

PO Attainment

Faculty Name: Mr. Mohit Pathak

Class-Sem: 7 Sem

Academic Year: 2022-23

Course Name: Operations Research

Course Code: BOE072

Program Name: BTECH

CO-PO MAPPING:

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

CO ATTAINMENT:

Mr. Mohit Pathak	Att. Level
CO1	3.00
CO2	3.00
CO3	3.00
CO4	2.09
CO5	2.20
CO6	2.67

PO ATTAINMENT :

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Overall PO Attainment	2.7	2.9	2.8	2.5	2.4	2.9	2.9	2.6	2.5	2.4	2.5	

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CO Attainment

Faculty Name: Mr. Mohit Pathak
Course Name: Operations Research

Class/Sem: 7 Sem
Academic Year: 2022-23
Course Code: BOE072
Program Name: BTECH

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	1910309002	NAVNEET KUMAR	28	22	8	7	28	8	11	10	5	26	35	61	
2	1910309003	RITIK GUPTA	30	24	8	7	30	8	12	12	5	29	39	68	
3	1910309005	TOUSEER AALAM	28	22	8	7	28	8	11	10	5	26	34	60	
4	1910309007	NAVEEN SHARMA	23	18	7	5	23	7	9	9	4	22	28	50	
5	1810309001	SYED NOMAN	0	0	0	0	0	0	0	0	0			0	
6	1910309006	AKASH YADAV	13	10	3	3	13	3	5	5	2	12	18	30	
7	1910309008	SAFWAN ADIL KHAN	13	10	3	3	13	3	5	5	2	12	13	25	
8	1910309011	JITENDRA MOHAN ARYA	23	18	7	5	23	7	9	9	4	22	21	43	
9	2050309001	ANKIT SINGH	30	24	8	7	30	8	12	11	5	28	42	70	
10	2050309002	VJENDRA PAL VERMA	20	16	7	5	20	7	8	8	4	20	20	40	
11	2050309003	HASSAN SIDDIQUI	13	10	3	3	13	3	5	5	2	12	32	44	
12	2050309006	VINOD KUMAR	25	20	8	7	25	8	10	10	5	25	29	54	
13	2050309008	MOHD SHADAN HAIDER	13	10	3	3	13	3	5	5	2	12	33	45	
14	2050309009	MOHD U A ISH	28	22	8	7	28	8	11	10	5	26	23	49	
15	2050309011	MOHD AMAAN	25	20	8	7	25	8	10	10	5	25	41	66	
16	2050309012	ARSHAD ALI	23	18	7	5	23	7	9	9	4	22	31	53	
17	2050309013	ALANKRIT	28	22	8	7	28	8	11	10	5	26	57	83	
18	2050309004	PRINCE SAXENA	13	10	3	3	13	3	5	5	2	12	18	30	
19	2050309005	REHAN RAZA KHAN	13	10	3	3	13	3	5	5	2	12	32	44	
20	2050309007	ABDUL MUHEE SIDDIQUI	18	14	5	4	18	5	7	6	3	16	28	44	
21	2050309010	KULDEEP VIJ	13	10	3	3	13	3	5	5	2	12	56	68	
Students appeared for the examination			1	1	1	1	1	1	1	1	1	1	1	1	1
Target / satisfactory mark set as benchmark			12	12	4	4	12	4	5	5	2	12	29	40	
Students scored above the target set			1	0	0	0	1	0	1	1	0	1	1	1	1
% Students scored above the target set			100%	0%	0%	0%	100%	0%	100%	100%	0%	100%	100%	100%	100%
Attainment Level			3	1	1	1	3	1	3	3	1	3	3	3	3

	CO1	CO2	CO3	CO4	CO5	CO6	Overall
CO1	3				3		3
CO2		3				3	3
CO3			3			3	3
CO4				3		3	3
CO5					3	3	3
CO6						3	3
Overall	3	3	3	3	3	3	3.00
CO1	3				3		3.00
CO2		3				3	3.00
CO3			3			3	3.00
CO4				3		3	2.09
CO5					3	3	2.20
CO6						3	2.67

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

Overall attainment 2.66

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Q.No	Questions	Marks (70)	CO	BL
1-I	(i) Waiting time	01	CO1	L2
1-II	(ii) Service time	01	CO2	L1
1-III	(iii) Economic order quantity	01	CO2	L2
1-IV	(iv) Queue length	01	CO3	L3
1-V	(v) Degeneracy	01	CO2	L1
1-VI	(vi) Constraints	01	CO1	L1
1-VII	(vii) Decision variables	01	CO1	L1
2-I	(i) Objective function	01	CO1	L1
2-II	(ii) Binding constraints	01	CO1	L1
2-III	(iii) Linear programming	01	CO1	L1
2-IV	(iv) Simple moving average	01	CO1	L2
2-V	(v) Delphi techniques	01	CO1	L1
2-VI	(vi) Utilization factor	01	CO1	L3
2-VII	(vii) Forecasting	01	CO1	L1
3-I	Consider the following LPP Maximize $Z = 45x + 40y$ Subjected to $2x + y \leq 90$ $x + 2y \leq 80$ $x + y \leq 50$ $x, y \geq 0$ Solve it by using Simplex method.	7	CO2	L2
3-II	Consider the linear programme (LP) Maximize $Z = 6x + 8y$ Subject to $3x + 2y \leq 6$ $2x + 3y \leq 6$ $x, y \geq 0$ Determine the solution of the above LPP.	7	CO3	L2
4-I	For the linear programming problem Maximize $Z = 3x_1 + 2x_2$ Subject to $-2x_1 + 3x_2 \leq 9$ $x_1 - 5x_2 \geq -20$ $x_1, x_2 \geq 0$ Outline the above LPP and find the solution.	7	CO3	L5
4-II	Analyze the problem and find the optimum sequence for following set of jobs and estimate make span time & idle time for each machine and also prepare gantt chart for the same. All data is in min. Jobs ABCDEFGHI Machine I 3651079865 Machine II 79854104912	7	CO4	L3

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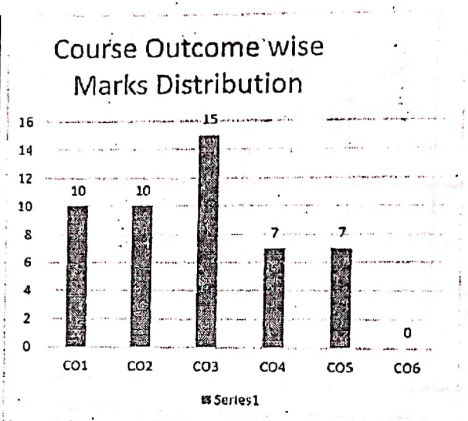
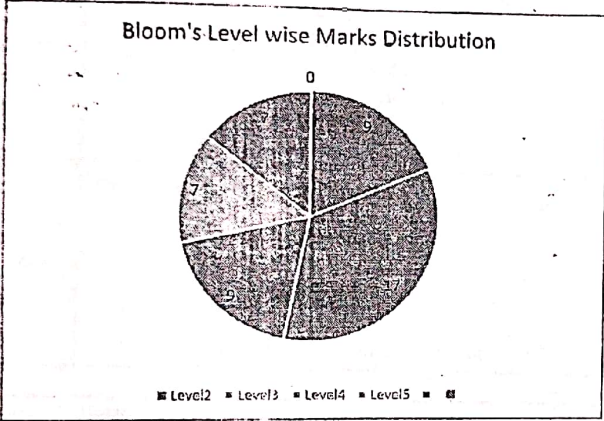
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S-1	(a) Workers come to tool store room to enquire about special tools needed a particular project. The average time between two arrivals is 60 sec and the arrivals are assumed to Poisson distributed. The average time of tool room attendant is 30 sec. Average que lenth.	7	CO5	L4
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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	10
Level2	17	CO2	10
Level3	9	CO3	15
Level4	7	CO4	7
Level5	7	CO5	7
Level6	0	CO6	0
Total	49	Total	49



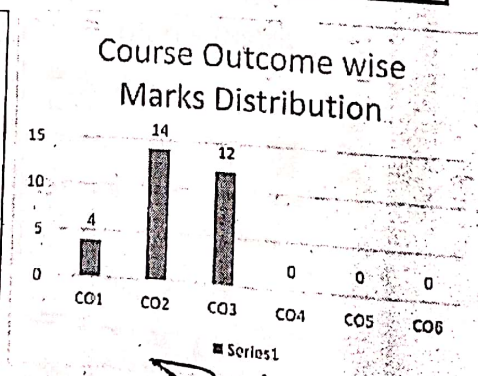
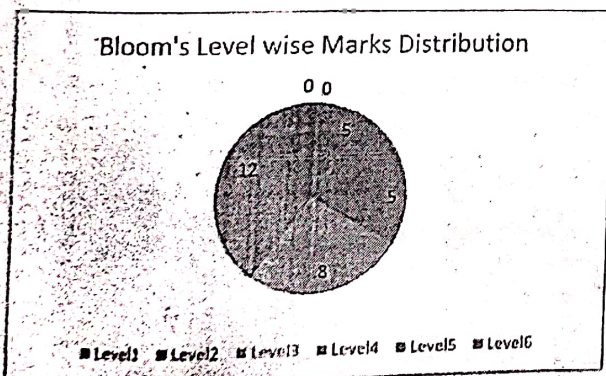
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Q.No	Questions	Marks (30)	CO	BL	
1-I	limiting time Service time Economic order quantity Queue length Degeneracy Contraints Decision variables Objective function Binding constraints Linear programming Simple moving average	01	CO1	L1	
1-II		01	CO1	L1	
1-III		01	CO2	L2	
1-IV		01	CO1	L2	
1-V		01	CO1	L1	
2-I		01	CO2	L2	
2-II		01	CO2	L1	
2-III		01	CO2	L2	
2-IV		01	CO2	L2	
2-V		01	CO2	L1	
3		08	CO2	L3	
4-A		Consider the following LPP Maximize $Z = 45x + 40y$ Subjected to $2x + y \leq 90$ $x + 2y \leq 80$ $x + y \leq 50$ $x, y \geq 0$ Solve it by using Simplex method.	06	CO3	L4
4-B		Consider the linear programme (LP) Maximize $Z = 6x + 8y$ Subject to $3x + 2y \leq 6$ $2x + 3y \leq 6$ $x, y \geq 0$ Determine the solution of the above LPP.	06	CO3	L4

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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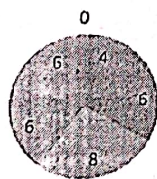
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Q.No	Questions	Marks (30)	CO	BL
1-I	limiting time Service time Economic order quantity Queue length Degeneracy Constraints Decision variables Objective function Binding constraints Linear programming	01	CO4	L1
1-II		01	CO4	L1
1-III		01	CO4	L2
1-IV		01	CO4	L1
1-V		01	CO4	L1
2-I		01	CO4	L2
2-II		01	CO5	L2
2-III		01	CO5	L2
2-IV		01	CO5	L2
2-V		01	CO5	L2
3	Simple moving average	08	CO5	L3
4-A	Consider the following LPP Maximize $Z = 45x + 40y$ Subjected to $2x + y \leq 90$	06	CO6	L4
4-B	Consider the linear programme (LP) Maximize $Z = 6x + 8y$ Subject to $3x + 2y \leq 6$	06	CO6	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

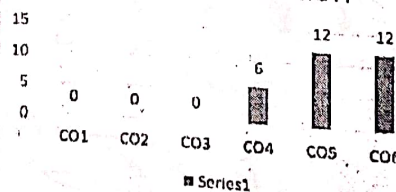
Level1	4	CO1	0
Level2	6	CO2	0
Level3	8	CO3	0
Level4	6	CO4	6
Level5	6	CO5	12
Level6	0	CO6	12
Total	30	Total	30

Bloom's Level wise Marks Distribution



■ Level1 ■ Level2 ■ Level3 ■ Level4 ■ Level5 ■ Level6

Course Outcome wise Marks Distribution



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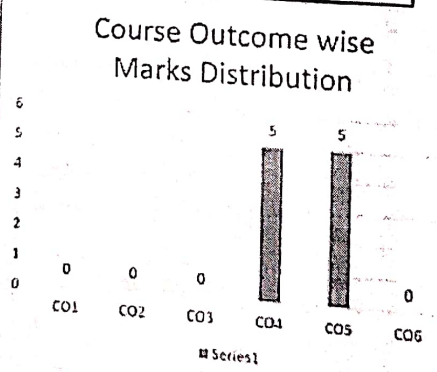
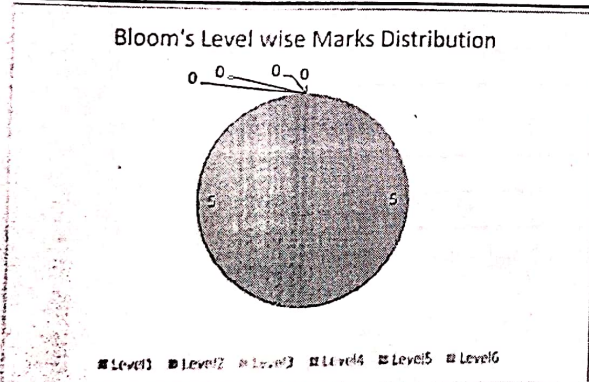
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Q.No	Questions	Marks (10)	CO	BL
1	1) Consider the linear programme (L.P) Maximize $Z = 6x + 8y$	05	CO4	L2
2	2) For the linear programming problem Maximize $Z = 3x_1 + 2x_2$ Subject to $-2x_1 + 3x_2 \leq 9$ $x_1 - 5x_2 \geq -20$ $x_1, x_2 \geq 0$ Outline the above LPP and find the solution.	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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Q.No	Questions	Marks (10)	CO	BL
1	Consider the linear programme (LP) Maximize $Z = 6x + 8y$ Subject to $3x + 2y \leq 5$ $2x + 3y \leq 4$ $x, y \geq 0$ Determine the solution of the above LPP	05	CO4	L1
2	For the linear programming problem Maximize $Z = 3x_1 + 2x_2$ Subject to $-2x_1 + 3x_2 \leq 7$ $x_1 - 5x_2 \geq -22$ $x_1, x_2 \geq 0$ Outline the above LPP and find the solution.	05	CO5	L2

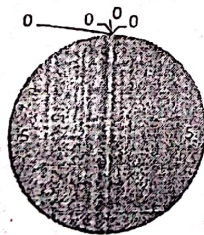
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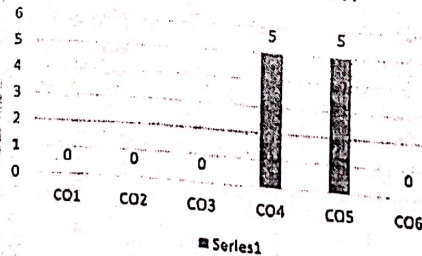
Level	Marks	CO	Marks
Level1	5	CO1	0
Level2	5	CO2	0
Level3	0	CO3	0
Level4	0	CO4	5
Level5	0	CO5	5
Level6	0	CO6	0
Total	10	Total	10

Bloom's Level wise Marks Distribution



Legend: Level1, Level2, Level3, Level4, Level5, Level6

Course Outcome wise Marks Distribution



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