DEPARTMENT OF MECHANICAL ENGINEERING
MONAD UNIVERSITY, HAPUR

Dated:-01/09/2017

Course: MT-ME-111, Numerical Methods and Computer Programming

Assignment No: 1

Due date of submission: 11/09/2017

Instructions

1. Write the responses to the assignment in your own handwriting & don't copy from other's assignment.
2. Submit the responses to your HoD within due date.
3. Write your name, programme, and Enrollment no. clearly at the top of the page.
4. Each question's part carries 5 marks.

Q.1

(a) Find f(2) for the data f(0) = 1, f(1) = 3 and f(3) = 55 by using Lagrange's formula.

x	0	1	3
f	1	3	55

(b) Find f(3) for the data using Newton's divided difference formula.

x	0	1	2	4	5	6
f	1	14	15	5	6	19

Q.2

(a) By using the Newton Raphson's method find the positive root of the quadratic equation

$5x^2 + 11x - 17 = 0$ correct to 3 significant figures

(b) Estimate f (42) from the following data using newton backward interpolation.

x:	20	25	30	35	40	45
f(x):	354	332	291	260	231	204

DEPARTMENT OF MECHANICAL ENGINEERING
MONAD UNIVERSITY, HAPUR

Course: MT-ME-112, Simulation modeling and analysis Dated:-01/09/2017

Assignment No: 1

Due date of submission: 11/09/2017

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Q.1

(a) You are aware about simulation. Explain the role of simulation in modeling evaluation and studies.

(b) You are familiar about physical modeling? Explain the various principle of modeling.

Q.2

(a) You know about feedback system. What are the differences between open loop system and close loop system?

(b) Describe the following:

(1) Analog simulation.

(2) Hybrid simulation.

(3) Monte Carlo method.

DEPARTMENT OF MECHANICAL ENGINEERING
MONAD UNIVERSITY, HAPUR

Dated:-01/09/2017

Course: MT-ME-113 – Advance Operation Research

Assignment No: 1

Due date of submission: 11/09/2017

Instructions

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Q.1

(a) You are aware about operation research. Explain the different tools and techniques used in operation research.

(b) You are familiar about optimization techniques. Define the following term

(i) Objective function (ii) constraint (iii) degeneracy

Q.2

(a) You know about linear optimization model. Explain degeneracy and duality.

(b) As you are aware about linear programming. Solve the linear programming using graphical method

Min $Z = 8X_1 + 4X_2$

Subject to: $6X_1 + 12X_2 \leq 48$

$4X_1 + 10X_2 \leq 44$

$3X_1 + 6X_2 \leq 36$

$X_1, X_2 \geq 0$

DEPARTMENT OF MECHANICAL ENGINEERING
MONAD UNIVERSITY, HAPUR

Dated:-01/09/2017

Course: MT-ME-114, Advanced Computer Aided Design (OE-I)

Assignment No: 1

Due date of submission: 11/09/2017

Instructions

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2. Submit the responses to your HoD within due date.
3. Write your name, programme, and Enrollment no. clearly at the top of the page.
4. Each question's part carries 5 marks.

Q.1

(a) Enumerate the graphics standards in advanced computer aided designing.

(b) How does the computer work as an aid in Design? Enlist and explain briefly.

Q.2

(a) Once you modify the surface using CAD, how will you put your modified design in production? Suggest (it will require modification in the tooling process or manufacturing process).

(b) What are different ways of representing curves in 3D? Give a practical example a 3D curve.