



MONAD UNIVERSITY HAPUR (UP)

COURSE: MSc.-I Sem(Maths)-Subject Name: OPERATIONS RESEARCH

Assignment No: 1

Due date of submission: 10.11.2016

Instruction

1. Write the responses to the assignment in your own handwriting.
2. Submit the responses to your HOD within the due date.
3. Write your Name, Program me, and Enrolment No. clearly at the top of the page.

Q.1 (a) Discuss the scope of operations Research.

(b) Solve by graphical method

$$\begin{aligned} \text{Min } Z &= 5x_1 + 6x_2 \\ \text{Subject to } x_1 + x_2 &\geq 50 \\ x_1 + 2x_2 &\leq 40 \\ 3x_1 + 4x_2 &\leq 100, \text{ and } x_1, x_2 \geq 0 \end{aligned}$$

Q.2 (a) Find the dual of the following L.P.P.

$$\begin{aligned} \text{Min } Z &= 3x_1 + x_2 \\ \text{Subject to } 2x_1 + 3x_2 &\geq 2 \\ x_1 + x_2 &\geq 1, \text{ and } x_1, x_2 \geq 0 \end{aligned}$$

a) Find the initial basic feasible solution of the following transportation problem using Matrix minima method

		To			
		1	2	3	Available
From	A	2	7	4	5
	B	3	3	1	8
	C	5	4	7	7
	D	1	6	2	14
Requirement		7	9	18	



MONAD UNIVERSITY HAPUR (UP)

COURSE: MSc.-I SEM(Maths)-Subject Name:OPERATIONS RESEARCH

Assignment No: 2

Due date of submission: 10.11.2016

Instruction

1. Write the responses to the assignment in your own handwriting.
2. Submit the responses to your HOD within the due date.
3. Write your Name, Program me, and Enrolment No. clearly at the top of the page.

Q.1

a) Give the mathematical formulation of LPP.

b) Distinguish between CPM and PERT.

Q.2

a) Solve by simplex Method

$$\text{Max } Z = 2x_1 + 4x_2$$

$$\text{Subject to } 2x_1 + x_2 \leq 18$$

$$3x_1 + 2x_2 \geq 30$$

$$x_1 + 2x_2 = 26, \text{ and } x_1, x_2 \geq 0$$

b) Solve the following Transportation problem and check the optimality.

	S_1	S_2	S_3	S_4	a_j
O_1	1	2	1	4	30
O_2	3	3	2	1	50
O_3	4	2	5	9	20
b_j	20	40	30	10	100



MONAD UNIVERSITY HAPUR (UP)

Course: M.Sc(MATHS) I Sem, Subject Name: *Discreet Mathematics*

Assignment No: 1

Due date of submission: 10.11.2016

Instruction

1. Write the responses to the assignment in your own handwriting.
2. Submit the responses to your HOD within the due date.
3. Write your Name, Program me, and Enrolment No. clearly at the top of the page.

Q.1.

- (a) Write the isomorphism of group with example.
- (b) Group A and Group B are isomorphic if and only if for some ordering of their vertices and their adjacency matrix are equal.

Q.2

- (a) Define complete graph with example K_6 .
- (b) Write truth table for $p \wedge q \wedge r$, where p, q, r are any proposition.



MONAD UNIVERSITY HAPUR (UP)

Course: M.Sc, (MATHS) –I sem, Subject Name: *Discreet Mathematics*

Assignment No: 2

Due date of submission: 10.11.2016

Instruction

1. Write the responses to the assignment in your own handwriting.
2. Submit the responses to your HOD within the due date.
3. Write your Name, Program me, and Enrolment No. clearly at the top of the page.

Q.1.

- (a) Define adjacency matrix with example.
- (b) Explain bipartite graph with example.

Q.2

- (a) Write about minimum spanning tree.
- (b) A graph G has a spanning tree if and only if G is connected.



MONAD UNIVERSITY HAPUR (UP)

Course: MSc. Sem-I (Maths) MMTH-114 DIFFERENTIAL EQUATION

Assignment No: 1

Due date of submission: 10.11.2016

Instruction

1. Write the responses to the assignment in your own handwriting.
2. Submit the responses to your HOD within the due date.
3. Write your Name, Program me, and Enrolment No. clearly at the top of the page.

Q.1.

- (a) Determine if the following sets of functions are linearly dependent or linearly Independent.

$$f(x) = 9 \cos(2x) \quad g(x) = 2 \cos^2(x) - 2 \sin^2(x)$$

- (b) Solve.

$$x^2 y'' + xy' + (x^2 - p^2)y = 0.$$

Q2.

(a) Prove that $\int_0^{\pi/2} \sin^m \theta \cos^n \theta \, d\theta = \frac{\Gamma(\frac{m+1}{2}) \Gamma(\frac{n+1}{2})}{2 \Gamma(\frac{m+n+2}{2})}$

(b) Prove that $\Gamma(\frac{1}{2}) = \sqrt{\pi}$



MONAD UNIVERSITY HAPUR (UP)

Course: MSc. SEM-I (Maths) MMTH-114 DIFFERENTIAL EQUATION

Assignment No: 2

Due date of submission: 10.11.2016

Instruction

1. Write the responses to the assignment in your own handwriting.
2. Submit the responses to your HOD within the due date.
3. Write your Name, Program me, and Enrolment No. clearly at the top of the page.

Q.1.

(a) Classify The Partial Differential Equations. (i) $\frac{\partial^2 z}{\partial x^2} = \frac{\partial z}{\partial y}$ (ii) $\frac{\partial^2 z}{\partial x^2} + \frac{\partial^2 z}{\partial y^2} = 0$

(b). Solve $(\frac{\partial^2 z}{\partial x^2})^2 - 3 \frac{\partial z}{\partial x} \frac{\partial z}{\partial y} + 2(\frac{\partial^2 z}{\partial y^2})^2 = e^{2x-y} + e^{x+y} + \cos(x+2y)$

Q2.

(a) Solve the following equations by method of separation of variable

$$\frac{\partial^2 z}{\partial x^2} - 2 \frac{\partial z}{\partial x} + \frac{\partial z}{\partial y} = 0$$

(b) Solve $\frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} = 0$ which satisfies the conditions

$$u(0,y)=u(l,y)=u(x,0)=0 \& u(x,a) = \sin \frac{n\pi x}{l}$$



MONAD UNIVERSITY HAPUR (UP)

Course: MSc. SEM-I (Maths) Subject Name: Computer Fundamental

Assignment No: 1

Due date of submission: 10.11.2016

Instruction

1. Write the responses to the assignment in your own handwriting.
2. Submit the responses to your HOD within the due date.
3. Write your Name, Program me, and Enrolment No. clearly at the top of the page.

Q.1

- a) What do you mean by Computer? Write it's all characteristics.
- b) Define Primary & Secondary Memory?

Q.2

- a) Explain the Block Diagram of Computer in brief?
- b) Explain the generations of computers in brief?

Computer Fundamental

Assignment No: 02

Due Date of Submission: 10 Nov. 2016

Instructions:

- Write the responses to the assignment in your own handwriting.
- Submit the responses to your HOD with in the due date.
- Write your Name, Programme & Enrolment No. Clearly at the top of the page.

Question: 01

- a) Explain the introduction of office Automation & What is features of MS word?
- b) What do you understand Algorithm and explain the characteristics of algorithm?

Question: 02

- a) What is Flowchart and define the symbols of Flowchart?
- b) Explain the MS-Power Point with Example?



MONAD UNIVERSITY HAPUR (UP)

Course: MSc. SEM-I (Maths) Subject Name: Numerical Analysis

Course: M.Sc.

Assignment No:

Due date of submission: 10.11.2016

Instructions

1. Write the responses to the assignment in your own handwriting.
2. Submit the responses to your HoD within the due date.
3. Write your Name, Programme and Enrollment No. clearly at the top of page.

Q.1

- a) Solve the following equations by Gauss elimination method.

$$x + y + z = 6$$

$$2x - y + z = 3$$

$$2x + 2y + 2z = 12$$

- b) Find the value of $\int_0^1 \frac{dx}{1+x^2}$ by Simpson's 1/3rd rule if $h = 0.25$.

Q.2

- a) Use the Gauss – seidal method to approximate the solution of the following system of linear equations.

$$5x - 2y + 3z = -1$$

$$-3x + 9y + z = 2$$

$$2x - y - 7z = 3$$

- b) Solve the equations $e^x - 4x = 0$ using Newton Raphson iteration.

Course: M.Sc. (mathematics)

Assignment No: 2

Due date of submission: 10.11.2016

Instructions

1. Write the responses to the assignment in your own handwriting.
2. Submit the responses to your HoD within the due date.
3. Write your Name, Programme and Enrollment No. clearly at the top of page.

Q.1

- a) Solve the following equations by Jacobi method.

$$27x + 6y + z = 85$$

$$6x - 15y + 2z = 72$$

$$x + y + 54z = 110$$

- b) Difference between Jacobi method and Gauss- seidel method.

Q.2

- a) Use the LU decomposition method to solve the following linear equations.

$$2x + y + z = 2$$

$$x + 3y + 2z = 2$$

$$3x + y + 2z = 2$$

- b) Explain Taylor's method and Runge Kutta method.