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PO Attainment

Faculty Name:	Akhilesh Kumar Pandey	Class/Sem:	M.Sc. Micro I	Academic Year:	2022-23
Course Name:	Molecular Biology	Course Code:	MM-103	Program Name:	M.Sc.

CO-PO MAPPING:

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	2			2		2	1			
CO2	2		3		2		1	3		1	2	1
CO3	1		2	1	3	1	2		2		1	
CO4	2		3	2			3	1			2	
CO5	3	1		1	2		1	1		2		2
CO6	2	3		2	1	2	1				3	1

CO ATTAINMENT:

Akhilesh Kumar Pandey	Att. Level
CO1	2.67
CO2	2.67
CO3	3.00
CO4	2.67
CO5	2.67
CO6	3.00

PO ATTAINMENT :

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Overall PO Attainment	2.7	2.5	2.7	2.8	2.8	2.9	2.6	2.7	2.9	2.7	2.8	2.8

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CO Attainment

Faculty Name: Akhilesh Kumar Pandey **Class/Sem:** M.Sc. Micro I sem **Academic Year:** 2022-23

Course Name: Molecular Biology **Course Code:** MMB-103 **Program Name:** M.Sc. Micro

S. No.	University Reg. No.	Student Name	First Unit Test (Theory) (30)	Second Unit Test (Theory) (30)	First Class Test (Theory) (10)	Second Class Test (Theory) (10)	Best One From Unit Test (Theory) (30)	Best One From Class Test (Theory) (10)	Internal Marks Scheme: Unit Test(UT)	Attendance(AT)	Teacher Assessment(TA)	Total Internal Marks (Theory) (50)	End Sem Exam Marks (Theory) (70)	Total Marks (Theory) (100)
1	MSMB2022008	ALOK YADAV	25	20	7	5	25	7	10	10	4	24	37	61
2	MSMB2022005	DHARMVEER	30	24	7	5	30	7	12	12	4	28	42	70
3	MSMB2022013	EKTA	15	12	3	3	15	3	6	6	2	14	31	45
4	MSMB2022006	FEEROZ ANWER	20	16	7	5	20	7	8	8	4	20	20	40
5	MSMB2022015	FIRDAUS JAHAN	25	20	7	5	25	7	10	8	4	22	34	56
6	MSMB2022009	IFFA KHANAM	15	12	3	3	15	3	6	7	2	15	36	51
7	MSMB2022001	JAIKARAN SINGH BAKSHI	15	12	3	3	15	3	6	4	2	12	44	56
8	MSMB2022012	JYOTSANA KUSHWAHA	15	12	3	3	15	3	6	6	2	14	54	68
9	MSMB2022014	KIRTI CHOUDHARY	25	20	7	5	25	7	10	10	4	24	38	62
10	MSMB2022019	MOHD ADNAN	20	16	3	3	20	3	8	8	2	18	35	53
11	MSMB2022017	NEELESH VERMA	25	20	7	5	25	7	10	10	4	24	46	70
12	MSMB2022020	NISHA	15	12	3	3	15	3	6	7	2	15	52	67
13	MSMB2022002	PRAGATI SACHAN	30	24	7	5	30	7	12	11	4	27	42	69
14	MSMB2022003	RICHA CHAUHAN	25	20	7	5	25	7	10	11	4	25	60	85
15	MSMB2022011	SANA	30	24	7	5	30	7	12	12	4	28	51	79
16	MSMB2022021	SANA	30	24	7	5	30	7	12	12	4	28	53	81
17	MSMB2022007	SHANI BABU	25	20	7	5	25	7	10	7	4	21	28	49
18	MSMB2022010	SHEETAL SINGH	20	16	3	3	20	3	8	8	2	18	29	47
19	MSMB2022018	SHOBHIT MISHRA	25	20	7	5	25	7	10	10	4	24	46	70
20	MSMB2022004	SHUBHI JAISWAL	30	24	7	5	30	7	12	10	4	26	32	58
21	MSMB2022016	SURVEE KUMAR	25	20	7	5	25	7	10	8	4	22	50	72
22	MSMB2022022	SUBRAT SAXENA							8	8	4	20	42	62
		Students appeared for the examination	21	21	21	21	21	21	22	22	22	22	22	22
		Target / satisfactory mark set as benchmark	12	12	4	4	12	4	5	5	2	12	28	40
		Students scored above the target set	21	21	14	14	21	14	22	21	15	12	21	22
		% Students scored above the target set	100%	100%	67%	67%	100%	67%	100%	95%	68%	18	95%	100%
		Attainment Level	3	3	2	2	3	2	3	3	2	15	3	3

													Overall
CO1	3		2		3	2	3	3	2	15	3	3	2.67
CO2	3		2		3	2	3	3	2	15	3	3	2.67
CO3	3				3		3	3		15	3	3	3.00
CO4		3		2	3	2	3	3	2	15	3	3	2.67
CO5		3		2	3	2	3	3	2	15	3	3	2.67
CO6		3			3		3	3		15	3	3	3.00

Rubric:	
% Students	Level
<50%	1
50-75%	2
>75%	3

Overall attainment	2.78

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Even Semester Examination 2022-23

M.Sc. Micro - I Semester

Course/Code: Molecular Biology (MMB-103)

Maximum Marks :70; Duration: 3 Hours

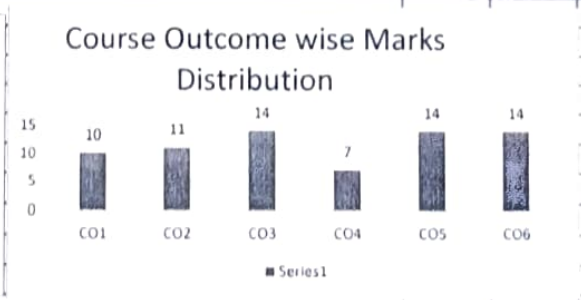
Q.No	Questions	Marks (70)	CO	BL
	Explain the following:			
1-I	What are repetitive and unique sequences?	01	CO1	L2
1-II	Explain Regulatory elements?	01	CO2	L1
1-III	Define Matrix binding proteins?	01	CO2	L2
1-IV	Define Role of Leading and lagging strand?	01	CO2	L1
1-V	What is transcriptional factor or TBP?	01	CO2	L1
1-VI	Define Gene stability?	01	CO1	L1
1-VII	Define Role of H2A, H2B, H3, H4?	01	CO1	L1
	Explain the following:			
2-I	Defineintronand exon?	01	CO1	L1
2-II	Define DNA fingerprinting?	01	CO1	L1
2-III	What are different types of RNA?	01	CO1	L1
2-IV	Explain Wobbles hypothesis?	01	CO1	L2
2-V	Define A-B-Z DNA?	01	CO1	L1
2-VI	Define DNA vaccine?	01	CO1	L1
2-VII	What is RNA editing?	01	CO1	L1
3-I	Explain different steps & mechanism of Trp-operon	7	CO2	L2
3-II	Differentiate between eukaryotic and prokaryotic transcription?	7	CO3	L3
4-I	Discuss the importance of nuclear export of mRNA and mRNA stability.	7	CO3	L5
4-II	)Explaintransposable genetic elements in prokaryotes and eukaryotes.	7	CO4	L3
5	Classify regulation of Transcription with Processing of t-RNA and r-RNA in Eukaryotes?	14	CO5	L4
6	Explain mechanism of Lac- operon with suitable diagram?	14	CO6	L6

BL – Bloom's Taxonomy Levels

(1- Remembering, 2- Understanding, 3 – Applying, 4 – Analysing, 5 – Evaluating, 6 - Creating)

CO – Course Outcomes PO – Program Outcomes; PI Code – Performance Indicator Code

Level	Marks	CO	Marks
Level1	11	CO1	10
Level2	10	CO2	11
Level3	14	CO3	14
Level4	14	CO4	7
Level5	7	CO5	14
Level6	14	CO6	14
Total	**70**	**Total**	**70**



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NAAC

First Unit Test 2022-23

M.Sc. Micro - I Semester

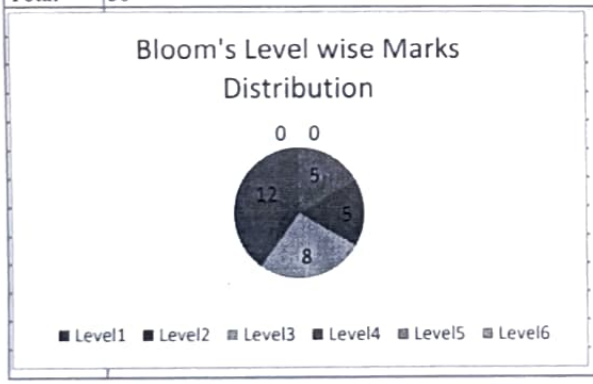
Course/Code: Molecular Biology (MMB-103)

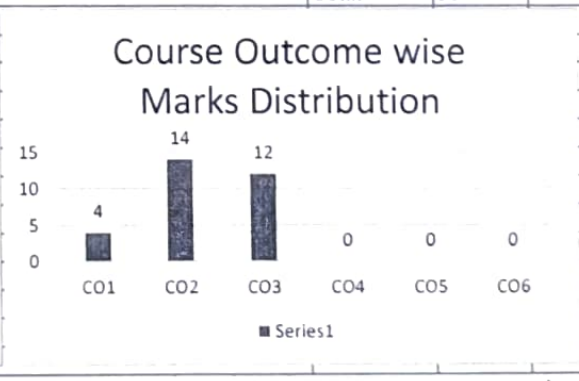
Maximum Marks :30; Duration: 90 Minutes

Q.No	Questions	Marks (30)	CO	BL
	Explain the following in very short -			
1-I	Define DNA finger-printing?	01	CO1	L1
1-II	Difference between Activator and Repressor protein?	01	CO1	L1
1-III	What are repetitive and unique sequences?	01	CO2	L2
1-IV	Define role of TATA BOX?	01	CO1	L2
1-V	Significance of polycistronic mRNA?	01	CO1	L1
	Explain			
2-I	Clarify Role of Universal genetic code	01	CO2	L2
2-II	Represent the Processing of t-RNA	01	CO2	L1
2-III	Oncogene	01	CO2	L2
2-IV	RNA pol	01	CO2	L2
2-V	Splicing	01	CO2	L1
3	Classify the structure &function, mechanism of action of pRB and p53 tu	08	CO2	L3
4-A	Explain different steps & mechanism of Trp-operon	06	CO3	L4
4-B	Classify the post translation modifications in prokaryotes.	06	CO3	L4

BL – Bloom's Taxonomy Levels
(1- Remembering, 2- Understanding, 3 – Applying, 4 – Analysing, 5 – Evaluating, 6 - Creating)
CO – Course Outcomes PO – Program Outcomes; PI Code – Performance Indicator Code

Level	Marks	CO	Marks	
Level1	5	CO1	4	
Level2	5	CO2	14	
Level3	8	CO3	12	
Level4	12	CO4	0	
Level5	0	CO5	0	
Level6	0	CO6	0	
Total	**30**	**Total**	**30**	





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NAAC

Second Unit Test 2022-23

M.Sc. Micro - I Semester

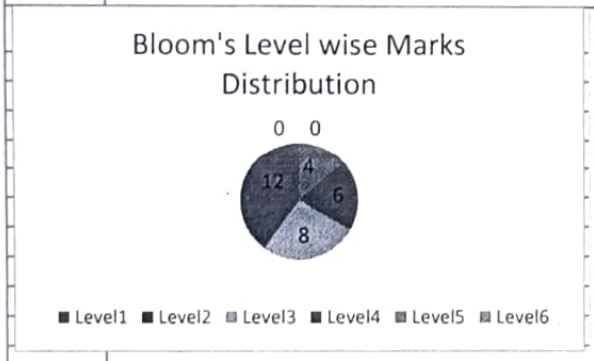
Course/Code: Molecular Biology (MMB-103)

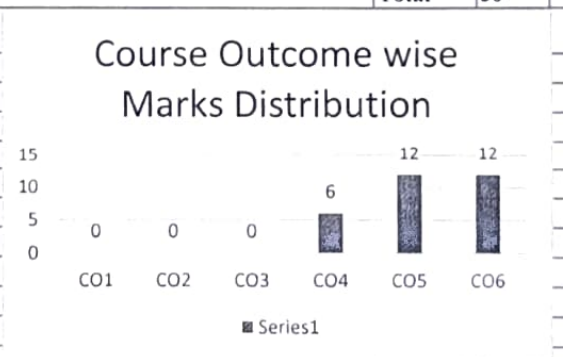
Maximum Marks :30; Duration: 90 Minutes

Q.No	Questions	Marks (30)	CO	BL
	Explain the following in very short -			
1-I	Define DNA finger-printing?	01	CO4	L1
1-II	Difference between Activator and Repressor protein?	01	CO4	L1
1-III	What are repetitive and unique sequences?	01	CO4	L2
1-IV	Define role of TATA BOX?	01	CO4	L1
1-V	Significance of polycistronic mRNA?	01	CO4	L1
	Explain			
2-I	Clarify Role of Universal genetic code	01	CO4	L2
2-II	Represent the Processing of t-RNA	01	CO5	L2
2-III	Oncogene	01	CO5	L2
2-IV	RNA pol	01	CO5	L2
2-V	Splicing	01	CO5	L2
3	Classify the structure &function, mechanism of action of pRB and p53 tumor	08	CO5	L3
4-A	Explain different steps & mechanism of Trp-operon	12	CO6	L4
	Classify the post translation modifications in prokaryotes.			

BL – Bloom's Taxonomy Levels
(1- Remembering, 2- Understanding, 3 – Applying, 4 – Analysing, 5 – Evaluating, 6 - Creating)
CO – Course Outcomes PO – Program Outcomes; PI Code – Performance Indicator Code

Level	Marks	CO	Marks
Level1	4	CO1	0
Level2	6	CO2	0
Level3	8	CO3	0
Level4	12	CO4	6
Level5	0	CO5	12
Level6	0	CO6	12
Total	**30**	**Total**	**30**





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First Class Test 2022-23

M.Sc. Micro - I Semester

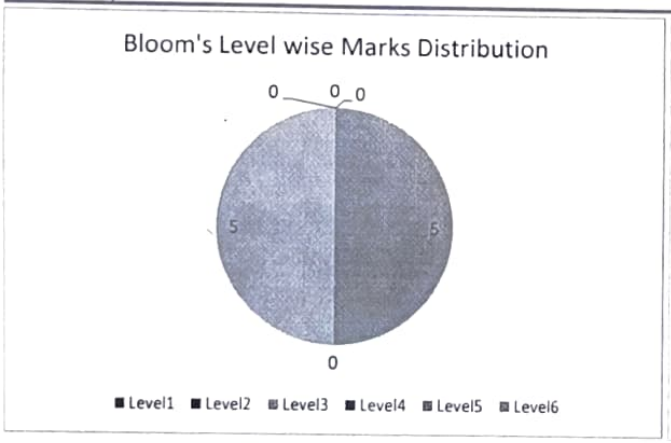
Course/Code: Molecular Biology (MMB-103)

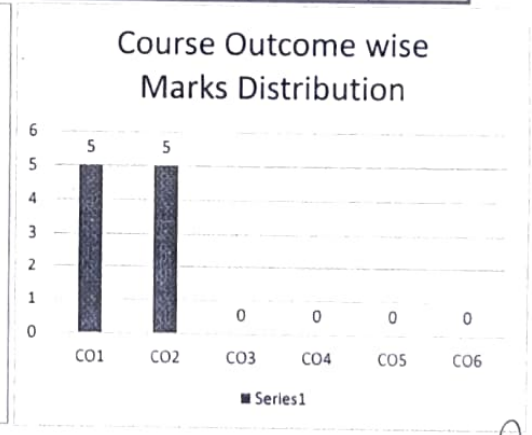
Maximum Marks :10; Duration: 30 Minutes

Q.No	Questions	Marks (10)	CO	BL
1	Discuss DNA and RNA	05	CO1	L3
2	Discuss Restriction enzymes	05	CO2	L1

BL – Bloom's Taxonomy Levels
(1- Remembering, 2- Understanding, 3 – Applying, 4 – Analysing, 5 – Evaluating, 6 - Creating)
CO – Course Outcomes PO – Program Outcomes; PI Code – Performance Indicator Code

Level	Marks	CO	Marks
Level1	5	CO1	5
Level2	0	CO2	5
Level3	5	CO3	0
Level4	0	CO4	0
Level5	0	CO5	0
Level6	0	CO6	0
Total	**10**	**Total**	**10**





Pankaj
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Second Class Test 2022-23

M.Sc. Micro - I Semester

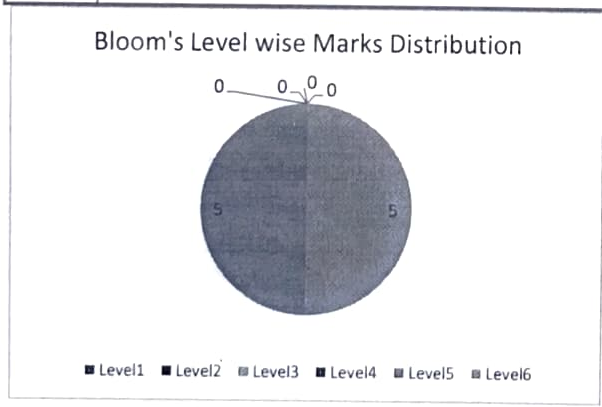
Course/Code: Molecular Biology (MMB-103)

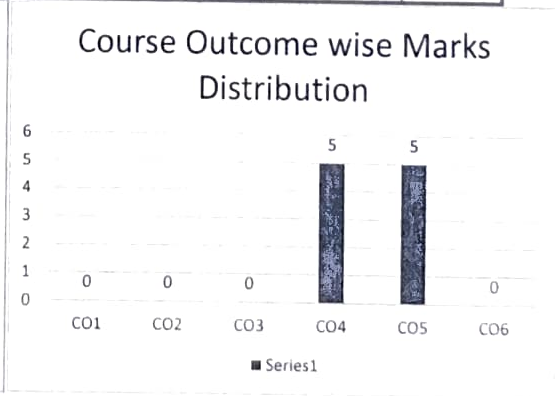
Maximum Marks :10; Duration: 30 Minutes

Q.No	Questions	Marks (10)	CO	BL
1	Explain typyes of RNA	05	CO4	L2
2	Discuss gene expression	05	CO5	L1

BL – Bloom's Taxonomy Levels
(1- Remembering, 2- Understanding, 3 – Applying, 4 – Analysing, 5 – Evaluating, 6 - Creating)
CO – Course Outcomes PO – Program Outcomes; PI Code – Performance Indicator Code

Level	Marks	CO	Marks
Level1	5	CO1	0
Level2	5	CO2	0
Level3	0	CO3	0
Level4	0	CO4	5
Level5	0	CO5	5
Level6	0	CO6	0
Total	**10**	**Total**	**10**





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INVERTIS UNIVERSITY BAREILLY

Bareilly-Lucknow National Highway, Bareilly - 243123 (UP)

Tabulation Sheet

PROGRAM : MASTER OF SCIENCE (MICROBIOLOGY)
SEMESTER : FIRST
SESSION : 2022-23
COLLEGE : Faculty of Bio Science & Bio Technology

Sl. No.	Enrollment No.	Roll No.	Student ID	Student Name	MMB101					MMB102					MMB103					MMB104					MMB105					MMB151					MMB152					MMB153					MMB155		
					Max Marks				CR	Max Marks				CR	Max Marks				CR	Max Marks				CR	Max Marks				CR	Max Marks				CR	Max Marks				CR	Max Marks				CR	Max Marks		
					70	30	100		4	70	30	100		4	70	30	100		4	70	30	100		4	70	30	100		4	35	15	50		2	35	15	50		2	35	15	50		2	50	50	
					E	I	T	G	CS	E	I	T	G	CS	E	I	T	G	CS	E	I	T	G	CS	E	I	T	G	CS	E	I	T	G	CS	E	I	T	G	CS	E	I	T	G	CS	I	T	G
1	222502	2220821012	MSMB2022008	ALOK YADAV	28	25	53		4	30	17	47		4	37	24	61		4	30	26	56		4	33	28	61		4	32	15	47		2	28	14	42		2	30	12	42		2	41	41	
2	222995	2220821013	MSMB2022005	DHARMVEER	43	28	71		4	42	18	60		4	42	28	70		4	53	29	82		4	55	29	84		4	29	15	44		2	28	14	42		2	29	13	42		2	42	42	
3	223053	2220821014	MSMB2022013	EKTA	45	24	69		4	50	14	64		4	31	14	45		4	47	25	72		4	57	20	77		4	28	15	43		2	28	13	41		2	31	14	45		2	41	41	
4	223077	2220821015	MSMB2022006	FEEROZ ANWER	28	22	50		4	30	14	44		4	20	20	40		4	29	22	51		4	28	25	53		4	28	15	43		2	28	14	42		2	31	14	45		2	43	43	
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6	223201	2220821017	MSMB2022009	IFFA KHANAM	28	19	47		4	33	11	44		4	36	15	51		4	34	20	54		4	35	23	58		4	26	15	41		2	27	14	41		2	23	13	36		2	42	42	
7	223231	2220821018	MSMB2022001	JAIKARAN SINGH BAKSHI	53	12	65		4	44	6	50		4	44	12	56		4	46	12	58		4	46	12	58		4	25	15	40		2	28	13	41		2	29	12	41		2	44	44	
8	223276	2220821019	MSMB2022012	JYOTSANA KUSHWAHA	49	23	72		4	60	17	77		4	54	14	68		4	54	23	77		4	50	22	72		4	32	15	47		2	30	14	44		2	31	14	45		2	41	41	
9	223357	2220821020	MSMB2022014	KIRTI CHOUDHARY	28	24	52		4	43	22	65		4	38	24	62		4	51	26	77		4	51	24	75		4	27	15	42		2	28	13	41		2	29	12	41		2	42	42	
10	223568	2220821021	MSMB2022019	MOHD ADNAN	32	19	51		4	31	18	49		4	35	18	53		4	45	24	69		4	39	28	67		4	27	15	42		2	24	14	38		2	29	13	42		2	44	44	
11	223755	2220821022	MSMB2022017	NEELESH VERMA	32	25	57		4	38	21	59		4	46	24	70		4	49	26	75		4	33	23	56		4	26	15	41		2	28	13	41		2	30	12	42		2	42	42	
12	223795	2220821023	MSMB2022020	NISHA	42	25	67		4	47	21	68		4	52	15	67		4	33	22	55		4	46	23	69		4	28	15	43		2	28	14	42		2	28	12	40		2	41	41	
13	223876	2220821024	MSMB2022002	PRAGATI SACHAN	32	24	56		4	33	21	54		4	42	27	69		4	41	25	66		4	52	28	80		4	28	15	43		2	28	13	41		2	30	14	44		2	42	42	
14	224102	2220821025	MSMB2022003	RICHA CHAUHAN	45	26	71		4	58	26	84		4	60	25	85		4	59	27	86		4	58	27	85		4	29	15	44		2	29	14	43		2	31	14	45		2	43	43	
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17	224364	2220821028	MSMB2022007	SHANI BABU	33	23	56		4	33	20	53		4	28	21	49		4	50	28	78		4	46	28	74		4	28	15	43		2	27	13	40		2	31	14	45		2	43	43	
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19	224453	2220821030	MSMB2022018	SHOBHIT MISHRA	37	26	63		4	45	24	69		4	46	24	70		4	43	25	68		4	40	28	68		4	29	15	44		2	30	13	43		2	28	13	41		2	45	45	
20	224490	2220821031	MSMB2022004	SHUBHI JAISWAL	42	28	70		4	54	26	80		4	32	26	58		4	39	30	69		4	58	29	87		4	30	15	45		2	28	14	42		2	31	15	46		2	44	44	
21	224618	2220821032	MSMB2022016	SURVIT KUMAR	39	27	66		4	44	20	64		4	50	22	72		4	50	30	80		4	54	23	77		4	25	15	40		2	29	13	42		2	29	14	43		2	41	41	
22	225021	2220821033	MSMB2022022	SUBRAT SAXENA	37	24	61		4	51	20	71		4	42	20	62		4	45	25	70		4	48	26	74		4	26	15	41		2	28	14	42		2	29	11	40		2	43	43	

Pankaj
Head
Department of Biotechnology
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Dean
Faculty of Science
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Controller of Examination

Registrar

Vice Chancellor

Registrar
Invertis University
Bareilly

> CPI of Re-Appear Students are not Calculated

Passing marks - 40% in each course

Legend:-
E - External Marks I - Internal Marks
T - Total Marks

Date : Jan 24, 2023

P - Passed with Grace Marks

CR-Credit

MMB101 : DIVERSITY OF PROKARYOTIC & EUKARYOTIC
MMB104 : IMMUNOLOGY
MMB102 : MICROBIAL PHYSIOLOGY & METABOLISM
MMB105 : COMPUTER APPLICATIONS & BIOSTATISTICS
MMB103 : MOLECULAR BIOLOGY
MMB151 : MICROBIAL DIVERSITY & PHYSIOLOGY LAB