Jyothi Engineering College, Cheruthuruthy
SECOND SESSIONAL EXAMINATION
Semester 5, November 2019

(Department of Electrical & Electronics Engineering)
EE365- DIGITAL SYSTEM DESIGN
(KTU Scheme)

Time: 90 minutes

Max Marks:50

PART A
(Answer all questions)

Q No.	Questions	Marks	CO	Bloom's Taxonomy level
1	Compare ASM chart and Conventional Flow Chart	5	3	2
2	What are the different types of models used for describing synchronous sequential circuits? Explain	5	3,4	2
3	Write VHDL Code for serial in parallel out digital circuit? (Assume necessary data if Required)	5	4	3
4	Write VHDL Code for Negative edge triggered T FF? (Assume necessary data if Required)	5	4	3

PART B
(Answer 1 question out of 2)

Q No.	Questions	Marks	CO	Bloom's Taxonomy level
5	Explain basic elements used in ASM Chart?	10	3	2
6	Design and draw ASM chart for even parity generator which adds a parity bit to every 3 bits of message? (Assume necessary data if Required)	10	3	3

PART C
(Answer 1 question out of 2)

Q No.	Questions	Marks	CO	Bloom's Taxonomy level
7	Write VHDL Code for 4 bit ripple counter? (Assume necessary data if Required)	10	4	3
8	Write VHDL code for sequential Multiplier (Assume necessary data if Required)	10	4	3

PART D
(Answer 1 question out of 2)

Q No.	Questions	Marks	CO	Bloom's Taxonomy level
9	Design BCD counter and hence draw ASM chart and VHDL code for the same? (Assume necessary data if Required)	10	3	3
10	Write VHDL code for Dynamic RAM (Assume necessary data if Required)	10	4	3

☞ All the Best ☜

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Roll No:..............

Jyothi Engineering College, Cheruthuruthy
FIRST SESSIONAL EXAMINATION

Semester 5 , October 2020

(Electronics & Communication Engineering)
EC363: Optimization Techniques
(KTU Scheme)

Time: 60 minutes

Max Marks:40

INSTRUCTIONS

- *There are three sections in the question paper representing two modules*
- *There are two questions of 10 marks each in each section*
- *A total of four questions are to be answered out of the six questions given, but at least one question should be answered from each section.*
- *After the completion of examination the answer sheets should be uploaded in the google classroom within the stipulated time (09:30 am – 09:40 am). In case of network issues, submission can be done through whatsapp as per the directions from the teachers.*

	PART A			
Q No.	Questions	Marks	CO	BTL
1	Find Basic Feasible Solution using North-West corner rule	10	3	2

$$
\begin{array}{c|cccccc|c}
 & D_1 & D_2 & D_3 & D_4 & D_5 & D_6 & \text{Available} \\
\hline
O_1 & 1 & 2 & 1 & 4 & 3 & 2 & 30 \\
O_2 & 3 & 3 & 2 & 1 & 4 & 3 & 50 \\
O_3 & 4 & 2 & 5 & 9 & 6 & 2 & 75 \\
O_4 & 3 & 1 & 7 & 3 & 4 & 6 & 20 \\
\hline
\text{Req} & 20 & 40 & 30 & 10 & 50 & 25 & \\
\end{array}
$$

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2	Obtain the initial basic feasible solution for the following ation problem using Vogel's approximation method.	10	3	3

	A	B	C	Availability
1	13	15	16	17
2	7	11	2	12
3	19	20	9	16
Requirement	14	8	23	

PART B

Q No.	Questions	Marks	CO	BTL
3	State and prove the necessary and sufficient conditions for the relative minimum of a function of a single variable .	10	1	2
4	Define convex and concave function. Determine whether the following function are convex or concave. (i)$f(x) = e^x$ ii)$f(x) = 8x^2$	10	1	2

PART C

Q No.	Questions	Marks	CO	BTL
5	Solve the transportation problem using MODI method	10	3	3

	D1	D2	D3	ai
O1	7	10	5	90
O2	12	9	4	50
O3	7	3	11	80
O4	9	5	7	60
bj	120	100	110	

6	Find the extreme points of the function $f(x_1,x_2,x_3) = x_1 + 2x_3 + x_2x_3 - x_1^2 - x_2^2 - x_3^2$	10	1	2

A

Jyothi Engineering College, Cheruthuruthy
FIRST SESSIONAL EXAMINATION
Semester 3, October 2020

(Department of Civil Engineering)
MAT201: Partial Differential Equations and Complex Analysis
(KTU Scheme)

Time: 60 minutes   *Max Marks: 40*

INSTRUCTIONS

- *There are three sections in the question paper representing two modules*
- *There are two questions of 10 marks each in each section*
- *A total of four questions are to be answered out of the six questions given, but at least one question should be answered from each section.*
- *After the completion of examination the answer sheets should be uploaded in the Google classroom within the stipulated time (09:30 am – 09:40 am). In case of network issues, submission can be done through whatsapp as per the directions from the teachers.*

PART A

Q No.	Questions	Marks	CO	BTL
1	Find the value of 'a' so that $u = xy + ax^2 - y^2$ is harmonic. Find its harmonic conjugate.	10	3	1, 2
2	Prove that an analytic function of constant modulus is constant.	10	3	1, 2

PART B

Q No.	Questions	Marks	CO	BTL
3	Using Cauchy's integral formula, evaluate $\int_c \frac{z^2}{(z-1)^2(z+2)} dz$ where c is $\lvert z - 2 \rvert = 2$	10	4	1,2
4	If $f(z) = \frac{1}{z+1}$, find the Taylor series at the point z = 2. Also find its region of validity.	10	4	1,2

PART C

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Q No.	Questions	Marks	CO	BTL
5	Show that $\int_c |z|^2 dz = -1 + i$ where c is the rectangle with vertices (0,0), (1,0), (1,1) and (0,1).	10	4	1,2
6	Find the image of the infinite strips (i) $\frac{1}{4} \leq y \leq \frac{1}{2}$ and (ii) $0 < y < \frac{1}{2}$ under the transformation $w = \frac{1}{z}$	10	3	1,2

***All the Best ***

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