T	4	4	3	30	70	100
	US06CMIC22	Immunology and Medical Microbiology	T	4	4	3	30	70	100
	US06CMIC23	Agricultural and Environmental Microbiology	T	4	4	3	30	70	100
	US06CMIC24	Fermentation Technology -II	T	4	4	3	30	70	100
	US06CMIC25	Practicals	P	6	12	6	45	105	150
<b>Discipline Specific Elective (Any One)</b>	US06DMIC26	Applied Medical Technolgy and Clinical Management	T	2	2	2	==	50	50
	US06DMIC27	Microbial Quality Control in Food and Pharmaceutical Industries	T	2	2	2	==	50	50
<b>Zoology</b>	US06CZOO21	Vertebrata	T	4	4	3	30	70	100
	US06CZOO22	Developmental Biology & Evolution	T	4	4	3	30	70	100
	US06CZOO23	Metabolism & Nutrition	T	4	4	3	30	70	100
	US06CZOO24	Comparative Anatomy of Chordata	T	4	4	3	30	70	100
	US06CZOO25	Practicals	P	6	12	6	45	105	150
<b>Discipline Specific Elective (Any One)</b>	US06DZOO26	Applied Zoology	T	2	2	2	==	50	50
	US06DZOO27	Economic Entomology	T	2	2	2	==	50	50

Course Type	Course Code	Name Of Course	T /P	Credit	Contact Hours Per Week	Exam Duration in hrs	Component of Marks		
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<b>Industrial Chemistry (Voc.)</b>	US06CICV21	Synthetic Dyes and Drugs	T	4	4	3	30	70	100
	US06CICV22	Polymer Science and Technology	T	4	4	3	30	70	100
	US06CICV23	Industrial Management & Economics	T	4	4	3	30	70	100
	US06CICV24	Separation Techniques, Plant design & Control	T	4	4	3	30	70	100
	US06CICV25	Practicals	P	6	12	9	45	105	150
<b>Discipline Specific Elective (Any One)</b>	US06DICV26	Specialty Chemicals – II	T	2	2	2	==	50	50
	US06DICV27	Occupational Health & Industrial Hygiene - II	T	2	2	2	==	50	50
<b>Industrial Chemistry</b>	US06CICH21	Synthetic Dyes and Pharmaceuticals	T	4	4	3	30	70	100
	US06CICH22	Polymer Technology	T	4	4	3	30	70	100
	US06CICH23	Business Organization & Management	T	4	4	3	30	70	100
	US06CICH24	Process Control for Heat & Mass Transfer Operations	T	4	4	3	30	70	100
	US06CICH25	Practicals	P	6	12	9	45	105	150
<b>Discipline Specific Elective (Any One)</b>	US06DICH26	Specialty Chemical Industries - II	T	2	2	2	==	50	50
	US06DICH27	Industrial Safety & Hygiene - II	T	2	2	2	==	50	50
<b>Computer Science</b>	US06CCSC21	Object Oriented Programming using Java	T	4	4	3	30	70	100
	US06CCSC22	PHP Using MySql	T	4	4	3	30	70	100
	US06CCSC23	Python Programming	T	4	4	3	30	70	100
	US06CCSC24	Software Engineering & Introduction to SASD	T	4	4	3	30	70	100
	US06CCSC25	Practicals	P	6	12	6	45	105	150
<b>Discipline Specific Elective (Any One)</b>	US06DCSC26	Artificial Intelligence	T	2	2	2	==	50	50
	US06DCSC27	Enterprise Resource Planning	T	2	2	2	==	50	50

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<b>Information Technology</b>	US06CINT21	OOPS Technology -II	T	4	4	3	30	70	100
	US06CINT22	Web Technology Using Asp	T	4	4	3	30	70	100
	US06CINT23	Python Programming	T	4	4	3	30	70	100
	US06CINT24	Computer Networks	T	4	4	3	30	70	100
	US06CINT25	Practicals	P	6	12	6	45	105	150
<b>Discipline Specific Elective (Any One)</b>	US06DINT26	Information Security.doc	T	2	2	2	==	50	50
	US06DINT27	Data Mining	T	2	2	2	==	50	50
<b>Electronics &amp; Communication</b>	US06CELC21	Power Electronics and Op Amp Application	T	4	4	3	30	70	100
	US06CELC22	Microprocessor Interrupts & Interfacing	T	4	4	3	30	70	100
	US06CELC23	Microwave Device & Optical Fiber Communication	T	4	4	3	30	70	100
	US06CELC24	Network Infrastructure Management	T	4	4	3	30	70	100
	US06CELC25	Practicals	P	6	12	6	45	105	150
<b>Discipline Specific Elective (Any One)</b>	US06DELC26	Instrumentation - II	T	2	2	2	==	50	50
<b>Statistics</b>	US06CSTA21		T	4	4	3	30	70	100
	US06CSTA22		T	4	4	3	30	70	100
	US06CSTA23		T	4	4	3	30	70	100
	US06CSTA24		T	4	4	3	30	70	100
	US06CSTA25	Practicals	P	6	12	6	45	105	150
<b>Discipline Specific Elective (Any One)</b>	US06DSTA26		T	2	2	2	==	50	50
	US06DSTA27		T	2	2	2	==	50	50