



Invertis University, Bareilly

PO Attainment

Faculty Name:
Course Name:

Er. Abhirup Mitra
Unit Operation in Food Engineering

Class/Sem:
Course Code:

MFT /2
MFT-202

Academic Year: 2022-23
Program Name: M.Sc.-FT

CO-PO MAPPING:

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

CO ATTAINMENT:

Er. Abhirup Mitra	Att. Level
CO1	2.22
CO2	2.22
CO3	2.83
CO4	2.22
CO5	2.22

PO ATTAINMENT :

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Overall PO Attainment	2.3	2.2	2.3	2.2	2.5	2.2	2.5	2.2	2.2	2.2		2.2

Faculty Signature

Head

Department of Agriculture
Invertis University, Bareilly

Dean Faculty of Agriculture
Invertis University
Bareilly-243123, UP

Registrar
Invertis University
Bareilly

Faculty Name: Er. Abhirup Mitra

Class/Sem: MFT /2

Academic Year: 2022-23

Course Name: Unit Operation In Food Engineering			Course Code: MFT-202										Program Name: M.Sc.-FT		
S. No.	University Reg. No.	Student Name	Internal Marks Scheme									Total Internal Marks	End Sem Exam Marks	Total Marks	
			First Unit Test	Second Unit Test	First Class Test	Second Class Test	Best One From Unit Test	Best One Form Class Test	Unit Test(UT)	Attendance(AT)	Teacher Assessment(TA)				
			Theory (30)	Theory (30)	Theory (10)	Theory (10)	Theory (30)	Theory (10)	12	12	6	Theory (30)	Theory (70)	Theory (100)	
1	210023	ABDUL BABAR	15	12	3	3	15	3	6	6	2	14	44	58	
2	210272	AMISHA TARANI	25	20	7	5	25	7	10	9	4	23	50	73	
3	210319	ANJALI PANDEY	25	20	7	5	25	7	10	10	4	24	44	68	
4	210922	KAMAAL AKHTAR	15	12	3	3	15	3	6	4	2	12	45	57	
5	210941	KARAN KUMAR ARYA	30	24	7	5	30	7	12	13	4	29	53	82	
6	210979	KHUSHBOO YADAV	15	12	3	3	15	3	6	6	2	14	38	52	
7	210997	KM HIMANI SHARMA	30	24	7	5	30	7	12	12	4	28	56	84	
8	211069	MANSI TEOTIA	20	16	3	3	20	3	8	8	2	18	65	83	
9	211447	PRIYANKA	25	20	7	5	25	7	10	9	4	23	35	58	
10	211569	RIDA	15	12	3	3	15	3	6	4	2	12	43	55	
11	211704	SAMRIDDHI GUPTA	15	12	3	3	15	3	6	7	2	15	28	43	
12	211753	SAURABH PANDEY	30	24	7	5	30	7	12	11	4	27	48	75	
13	211804	SHEFALI PANDEY	25	20	7	5	25	7	10	8	4	22	21	43	
14	211880	SHRIKANT CHANDRAKANT	15	12	3	3	15	3	6	4	2	12	47	59	
15	211890	SHUBHAM SINGH	20	16	3	3	20	3	8	8	2	18	65	83	
16	211987	SURAJ ANIL MORE	15	12	3	3	15	3	6	4	2	12	40	52	
17	211988	SURAJ KUMAR	20	16	3	3	20	3	8	8	2	18	60	78	
18	212112	VED PRAKASH	30	24	7	5	30	7	12	11	4	27	57	84	
19	210458	ARPIT KUMAR	20	16	3	3	20	3	8	8	2	18	19	37	
20	211067	MANSI SHARMA	0	0	0	0	0	0	0	0	0			0	
21	211215	MUSKAN SIKRI	0	0	0	0	0	0	0	0	0			0	
22	211547	RASHID KHAN	15	12	3	3	15	3	6	6	2	14	36	50	
23	211652	SACHIN KUMAR	15	12	3	3	15	3	6	4	2	12	8	20	
Students appeared for the examination			23	23	23	23	23	23	23	23	23	22	21	23	
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	8	8	21	8	21	16	8	12	18	19	
% Students scored above the target set			91%	91%	35%	35%	91%	35%	91%	70%	35%	18	86%	83%	
Attainment Level			3	3	1	1	3	1	3	2	1	15	3	3	

	CO1	CO2	CO3	CO4	CO5	Overall
	3	1	3	1	3	2.22
	3	1	3	1	3	2.22
	3	3	3	2	3	2.83
	3	3	3	2	3	2.22
	3	3	3	2	3	2.22

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

Overall attainment 2.34

Faculty Signature

Madhvi
Head
Department of Agriculture
Invertis University, Bareilly

SK
Registrar
Invertis University
Bareilly
Dean Faculty of Agriculture
Invertis University
Bareilly-243123, UP



Even Semester Examination 2022-23
MSC Food Technology- II Semester
Course/Code: Unit Operation in Food Engineering (MFT-202)
Maximum Marks :70; Duration: 3 Hours

Q.No	Questions	Marks (70)	CO	BL
	Explain the following:	01	CO1	L2
1-I	Define triple point.	01	CO2	L1
1-II	Two example of impactors. _____.	01	CO2	L2
1-III	Critical speed	01	CO2	L1
1-IV	Lyophilization	01	CO2	L1
1-V	Define segregation	01	CO1	L1
1-VI	Rittinger's law	01	CO1	L1
1-VII	Highest capacity of gyratory crusher			
	Explain the following:	01	CO1	L1
2-I	Explain the principles associated with size reduction.	01	CO1	L1
2-II	Explain the working of attrition mill.	01	CO1	L1
2-III	Discuss about the working of ball mill.	01	CO1	L2
2-IV	Explain the components of refrigeration system.	01	CO1	L1
2-V	Discuss about wet cleaning method in brief	01	CO1	L1
2-VI	Explain the working of falling film.	01	CO1	L1
2-VII	Explain the HTST.			
3-I	a) Explain the HTST and LTLT pasteurization process and its effect on food in brief. (or) b) Describe the spray drying with diagram and compare it with the other conventional dryers.	7	CO2	L2
3-II	a) Write down different factors influence drying along with drying curve. (or) b) Explain the steps involved in the final evolution of : $E = \frac{(F-G)(E-F)E(1-G)}{[(E-G)]^2 (1-F)F}$	7	CO3	L3
4-I	(a) Explain principles and working of twin shell or V-shaped mixer with diagram. (or) (b) Describe the paper making process with flow diagram.	7	CO3	L5
4-II	a) During evaluation of an air screen grain cleaner with 2 screen to 150 g sample were collected for analysis of clean seed fraction from different outlet. The data are presented in the following table, Calculate the cleaning efficiency of cleaner. Sample fraction Feed (g) Clean grain outlet (g) Blower outlet (g) Oversized outlet (g) Undersized outlet (g) Clean Seed (g) 131.25 146.5 1.25 4.5 2.0 Impurities (g) 18.75 3.5 148.75 145.5 148 (or) b) Discuss about wet cleaning method in brief.	7	CO4	L3
5	a) Discuss about the working of ball mill with diagram. (or) b) Explain the components of refrigeration system with the help of diagram.	14	CO5	L4
6	a) Explain the principles associated with size reduction. (or) b) Explain the working of attrition mill with the help of diagram.	14	CO5	L6

M. J. White
Head

Department of Agriculture
Invertis University, Bareilly

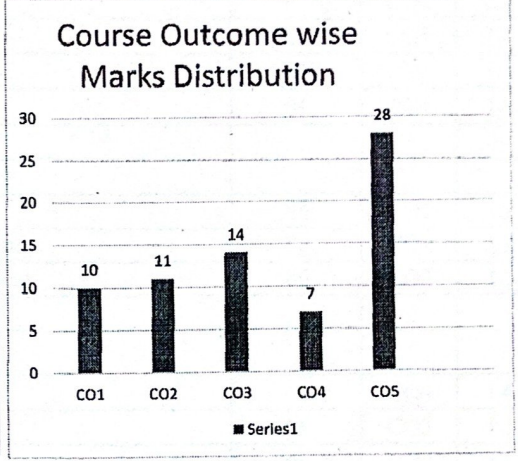
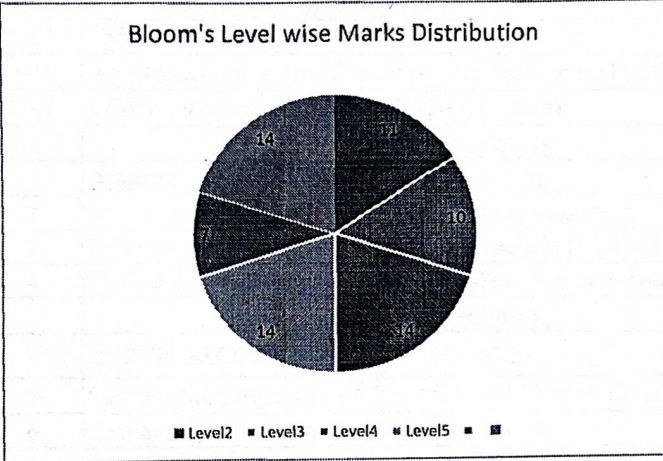
[Signature]
Dean Faculty of Agriculture

Invertis University
Bareilly-243123, UP

[Signature]
Registrar
Invertis University
Bareilly

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	28
Level6	14		
Total	70	Total	70



[Handwritten Signature]

Head
 Department of Agriculture
 Invertis University, Bareilly

[Handwritten Signature]

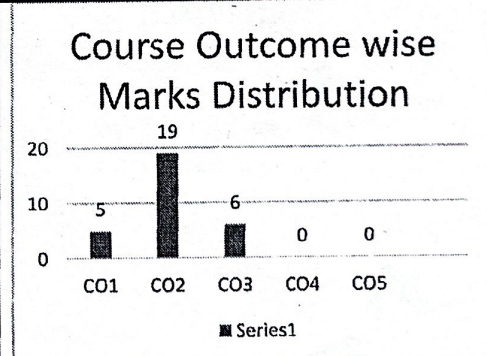
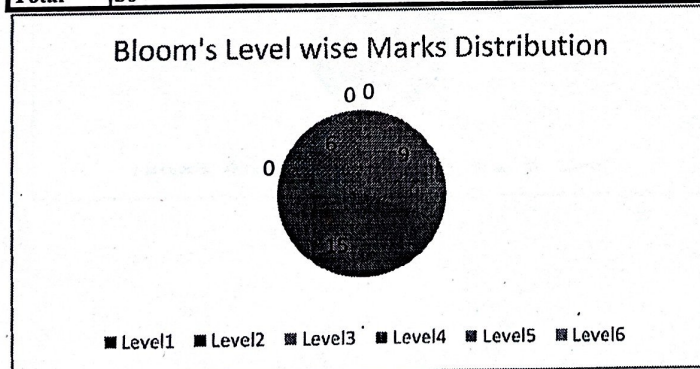
Dean Faculty of Agriculture
 Invertis University
 Bareilly-243123, UP

[Handwritten Signature]

Registrar
 Invertis University
 Bareilly

Q.No	Questions	Marks (30)	CO	BL
Section A				
Attempt all questions in this section				
1-I	CPET can withstand temperature.	01	CO1	L1
1-II	Density of HDPE.	01	CO1	L1
1-III	Size of the packaging industry.	01	CO2	L2
1-IV	Tensile of LDPE.	01	CO1	L2
1-V	Enlist the names of different plastic making methods.	01	CO1	L1
1-VI	Which polymer used for BIB (Boil in Bag).	01	CO1	L2
Section B				
Attempt any two questions in this section-				
2	Explain the specifications of RFID in food packaging.	06	CO2	L2
3	Describe the characteristics of polystyrene and Polyethylene	06	CO2	L2
4	Explain different types of metal baseplate used in packaging	06	CO2	L1
Section C				
Attempt any two questions in this section				
5	Discuss the properties of PE, PET and PVC in detail.	06	CO3	L4
6	Explain different plastic making methods.	06	CO3	L5
7	Discuss different type of base plate used in metal packaging.	06	CO2	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	9	CO1	5
Level2	15	CO2	19
Level3	0	CO3	6
Level4	6	CO4	0
Level5	0	CO5	0
Level6	0		
Total	30	Total	30



A. K. Verma
Head
Department of Agriculture
Invertis University, Bareilly

[Signature]
Dean Faculty of Agriculture
Invertis University
Bareilly-243123, UP

[Signature]
Registrar
Invertis University
Bareilly

Q.No	Questions	Marks (30)	CO	BL
Section A				
Attempt all questions in this section				
1-I	Example of thermoplastic.	01	CO4	L1
1-II	Plastics having monomers more equal or more than _____.	01	CO4	L2
1-III	Full form of LDPE.	01	CO4	L1
1-IV	Moisture transmission of HDPE is _____.	01	CO5	L1
1-V	Full form of APET.	01	CO6	L2
1-VI	_____ polymer is used for packaging of ginger garlic paste.	01	CO4	L2
Section B				
Attempt any two questions in this section-				
2	Explain NMBP and its limitations	06	CO5	L2
3	Describe different types of bleached craft and derivatives.	06	CO5	L2
4	Explain different tests practiced for corrugated boxes.	06	CO5	L3
Section C				
5	Explain different paper testing practiced for packaging purpose.	06	CO3	L3
6	Describe the paper making process with flow diagram.	06	CO4	L4
7	Explain the working and specifications of TTI and O ₂ scavenging system in food pa	06	CO5	L5

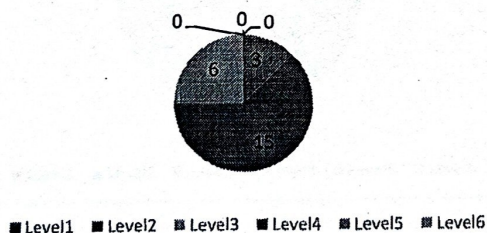
BL – Bloom's Taxonomy Levels

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

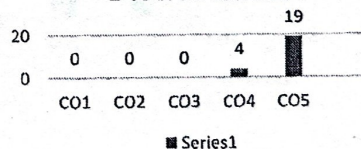
CO – Course Outcomes PO – Program Outcomes; PI Code – Performance Indicator Code

Level	Marks	CO	Marks
Level1	3	CO1	0
Level2	15	CO2	0
Level3	6	CO3	0
Level4	0	CO4	4
Level5	0	CO5	19
Level6	0		
Total	24	Total	23

Bloom's Level wise Marks Distribution



Course Outcome wise Marks Distribution



Quality

Head
Department of Agriculture
Invertis University, Bareilly

L.R.
Dean Faculty of Agriculture
Invertis University
Bareilly-243123, UP

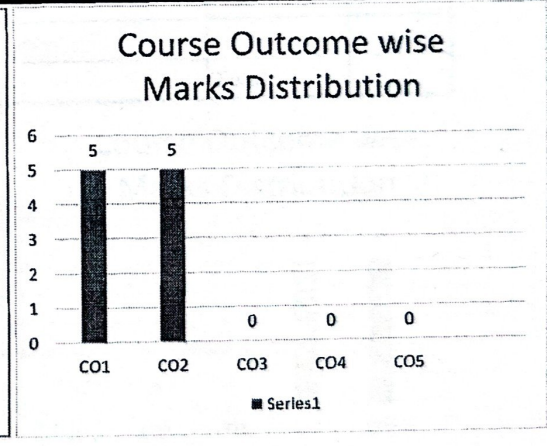
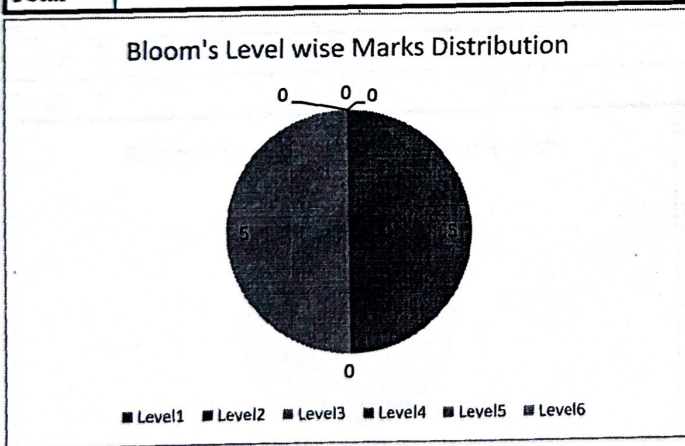
SK

Registrar
Invertis University,
Bareilly

Q.No	Questions	Marks (10)	CO	BL
1	Explain the HTST and LTLT pasteurization process and its effect on food in brief.	05	CO1	L3
2	Explain principles and working of twin shell or V-shaped mixer with diagram.	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		
Total	10	Total	10



[Signature]

Head
Department of Agriculture
Invertis University, Bareilly

[Signature]

Dean Faculty of Agriculture
Invertis University
Bareilly-243123, UP

[Signature]

Registrar
Invertis University
Bareilly



Second Class Test 2022-23

MFT- II Semester

Course/Code: Unit Operation in Food Engineering (MFT-202)

Maximum Marks :10; Duration: 30 Minutes

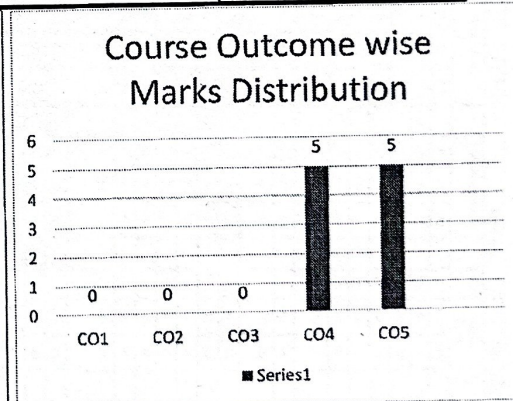
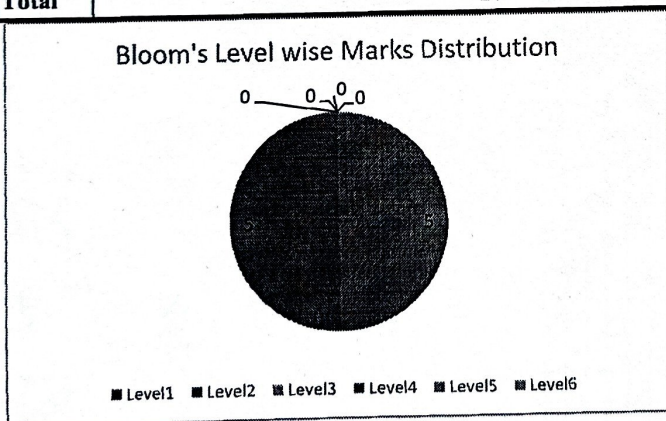
Q.No	Questions	Marks (10)	CO	BL
1	Describe the spray drying with diagram and compare it with the other conventional dry	05	CO4	L2
2	Explain the principles associated with size reduction.	05	CO5	L1

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		
Total	10	Total	10



Head
 Head
 Department of Agriculture
 Invertis University, Bareilly

Dean
 Dean Faculty of Agriculture
 Invertis University
 Bareilly-243123, UP

Registrar
 Registrar
 Invertis University
 Bareilly

PROGRAM : MASTER OF SCIENCE (FOOD TECHNOLOGY)
SEMESTER : SECOND
SESSION : 2021-22
COLLEGE : Faculty of Agriculture

Enrollment No.	Roll No.	Student ID	Student Name	Remarks
1	2120814001	MSFT2021025	ABDUL BABAR	Pass
2	2120814002	MSFT2021018	AMISHA TABANI	Pass
3	2120814003	MSFT2021022	ANJALI PANDEY	Pass
4	2120814006	MSFT2021021	KAMAAL AKHTAR	Pass
5	2120814007	MSFT2021029	KARAN KUMAR ARYA	Pass
6	2120814008	MSFT2021006	KEUSHBOO YADAV	Pass
7	2120814009	MSFT2021023	KM HIMANI SHARMA	Pass
8	2120814011	MSFT2021008	MANSI TEOTIA	Pass
9	2120814013	MSFT2021010	PRITANKA	Pass
10	2120814015	MSFT2021014	RIDA	Pass
11	2120814017	MSFT2021013	SAMRIDDHI GUPTA	Pass
12	2120814018	MSFT2021028	SAUDASH PANDEY	Pass
13	2120814019	MSFT2021005	SHEFALI PANDEY	Pass
14	2120814020	MSFT2021016	SHRIKANT CHANDRAKANT BAMANE	Pass
15	2120814021	MSFT2021007	SHUBHAM SINGH	Pass
16	2120814022	MSFT2021017	SURAJ ANIL MORE	Pass
17	2120814023	MSFT2021019	SURAJ KUMAR	Pass
18	2120814024	MSFT2021026	VED PRAKASH	Pass
19	2120814004	MSFT2021009	ANPIT KUMAR	PCP- MPT205
20	2120814010	MSFT2021004	MANSI SHARMA	Result hold due to FEES DUES
21	2120814012	MSFT2021003	MUSKAN SIKRI	Result hold due to FEES DUES
22	2120814014	MSFT2021027	RASHID KHAN	PCP- MPT205
23	2120814016	MSFT2021015	SACHIN KUMAR	Re-Appear- MPT202, MPT206, MPT207

Vice Chancellor

Registrar

Controller of Examination

CP of Re-Appear Students are not Calculated.
Passing marks - 40% in each course

Exam:-
External Marks I - Internal Marks
Total Marks
Date: Dec 21, 2022
Passed with Grace Marks
-Credit DT - Dismissed
I - Absent CS - Credits Secured
II - Dropt CS - Credits Secured

MPT201 : TECHNOLOGY OF FRUITS AND VEGETABLES
MPT251 : TECHNOLOGY OF FRUITS AND VEGETABLES LAB
MPT202 : UNIT OPERATIONS IN FOOD ENGINEERING
MPT252 : SEMINAR

MPT203 : RESEARCH METHODOLOGY, STATISTICS AND COMPOST MANURE TECHNOLOGY TRAINING

Department of Agriculture
Invertis University, Bareilly

Dean Faculty of Agriculture
Invertis University
Bareilly-243123, UP