Department of Computer Science (New Campus)
University of Engineering & Technology, Lahore

Subject: **Computer Organization & Assembly Language**
(3rd Semester, 2020 Session)

Final Term

Student's Name: _____ Mahe _____

Reg. Number: _____ 15 _____

Total Marks: **50**

Time Allowed: **120 Minutes**

CLO-3	**Question # 1** 5	10 marks
	Write a program that prompts the user to enter a number and saves it in a variable named n. It then calculates and prints the sum of all the numbers between 1 and n. For example, if user enters 5 then the output should be: **The sum is 15**	
CLO-3	**Question # 2**	10 marks
	Write a program that extracts a substring from a string of 20 characters entered by the user. The substring should concatenate the first 5 and last 5 characters of the string. For example, if the user enters **Software Engineering**, the output should be the substring **Softwering**.	
CLO-1	**Question # 3**	10 marks
	Define a structure Mobile with two fields MobNum and Balance. MobNum is of type BYTE whereas Balance is of type DWORD. Declare and initialize a variable of type Mobile. In the main procedure, prompt the user to enter an amount to recharge his balance. It then updates the balance after deducting 10% tax. For example, if user enters 500 then it should add 450 to the balance. (Hint: To deduct 10% tax from 500, multiply 500 with 10 and divide by 100, then use quotient as the tax amount.)	
CLO-3	**Question # 4**	2*10 = 20 marks
	Explain the following instructions of the assembly language. In each case, give one example of usage. a. IDIV b. CBW c. MUL d. IMUL e. ADC f. SBB g. MOVSB h. SCASB i. AAA j. AAS	

Q.1 (a) What is Psychology? Write the difference between Sociology, Anthropology and Psychology. 05

(b) Define Personality. Explain psychosexual developmental stages and their fixation. 05

Q.2 (a) To reduce anxiety provoking conflicts, what type of defenses people use? 05

(b) What is Procrastination? Why do we procrastinate and how we can prevent it? 05

Q.3 (a) Draw Maslow's hierarchy of needs and write a short note on social learning theory. 05

(b) What are the causes and signs of stress, and how we can manage our stress in a stressful situation? 05

PAPER BSc. COMPUTER SCIENCE- ENG.

Islamic & pak Studies

Mid Term-7th. Semester-2018

Time: 60 Mnts.

Total Marks: 30

Note: All questions carry equal Marks.

سوال نمبر 1۔ درج ذیل آیت کا ترجمہ اور احکامات کی وضاحت کریں۔۔

وَلَا تَلْمِزُوا اَنْفُسَكُمْ وَلَا تَنَا بَزُوا بِا الْاَلْقٰبِ بِئْسَ الْاِسْمُ الْفُسُوقُ بَعْدَالْايمٰنِ وَمَنْ لَّمْ يَتُبْ

فَاُولٰئِكَ هُمُ الظّٰلِمُوْنَ

سوال نمبر 2 ۔ درج ذیل حدیث کا ترجمہ اور وضاحت کریں۔۔

عَنْ اُمُّ الْمُوْمِنِيْنَ عَائِشَةَ قَالَتْ : قَالَ رَسُولُ اللّٰهِ ﷺ مَنْ اَحْدَثَ فِیْ اَمْرِنَا هٰذَا مَا لَيْسَ

مِنْهُ فَهُوَ رَدٌّ

سوال نمبر 3۔ سورہ الفرقان کی روشنی میں عباد الرحمٰن کی صفات تحریر کریں۔

سوال نمبر 4۔ شاہ ولی اللہ کی دینی خدمات پر نوٹ لکھیں۔۔

سوال نمبر 5۔ سر سید احمد خان کی تعلیمی اور سیاسی خدمات کا جائزہ لیں۔

Time duration: 1.5 hour

Total Marks:

35

Attempt any two in given below questions.

	10Marks
1. What are the three main writing processes? Explain in detail.	CLO 1
2. Highlights the five affective techniques of Business Memos.	

2. Answer the short questions:

	3x5=15
1. Define technical writing components.	CLO 1
2. Clarify memo format in official use.	
3. Explain the types of writing.	
4. Elaborates the difference between cohesion and coherence.	
5. Explore Letter writing elements.	

Lab Mid

Course:	Computer Organization and Assembly Language (LAB)	Marks: 40
Class: BSCS 3rd		Session/Section: 2020/A2

Question-1: Write a program in assembly language to take 5 inputs in an array and print the maximum number, minimum number and entered values in one line. Use the symbol "|" as separator between the elements of array e-g your result should be displayed as 1|2|3|4|5. It is mandatory to use indirect addressing for stepping in array.

Question-2: Write a program which takes a string input from user in main, a procedure RevStr would reverse this string by copying into another string, another procedure DispStr would print the original and reverse string and display the Number of characters entered by the user.

Question-3: Write a program which takes 5 inputs in an array in main, a procedure Asort to sort sort this array in Asc. Order, another procedure Dsort to sort this array in Desc. Order and a Procedure DispArr to Display the original, Ascending and Descending array.

Question-4: Write a program that clears the screen, locates the cursor near the middle of the screen, prompts the user for two integers, adds the integers, and displays their sum.

Department of Computer Science

University of Engineering and Technology Lahore, New Campus

| | MA-224 Multivariate | Mid Term Exam | Reg no: | Section: |
| Subject: | Calculus | Spring 2021 | Time Limit: 60 mins | Total Marks: 30 |

o Attempt all the questions.
o All the questions given below are taken from CLO 1 and each question is of equal marks.

Question 1:

Define directional derivative of f, also find the direction in which $f(x,y) = x^2 + xy + y^2$ Increases and decreases most rapidly at $(-1, 1)$. Then find derivative of f in these directions.

Question 2:

Define first derivative test for extreme values also find the absolute maxima and minima of $f(x,y) = 2x^2 - 4x + y^2 - 4y + 1$ on the closed triangular plate bounded by the lines $x = 0, y = 2$ and $y = 2x$ in the first quadrant.

Question 3:

Define parametric equation for a line. Find $\frac{\partial w}{\partial r}$ and $\frac{\partial w}{\partial s}$ in the terms of r and s if

(1) $w = z + 2y + z^2, x = \frac{r}{s}, y = r^2 + \ln s, z = 2r$
(2) $w = x^2 + y^2, x = r - s, y = r + s$

Good Luck

Department of Computer Science (New Campus)
University of Engineering & Technology, Lahore

Subject: **Digital Logic Design**   (2nd Semester, 2020 Session)   Total Marks: **40**
               Mid Term   Time: **90 Minutes**
Student's Name: ___Maha___   Reg. Number. ___2020-Cs___

CLO-1	Question # 1	10 marks

a) What is a digital system? Describe the different types of digital logic circuits / systems with diagrams.
b) What does Binary Coded Decimal (BCD) mean? How can we convert a decimal number to BCD and vice-versa?

CLO-2	Question # 2	10 marks

Determine the Boolean functions for outputs F_1 and F_2 as a function of the three inputs and obtain the truth table for the circuit given below. Explain the working of the circuit.

$A.B.C$

$A+B+C$

$A+B+C$

$\overline{AB+AC+BC}$

$AB+AC+BC$

$(A+B+C) \cdot (\overline{AB+A \cdot C \cdot M_2})$

$2^5 \quad 2^2$

$32 \quad 16 \quad 8 \quad 4 \quad 2 \quad 1$

32
16
48

CLO-3	Question # 3	10 marks

Design a combinational circuit that accepts a 3-bit number (A_2, A_1, A_0) and generates a 6-bit binary number $(B_5, B_4, B_3, B_2, B_1, B_0)$ equal to the square of the input number.

CLO-3	Question # 4	10 marks

Design the combinational circuit using a **3-to-8 Line Decoder** and **OR** gates. The circuit is defined by the following three Boolean functions:

$$F_1 = \bar{X}\bar{Y}Z + X\bar{Z}$$
$$F_2 = \bar{X}Y\bar{Z} + X\bar{Y}$$
$$F_3 = XY\bar{Z} + XY$$

$b_0 = \bar{A_2}\bar{A_1}A_0 + A_2 A_1 A_0 + A_2\bar{A_1}A_0 + \overline{A_2}$

16
8
16
8

$\bar{A_2}\bar{A_1}A_0$

$Mdx + Ndx$

$$\iint_R \frac{\partial N}{\partial x} - 2 \, dy \, dx$$

$$\frac{M}{dy}$$

Department of Computer Science
University of Engineering and Technology Lahore, New Campus

	Final Term	Reg no:	Section:
Subject:	Exam Spring	Time Limit: 90 mins	Total Marks: 40
MA-224	2021		
Multivariate			
calculus			

$\int NI \, \partial y + N$

o   Attempt all the questions.
o   All the questions given below are taken from (CLO 2 & CLO 3)
    and each question is of equal marks.

Question 1:
          State and prove the Green's theorem for spherical region (with the help of figures).

Question 2:
          Find the area of the cap cut from the hemisphere $x^2 + y^2 + z^2 = 2$, $z \geq 0$ by the
Cylinder $x^2 + y^2 = 1$.

Question 3:
          Discuss/ Drive the line integral with the help of figure and evaluate $f(x,y,z) = x - 3y^2 + z$ over the line segment C joining origin to the point (1,1,1).

Question 4:

$\frac{dr}{dt}$ $|vb|$

(a)   Find the area of the region that lies inside the cardioid $r = 1 + \cos\theta$ and outside
the circle $r = 1$.

(b)   Sketch the region of integration for the integral $\iint_{0 \ x}^{2 \ 2} 2y^2 \sin xy \, dy \, dx$ and write
an equivalent integral with the order of integration reversed.

Department of Computer Science (New Campus)
University of Engineering & Technology, Lahore

Subject: Digital Logic Design   (2nd Semester, 2020 Session)   Total Marks: **40**
Final Term   Time: **120 Minutes**

Student's Name: _____   Reg. Number: _____

CLO-2	**Question # 1**	10 marks

A sequential circuit with two D Flip-Flops, A and B; two inputs, X and Y; and one output, Z, is shown below. Perform the following tasks:

a) Determine the inputs and outputs of the circuit and that of the Flip-Flops.
b) Construct the State Table
c) Construct the State Diagram

CLO-2	**Question # 2**	10 marks

What is the difference between a Latch and a Flip-Flop? Explain your answer with the help of a timing diagram. Moreover, draw the logic diagram of SR Latch with Control input and provide its function table.

CLO-3	**Question # 3**	10 marks

Design a Sequential circuit to recognize the sequence **1001**. The circuit has one input X and one output Z. It has Reset applied to the direct reset inputs on its flip-flops to initialize the state of the circuit to all zeros. The circuit is to recognize the occurrence of the sequence of bits 1001 on X by making Z equal to 1 when the previous three inputs to the circuit were 100 and current input is a 1. Otherwise, Z equals 0.

CLO-3	**Question # 4**	10 marks

Design a counter with the following binary sequence: 1, 2, 5, 7 and repeat. Use Flip-Flops of your choice.

Department of Computer Science
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Subject:	MA-224 Multivariate Calculus	Mid Term Exam Spring 2021	Reg no:	Section:
			Time Limit: 60 mins	Total Marks: 30

- ○ Attempt all the questions.
- ○ All the questions given below are taken from CLO 1 and each question is of equal marks.

Question 1:

Define directional derivative of f, also find the direction in which $f(x,y) = x^2 + xy + y^2$ Increases and decreases most rapidly at $(-1,1)$. Then find derivative of f in these directions.

Question 2:

Define first derivative test for extreme values also find the absolute maxima and minima of $f(x,y) = 2x^2 - 4x + y^2 - 4y + 1$ on the closed triangular plate bounded by the lines $x = 0, y = 2$ and $y = 2x$ in the first quadrant.

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(2) $w = x^2 + y^2, x = r - s, y = r + s$

Good Luck

Department of Computer Science (New Campus)
University of Engineering & Technology, Lahore

Subject: Computer Organization & Assembly Language
(3ʳᵈ Semester, 2020 Session)

Mid Term

Total Marks: **30**

Time Allowed: **90 Minutes**

Student's Name: _Maha Mumtaz_   Reg. Number: _2020 -CS - U_

CLO-1	**Question # 1** What are CPU registers? Briefly describe the registers of **x86-32** processor.	10 marks
CLO-2	**Question # 2** Write a program that performs the following tasks in the given sequence: 1. Clears the screen. 2. Locates the cursor in the middle of the screen. 3. Prompts the user to enter two integers one by one. 4. Adds the two integers. 5. Displays the sum of the integers on the screen. 6. Halts / Delays the program for 5 seconds. 7. Repeats steps 1 to 5 three times using a loop.	10 marks
CLO-2	**Question # 3** Create a procedure named **CalcGrade** that receives an integer value between 0 and 100, and returns a single capital letter in the **AL register**. The letter returned by the procedure should be according to the following ranges:	10 marks

Score Range	Letter Grade
90 to 100	A
80 to 89	B
70 t0 79	C
60 to 69	D
0 to 59	F

In the main procedure, prompt the user to enter an integer, pass it to **CalcGrade** and display the integer along with the corresponding grade.