

**SCHEME OF EXAMINATION
&
SYLLABUS**

for

**Bachelor of Technology (Biotechnology)
2019 onwards**



**UNIVERSITY SCHOOL OF BIOTECHNOLOGY
GGS INDRAPRASTHA UNIVERSITY
Sector 16C, Dwarka, New Delhi - 110 078**

**Approved in the Academic Council Sub-committee meeting on 03-07-2019.*

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FIRST SEMESTER EXAMINATION

L	T	P	S	Credits	Hours
13	4	11	0	23	28

Code No.		L	T/P	Credits
THEORY PAPERS				
IT-105	Introduction to Computers			
BA-131	Essential of Mathematics – I	3	0	3
BT-133	Foundation course in Biology	3	1	4
BA-135	Foundation course in Physico-Inorganic Chemistry – I	3	1	4
BA-137	Foundation course in Physics-I	2	1	3
		2	1	3
PRACTICALS				
IT -155	Computer Lab			
IT -157	Engineering Graphics - I Lab	0	2	1
BT-181	Foundation course in Biology – Lab	0	2	1
BA-183	Chemistry - I Lab	0	3	2
BA-185	Physics - I Lab	0	2	1
		0	2	1
TOTAL		13	4/11	23

SECOND SEMESTER EXAMINATION

L	T	P	S	Credits	Hours
16	6	09	0	27	31

Code No.		L	T/P	Credits
THEORY PAPERS				
BT-116	Introduction to Biotechnology			
IT -120	Electrical Science	3	1	4
BT-124	Techniques in Biotechnology	3	1	4
BA-132	Essential of Mathematics – II	3	1	4
BA-136	Foundation Course in Organic Chemistry-II	3	1	4
BA-138	Foundation Course in Physics – II	2	1	3
		2	1	3
PRACTICALS				
BT-164	Techniques in Biotechnology - Lab			
IT -166	Electrical Science – Lab	0	3	2
BA-184	Chemistry – II Lab	0	2	1
BA-186	Physics - II Lab	0	2	1
		0	2	1
TOTAL		16	6/09	27

THIRD SEMESTER EXAMINATION

L	T	P	S	Credits	Hours
15	5	12	0	28	32

Code No.		L	T/P	Credits
THEORY PAPERS				
BT-201	Microbiology			
BA-203	Bioenergetics – I	3	1	4
BT-205	Cell Biology	3	1	4
BT-209	Genetics	3	1	4
CT-211	Introduction to material and energy balances	3	1	4
		3	1	4
PRACTICALS				
BT-251	Genetics-Lab			
BA-253	Bioenergetics – I Lab	0	3	2
BT-255	Cell Biology – Lab	0	3	2
BT-257	Microbiology Lab	0	3	2
		0	3	2
TOTAL		15	5/12	28

FOURTH SEMESTER EXAMINATION

L	T	P	S	Credits	Hours
15	5	12	0	28	32

Code No.		L	T/P	Credits
THEORY PAPERS				
BT-202	Immunology			
BT-204	Molecular Biology	3	1	4
BT-206	Enzyme Technology	3	1	4
BA-208	Bioenergetics – II	3	1	4
CT-212	Fundamentals of Heat and Mass Transfer	3	1	4
		3	1	4
PRACTICALS				
BT-254	Molecular Biology – Lab			
BT-256	Enzyme Technology - Lab	0	3	2
BT-258	Immunology – Lab	0	3	2
BA-258	Bioenergetics - II Lab	0	3	2
		0	3	2
TOTAL		15	5/12	28

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FIFTH SEMESTER EXAMINATION

L	T	P	S	Credits	Hours
15	5	15	0	30	35

Code No.		L	T/P	Credits
THEORY PAPERS				
BT-305	Animal Biotechnology	3	1	4
BT-307	Recombinant DNA Technology	3	1	4
BT-309	Developmental and Stem Cell Biology	3	1	4
BT-311	Plant Biotechnology	3	1	4
BT-313	Unit Operations and Plant Design	3	1	4
PRACTICALS				
BT-355	Animal tissue Culture – Lab			
BT-357	Recombinant DNA Technology – Lab	0	3	2
BT-359	Developmental and Stem Cell Biology Lab	0	3	2
BT-361	Plant Biotechnology I – Lab	0	3	2
CT-363	Chemical Engineering – Lab	0	3	2
		0	3	2
TOTAL		15	5/15	30

SIXTH SEMESTER EXAMINATION

L	T	P	S	Credits	Hours
15	5	09	0	26	29

Code No.		L	T/P	Credits
THEORY PAPERS				
BT-314	Bioinformatics	3	1	4
BT-316	Statistical Methods in Biology and Experimental Design	3	1	4
BT-318	Downstream Processing	3	1	4
BT-320	Medical Biotechnology	3	1	4
BT-322	Bioprocess Engineering	3	1	4
PRACTICALS				
BT-352	Bioinformatics – Lab			
BT-356	Plant Biotechnology II - Lab	0	3	2
BT-360	Bioprocess Engineering - Lab	0	3	2
		0	3	2
TOTAL		15	5/9	26

SEVENTH SEMESTER EXAMINATION

L	T	P	S	Credits	Hours
15	5	6	0	26	26

Code No.		L	T/P	Credits
THEORY PAPERS				
BT-403	Environmental Biotechnology	3	1	4
BT-405	Protein Biotechnology	3	1	4
BT-407	Bioentrepreneurship and Management	3	1	4
BT-409	Bioprocess Control Engineering	3	1	4
BT-411	Intellectual Property Rights, Biosafety and Bioethics in Biotechnology	3	1	4
PRACTICALS				
BT-451	Protein Biotechnology – Lab	0	3	2
BT-453	Environmental Biotechnology – Lab	0	3	2
BT-457	Industry visits / Case studies (NUES)	0	-	2
TOTAL		15	5/6	26

EIGHTH SEMESTER EXAMINATION

L	T	P	S	Credits	Hours
0	0	20	0	20	

Code No.		L	T/P	Credits
PROJECT WORK / VIVA-VOCE:				
BT-450	Project Work	0	18	18
BT-452	Journal Club/Seminar	0	2	2
TOTAL		0	20	20

Note:

- 1) The programme of study shall be governed by ordinance 11 of the University.
- 2) Total credits for B.Tech. = 208 credits
Minimum credits required = 200 credits

