



**QUAID-E-AWAM UNIVERSITY OF ENGINEERING, SCIENCE & TECHNOLOGY, NAWABSHAH**

**MID-SEMESTER EXAMINATION OF FIRST SEMESTER – FIRST YEAR (1<sup>ST</sup>) 2023, 22-BATCH,**

**B.E (SW / CH) / B.S (FET)**

**SUBJECT: FUNCTIONAL ENGLISH**

**Dated: 17.02.2023**

**Maximum Marks: 10**

**Time Allowed: 45 Min**

**NOTE: ATTEMPT ALL QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS.**

Q. No.	QUESTIONS	PLO's	CLO's	Mar
01	English Language plays paramount role for engineering and science students in multiple ways. What is Functional English? Define in detail the importance of English for engineering and science students during study and following graduation at workplace.	2	1	05
02	Paragraph writing is an important part of English language. What is a Paragraph? Give detailed account of paragraph writing highlighting its various sections and their functions in detail.	2	1	05

**---The End---**



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**MID-SEMESTER EXAMINATION OF FIRST SEMESTER - FIRST YEAR (1<sup>st</sup>) 2023, 22-BATCH, B.E (SW)**

**SUBJECT: APPLIED CALCULUS**

**Dated: 15.02.2023**

**Maximum Marks: 20**

**Time Allowed: 01 Hour**

**NOTE: ATTEMPT ALL QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS.**

Q.No		CLO	Taxonomy Level	PLOs	Marks
01(a)	Differentiate between Range & Co-Domain of the function with a example, also find the inverse of $f(x) = \frac{2x+1}{x+3}$	1	C4	1	05
01(b)	Why we use composition of functions states the reason? Find $f \circ g$ where $f(x) = x^2 - 2$ and $g(x) = \sin(x+1)$	1	C1	1	05
02(a)	Solve the following limits (any two) (i) $\lim_{x \rightarrow 0} \frac{\sin 4x}{\sin 5x}$ (ii) $\lim_{x \rightarrow 0} \frac{e^x - 1}{e^x + 1}$ (iii) $\lim_{x \rightarrow y} \frac{y^2 - x^2}{y - x}$	1	C3	1	04
02(b)	Examine the root of $ x-2  +  x-4  = 10$	1	C4	1	06

**---Good Luck---**



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**MID-SEMESTER EXAMINATION OF FIRST SEMESTER – FIRST YEAR (1<sup>st</sup>) 2023, 22-BATCH, B.E (SW)**

**SUBJECT: PROGRAMMING FUNDAMENTALS**

**Dated: 16.02.2023**

**Maximum Marks: 20**

**Time Allowed: 01 Hour**

**NOTE: ATTEMPT ALL QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS.**

Q. No.	Question	CLOs	Taxonomy Level	PLOs	Marks
Q. 01	(a) Explain any three of the following: 1. Identifier 2. Compiler and Interpreter 3. Comments in C 4. Type Casting 5. Variables and Data types	1	C1	1	06
	(b) Write a C/C++ program that ask user to enter temperature in Fahrenheit and convert it into Celsius. (Note: celsius = (fahrenheit - 32)*5/9).	1	C2	1	04
Q. 02	(a) What is operator precedence? Explain following operators with suitable example. 1. Arithmetic Operator 2. Relational Operator 3. Logical Operator	1	C1	1	06
	(b) Write a C/C++ program that asks the user to enter the radius, then computes the area of the circle and displays the result.	1	C2	1	04

**The End**



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**MID-SEMESTER EXAMINATION OF FIRST SEMESTER – FIRST YEAR (1<sup>ST</sup>) 2023, 22-BATCH, B.E (CE)**

**SUBJECT: APPLIED CALCULUS**

**Dated: 15.02.2023**

**Maximum Marks: 20**

**Time Allowed: 01 Hour.**

**NOTE: ATTEMPT ALL QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS.**

Q. No.	QUESTIONS	CLO	Taxonomy Level	Marks
01	<p>Every <i>one-to-one function</i> is linear?</p> <p>At the surface of the ocean, the water pressure is the same as the air pressure above the water, <math>20 \text{ lb/in}^2</math>. Below the surface, the water pressure increases by <math>5 \text{ lb/in}^2</math> for every <math>15 \text{ ft}</math> of descent.</p> <p>Express the water pressure as a function of the depth below the ocean surface. Also sketch the graph of obtained linear model. At what depth is the pressure <math>90 \text{ lb/in}^2</math>?</p>	<i>I</i>	<i>C2</i>	<i>10</i>
02	<p>Let <math>f(x) = \frac{x}{x+1}</math> and <math>g(x) = 2x - 1</math>, then show that <math>(f \circ g)^{-1} = g^{-1} \circ f^{-1} = h(x)</math> and is <i>one-to-one function</i>.</p>	<i>I</i>	<i>C2</i>	<i>10</i>





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**MID-SEMESTER EXAMINATION OF FIRST SEMESTER – FIRST YEAR (1<sup>ST</sup>) 2023, 22-BATCH,**

**B.E (SW / CH) / B.S (FET)**

**SUBJECT: FUNCTIONAL ENGLISH**

**Dated: 17.02.2023**

**Maximum Marks: 10**

**Time Allowed: 45 Minutes.**

**NOTE: ATTEMPT ALL QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS.**

Q. No.	QUESTIONS	PLO's	CLO's	Marks
01	English Language plays paramount role for engineering and science students in multiple ways. What is Functional English? Define in detail the importance of English for engineering and science students during study and following graduation at workplace.	2	1	05
02	Paragraph writing is an important part of English language. What is a Paragraph? Give detailed account of paragraph writing highlighting its various sections and their functions in detail.	2	1	05

**---The End---**

Q No	QUESTION	TDs	Proficiency Level	PDs	Marks
Q 1 (a)	Define 1) Capacitor 2) Dielectric 3) Capacitance Derive an expression for Four (04) capacitors which are connected in Series form.	1	C1	1	(06)
Q 1 (b)	Three capacitors having values $C_1 = 10 \mu F$ , $C_2 = 20 \mu F$ and $C_3 = 30 \mu F$ are connected in series form. Calculate the total capacitance of the circuit having supply voltage of 5 V, and voltage drop across each Capacitor.	1	C1	1	(06)
Q 2 (a)	What is Electrostatic? State and Explain Law of Electrostatic.	1	C1	1	(06)
Q 2 (b)	Two unequal $q_1$ and $q_2$ are placed at distance from each other, the force between them is 0.2 N, when it is at 10 m. What is the force between them, when it is at (a) 5 meter (b) 15 meter	2	C2	2	(06)
Q 3	What are Resistor and Voltage??  A kitchen in North America has three appliances connected to a 120 V circuit with a 15A circuit breaker: an 850 W coffee maker, a 1200 W microwave oven, and a 900 W toaster. a. Draw a schematic diagram of this circuit. b. Which of these appliances can be operated simultaneously without tripping the circuit breaker?	3	C1	3	(12)
Q 4 (a)	State and Explain Faradays Laws of Electromagnetic Induction.	2	C2	2	(06)
Q 4 (b)	The field coils of a 4 pole d.c. generator each having 300 turns, are connected in series. When the field is excited, there is a magnetic flux of 0.04 Wb/pole. If the field circuit is opened in 0.06 second and residual magnetism is 0.006 Wb/pole, calculate the average voltage which is induced across the field terminals. In which direction is this voltage directed relative to the direction of the current.	2	C2	2	(06)
Q 5	What are work and energy? Explain the following a. Kinetic and Potential Energy b. Conservation Energy c. Linear and Angular Momentum d. Equilibrium and Elasticity	3	C1	3	(12)

$$F = k \frac{q_1 q_2}{r^2}$$

$$F = 9 \times 10^9 \frac{q_1 q_2}{25}$$

Good Luck

$$\begin{array}{r} 5 \overline{) 100.00} \\ \underline{20} \phantom{00} \\ 20 \phantom{00} \\ \underline{20} \phantom{00} \\ 0 \phantom{00} \end{array}$$





Date: 15.05.2023

Maximum Marks: 60

Time Allowed: 03 Hour

NOTE: ALL QUESTIONS CARRY EQUAL MARKS.

Q No	Question	CTOs	Complexity Level	PTOs	Marks
Q. 01	(a) What is the difference between a while loop and a do-while loop in C/C++? Drawn flowchart and give an example of when you would use each type of loop.	2	C1	2	06
Q. 01	(b) Write a program in C/C++ that uses a for loop to calculate the factorial of a given integer input by the user. The program should keep asking the user for input until they enter a non-negative integer. Hint: The factorial of a number n is the product of all positive integers from 1 to n. The factorial of 0 is defined as 1.	2	C2	2	06
Q. 02	(a) Explain the concept of arrays in C/C++ and how they are stored in memory. Discuss the difference between a one-dimensional array and a two-dimensional array.	2	C1	3	06
Q. 02	(b) Write a program in C/C++ that asks the user to enter 10 integer numbers in the array and find the sum of all the numbers and print the result.	2	C2	3	06
Q. 03	(a) Explain the concept of functions in C/C++. What is a parameter, and how is it used in a function? Discuss the difference between call by value and call by reference.	2	C1	2	06
Q. 03	(b) Write a program in C/C++ that uses a function to calculate the sum of two numbers entered by the user. The program should ask the user to enter two integers, and then call the sum function to compute and display the sum of the two numbers.	2	C2	2	06
Q. 04	(a) Describe the use of structures in C/C++ programming. Write a program in C/C++ that uses a structure to store and display information about a book. The structure should include the book's name, price, and pages. The program should ask the user to enter the book's name, price, and pages, and then display the entered information.	3	C1	3	06
Q. 04	(b) Write a C/C++ program that asks the user to enter a sentence and performs the following tasks: (i) Count the total number of characters in the sentence (ii) Convert the sentence to uppercase. (iii) Convert the sentence to lowercase.	3	C2	3	06
Q. 05	(a) Explain the concept of pointers in C/C++. How is it used in a program? Discuss the difference between the value of a pointer and the address it points to.	3	C1	3	06
Q. 05	(b) Write a program in C/C++ that uses a pointer to swap two strings in a string array. The program should declare an array of strings with the values "Fahad", "Ali", "Fatima", and "Kashif" and display the updated values of the array.	3	C2	3	06



NOTE: ATTEMPT ALL QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS.

Q.No		CLO	Taxonomy Level	PLOs	Marks
01(a)	What is Calculus; State the geometrical meaning of the Derivative?	3	C3	2	04
01(b)	If $y = \sqrt{\sin x} + \sqrt{\sin x} + \sqrt{\sin x} + \dots + \infty$ then prove that, $(2y-1)dy = \cos x dx$	2	C2	2	04
01(c)	Determine the extremum values for the function $f(x) = x^3 - 3x^2 + 1$ by first derivative test.	2	C2		04
02(a)	State Leibnitz theorem and use it to find the nth derivative of $f(x) = x^2 e^x$	2	C2	2	06
02(b)	A 20-meter-long ladder is placed against a wall. If the bottom of the ladder slips at the rate of 2 m/sec, how fast is the top of the ladder sliding down the wall when the bottom of the ladder is 12 m from the wall?	2	C2	2	06
03(a)	Differentiate between Maclaurin's & Taylor's series, hence evaluate by Hospital's rule (i) $\lim_{x \rightarrow 1} \left( \frac{x}{x-1} - \frac{1}{\ln x} \right)$ (ii) $\lim_{x \rightarrow 0} \left( \frac{e^x - 1}{\cos x - 1} \right)$	2	C2	2	06
03(b)	State Rolle's theorem and verify Mean value theorem for the function $f(x) = x^3 - 6x^2 + 11x - 6$ on $[0, 4]$ .	2	C2	2	06
04(a)	Define homogeneous function and also state Euler's theorem. If $u(x, y) = \arcsin \left( \frac{x^2 + y^2}{x + y} \right)$ , prove that $x \frac{\partial u}{\partial x} + y \frac{\partial u}{\partial y} = \tan u$	2	C2	2	06
04(b)	Consider a rectangle having length and width 4 and 3 meters, hence find the Area of given polygon by using the technique of integration i.e. Find $\int_1^4 \text{Rectangle}$	2	C2	2	06
05(a)	A fluid motion is given by $\vec{v} = (y \sin z - \sin x)\mathbf{i} + (x \sin z + 2yz)\mathbf{j} + (x \cos z + y^2)\mathbf{k}$ is the motion irrotational?	3	C3	2	06
05(b)	For what value of constant $\lambda$ , the vector function is defined as $3x^2 yz\mathbf{i} + x^3 y^2\mathbf{j} - \lambda xyz^3\mathbf{k}$ is solenoid at (1, 2, 3)	2	C2	2	06

The End





**QUAID-E-AWAM UNIVERSITY OF ENGINEERING, SCIENCE & TECHNOLOGY, NAWABSHAH**  
**FINAL SEMESTER REGULAR EXAMINATION OF FIRST SEMESTER - FIRST YEAR 2023 OF 22 BATCH, B.E (SW)**

**SUBJECT: INTRODUCTION TO ICT**

**Dated: 05.05.2023**

**Maximum Marks: 60**

**Time Allowed: 3 Hours.**

**NOTE: ATTEMPT ALL QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS.**

Q. No.	Questions	Marks	CLO	Level	PLO
Q. 1	a) Define the following Hard Drive types: 1. PATA 2. SATA 3. SCSI 4. SSD	(8)	1	1	1
	b) What is difference between Serial and Parallel Port? Name the devices that connect through Serial and Parallel Ports.	(4)	1	1	1
Q. 2	a) Explain the differences in Static RAM and Dynamic RAM.	(6)	2	1	1
	b) For what purpose Twisted pair cable is used? What is difference between STP and UTP cable?	(6)	2	2	1
Q. 3	a) Why we prefer LED display over LCD display?	(6)	2	2	2
	b) Discuss the operation of Laser and Inkjet printers.	(6)	2	2	2
Q. 4	Define Security threat. Discuss the following: 1. Threats to User 2. Threats to Data	(12)	3	2	2
Q. 5	Answer the following in short: 1. What is Firmware? 2. What is a Virtual machine? 3. Convert $(110111)_2$ into Decimal. 4. What is main difference between CD and Blu-ray disk? 5. Name five devices commonly used for ICT communication. 6. Write three names of single user multitasking operating systems.	(12)	3	2	2

**--- All The Best ---**

Q. No.	QUESTION	Q10	Terminology Level	P10	Marks
Q. 01	What is an Essay? Define a good essay characteristics of essay writing.	2	C3		10
Q. 02	<p>What is précis? Make a précis of following passage and suggest a suitable title:</p> <p>Recently, the National Health Authority (NHA) and the All India Transporters Welfare Association (AITWA) have announced a partnership through a memorandum of understanding (MoU). This partnership aims to provide healthcare services to around 10 million truck drivers under the Ayushman Bharat (AB)-Pradhan Mantri Jan Arogya Yojana (PM-JAY). The NHA and the AITWA will work together in order to identify truck drivers and employees of transport companies who are eligible for the scheme. The Common Service Centres (CSCs), which comes under the Ministry of Electronics and Information Technology, will work toward facilitating the verification of drivers using the NHA's Beneficiary Identification System. This collaboration will help thousands of eligible families access in-patient care for serious illnesses at a nationwide network of 19,002 government and private hospitals empanelled under the PM-JAY. After the verification, the eligible drivers can get their AB PM-JAY e-cards at the nearest AITWA Highway Hero Centres. In the first phase, a pilot project will be conducted at key locations under the AITWA and the AB PM-JAY. This will be expanded to other towns across the country. Eligible drivers and employees of different transport companies will be able to avail themselves of the benefits after getting the PM-JAY cards. NHA officials will work closely with the teams of the AITWA and the CSCs to conduct the drive to identify beneficiaries</p>	2	C3		10
Q. 03	<p>Read the following passage carefully and answer the questions that follow.</p> <p>"I Have a Dream" is a public speech delivered by American civil rights activist Martin Luther King Jr. during the March on Washington for Jobs and Freedom on August 28, 1963, in which he calls for an end to racism in the United States and called for civil and economic rights. Delivered to over 250,000 civil rights supporters from the steps of the Lincoln Memorial in Washington, D.C., the speech was a defining moment of the civil rights movement.</p> <p>Beginning with a reference to the Emancipation Proclamation, which freed millions of slaves in 1863, King observes that: "one hundred years later, the Negro still is not free". Toward the end of the speech, King departed from his prepared text for a partly improvised peroration on the theme "I have a dream", prompted by Mahalia Jackson's cry: "Tell them about the dream, Martin!" In this part of the speech, which most excited the listeners and has now become its most famous, King described his dreams of freedom and equality arising from a land of slavery and hatred. Jon Meacham writes that, "With a single phrase, Martin Luther King Jr. joined Jefferson and Lincoln in the ranks of men who've shaped modern America". The speech was ranked the top American speech of the 20th century in a 1999 poll of scholars of public address.</p>	2	C1		10



Q1. What issues does Martin Luther King's speech address?

1. Continuation of racism
2. End to racism and civil and economic rights
3. Civil rights
4. Civil War

Q2. What pushes King to speak: "I have a dream"?

1. He reads out the Emancipation Proclamation
2. He is prompted by Mahalia Jackson
3. he is overwhelmed by the crowd
4. Lincoln had asked him to give the speech

Q3. From the last paragraph, give one word for "to leave"

1. Departed
2. Proclamation
3. Improvised
4. Address

Q4. What is the name of Martin Luther King's famed speech?

1. The Emancipation Proclamation
2. An Improvisation
3. A Peroration
4. I Have a Dream

Q5. In front of who does King speak?

1. The civil rights supporters
2. His friends
3. Lincoln
4. The Negroes

Good Luck