

Dated: 12.06.2023

Maximum Marks: 30

Time Allowed: 02 Hours.

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

Q. No.	QUESTION	CLOs	Taxonomy Level	PLOs	Marks
Q.01 (a)	What is the difference between a while loop and a do-while loop in C/C++? Draw their flowcharts and discuss the suitable example scenario where you would choose to use each type of loop?	2	C1	1	05
Q.01 (b)	Write a program in C/C++ that asks user to enter any character to guess the correct letter. The program should keep prompting for input until the correct letter is entered by the user.	2	C2	1	05
Q.02 (a)	What is an array in C/C++ and how is it used to store multiple elements of the same data type? Write a C/C++ program to find the largest element in the given array. Int myarray[10] = {6, 4, 2, 3, 5, 10, 12, 9, 14, 55};	2	C1,C2	1	05
Q.02 (b)	Explain the concept of user-defined functions in C/C++. How are they different from pre-defined functions? Provide an example of a user-defined function in C/C++.	3	C1	1	05
Q.03 (a)	How is string processing implemented in C? Write an example program in C/C++ that demonstrates the usage of string functions such as strlen(), strlwr(), and strcat()?	3	C2	1	05
Q.03 (b)	Discuss the importance of structures in C/C++. Write a program that uses a structure to store and display information about a book (name, price and pages).	3	C1	1	05



QUAID-E-AWAM UNIVERSITY OF ENGINEERING, SCIENCE & TECHNOLOGY, NAWABSHAH
FINAL SEMESTER REGULAR EXAMINATION OF FIRST SEMESTER - SECOND YEAR, 2020 OF 21-BATCH B.E (EL)
SUBJECT ELECTRICAL NETWORK ANALYSIS

Dated: 29.05.2023

Maximum Marks: 60

Time Allowed: 3 Hours

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

Q No	QUESTION	CLO	Taxonomy Level	PLO	Mark
Q 01	(a) Describe the two-wattmeter method for measurement of the three-phase power with help of phasor diagram.	1	C1	2	06
	(b) Three identical impedances each $5.45 \angle 0^\circ \Omega$ are in star connections and other three identical impedances of $12 \angle 30^\circ \Omega$ each are in delta connection. Both these sets of impedances are connected across 3-phase, 3-wire, 400V system. Find line current and total power.	1	C1	2	06
Q 02	(a) Discuss the two-port networks are connected in cascade, what is the relationship between their individual ABCD parameters and the overall ABCD parameters of the cascaded network? How do the characteristics and behavior of the cascaded network differ from those of the individual networks?	2	C2	2	06
	(b) Describe the transient in electrical circuit. Drive the expression for resultant R & L circuit when connected in series (DC).	2	C2	2	06
Q 03	(a) What are the specific types and characteristics of single energy transient and double energy transient?	2	C3	4	06
	(b) A 1.00 H choke has a resistance of 50Ω . The choke is supplied with an AC voltage $e = 141 \sin 314t$. Find the expression for the transient component of current flowing through the choke after voltage is suddenly switched on?	2	C3	4	06
Q 04	(a) Explain two port network are connected in series the overall z-parameters of the two port networks are equal to sum of individual parameters.	2	C2	2	06
	(b) A bridge T-network is shown in figure. Write the mesh equation and state how open circuit impedance and short circuit admittances can be determining from these equations.	2	C2	2	06
Q 05	(a) A network shown in figure, shows a resistive T-network and T network and resistive π network in parallel. Find overall Y-parameters of the combination.	2	C2	2	06
	(b) Explain the concept of parallel-parallel interconnections in a two-port network? How does it affect the overall behavior and characteristics of the network?	2	C2	2	06

Good Luck



SUBJECT: DIFFERENTIAL EQUATIONS & FOURIER SERIES

Dated: 01.06.2023

Maximum Marks: 60

Time Allowed: 3 Hrs

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

Q. No.	QUESTION	CLO	Taxonomy Level	PLO	Marks
Q. 01	Discuss an exact and non-exact differential equation then solve any one of the following differential equations. I. $(2x^2+6xy-y^2)dx+(3x^2-2xy+y^2)dy=0$, II. $(x^3y^3+x^2y^2+xy+1)ydx+(x^3y^3-x^2y^2-xy+1)dy=0$.	2	C2	2	12
Q. 02	Find the solution of higher order Homogeneous differential equations. I. $(D^3-3D^2+4)y=0$, II. $(D^4+8D^2+16)y=0$.	2	C2	2	12
Q. 03	Find the solution of higher order Non-Homogeneous differential equations I. $(D^2+4)y=x^2+\cos 2x$, II. $(D^2+1)y=\operatorname{cosec} x$.	2	C2	2	12
Q. 04	Define Cauchy differential equation and find the solution any one of the following differential equations I. $x^2 D^2 y - xDy - 3y = x^3 \log x$, II. $(2x-1)^2 D^2 y - (2x-1)Dy + 8y = 8x$.	3	C3	3	12
Q. 05	Discuss Fourier Series of a function $f(x)$, and find the Fourier coefficients then find the Fourier Series of $f(x)=1+x$, $-\pi < x < \pi$.	4	C4	4	12

Good Luck

SUBJECT: DIGITAL LOGIC DESIGN

Dated: 08.06.2023

Maximum Marks: 30

Time Allowed: 02 Hours

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

Q. No.	QUESTION	CLO	Taxonomy Level	PLO	Marks
Q. 01	(a) Discuss briefly importance of Flip-Flops and their applications in memory devices we use in our daily life.	2	C2	1	05
	(b) Design a simple J-K Flip-Flop sequential circuit using appropriate circuit components and discuss its working process using its truth table.	6	C6	3	05
Q. 02	(a) Discuss in short about digital counters and registers commonly used for ALU of each calculating digital device.	6	C6	3	05
	(b) Design a Mode-10 (Decade) counter using four Flip-Flops (4-Bit counter) also discuss briefly its counting cycle from 0 to 9.	6	C6	3	05
Q. 03	Discuss briefly importance of ADC and DAC converters commonly used for data processing in any communication system. Also design a simple ladder type D/A converter and discuss its truth table.	2, 6	C2, C6	1, 6	10

Good Luck



SUBJECT: COMPUTER PROGRAMMING

Dated: 13.03.2023

Maximum Marks: 10

Time Allowed: 45 Minutes

NOTE: ATTEMPT ANY TWO (02) QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS.

Q. No.	QUESTION	CLOs	Taxonomy Level	POs	Ma
Q. 01	Explain in detail all of the following: (a) Comments in C/C++ (b) Pre-Processor Directive (c) Format Specifiers (d) Escape Sequences (e) Variable and Data Types	1	2	1	0
Q. 02 (a)	Discuss in detail any two of the following operators in C/C++: (a) Arithmetic Operator (b) Relational Operator (c) Logical Operator (d) Arithmetic Assignment Operator	1	2	1	0
Q. 02 (b)	Write a calculator program in C/C++ that ask you to enter two numbers and an operator to perform simple arithmetic operations (+, -, *, and /).	1	3	1	1
Q. 03 (a)	Justify why loops are used in computer programming? Compare pre-test loop with post-test loop also draw flowchart for the pre-test and post-test loop.	1	3	1	1
Q. 03 (b)	Write a C/C++ program that asks you to enter any number and determine whether the given number is prime or not.	1	3	1	1

Good Luck



QUAID-E-AWAM UNIVERSITY OF ENGINEERING, SCIENCE & TECHNOLOGY, NAWABSHAH
1ST SEMESTER EXAMINATION OF FIRST SEMESTER - SECOND YEAR 1ST SEMESTER 2023 21-BATCH BE(EL/ACE)

SUBJECT: DIFFERENTIAL EQUATIONS AND FOURIER SERIES

Dated: 08.03.2023

Maximum Marks: 20

Time Allowed: 01 Hour

NOTE: ATTEMPT ANY TWO (02) QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS.

Q. No.	QUESTION	CLOs	Taxonomy Level	PLOs	Marks
Q.01	What is solution of a differential equation (d.e), discuss in your own words type of solution, then $y' = \tan^2(y-x)$.	1	C1	1	10
Q.02	Define formation of a differential equation, then obtain a d.e of $y = Ae^{x^2} - Be^x$.	2	C2	2	10
Q.03	Solve the any two of the following d.e by appropriate methods: (I) $y' = \frac{(x^2 - xy)}{(y^2 + xy)}$ (II) $y' = \frac{(x - y - 1)}{(x + y + 1)}$ (III) $y' = \frac{(x + y - 1)}{(x + y + 1)}$	3	C3	3	10

Good Luck

SUBJECT: ELECTRICAL NETWORK ANALYSIS

Dated: 06.03.2023

Maximum Marks: 20

Time Allowed: 01 Hour

NOTE: ATTEMPT ANY TWO (02) QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS.

Q. No.	Question	CLO	Taxonomy Level	PLD	Mar
Q. 01 <i>same</i>	(a) Discuss the relationship of phase and line values in three phase star connection. Also explain the advantages of three phase system over single phase.	1	C2	3	05
<i>same</i>	(b) Three identical impedances each $5\angle 45^\circ \Omega$ are in star connections and other three identical impedances of $12\angle 30^\circ \Omega$ each are in delta connection. Both these sets of impedances are connected across 3-phase, 3-wire, 400V system. Find line current and total power.	1	C2	3	05
Q. 02 <i>same</i>	(a) Derive an expression for Q factor and resonant frequency of RLC (series) circuit. Also draw and explain graphical representation of resonance.	1	C1	3	05
<i>same</i> <i>change voltage</i>	(b) A coil having resistance of 10Ω and inductance of 120mH is connected in series with $60 \mu\text{F}$ capacitor across 220V variable frequency supply. Determine the frequency at which current will be maximum. Also calculate the Q factor, Voltage magnification and voltage across a coil and capacitor at this frequency.	1	C1	3	05
Q. 03 <i>same</i>	(a) A choking Coil of 10Ω resistance and 0.1H inductance is connected in series with capacitor of $200\mu\text{f}$ capacitance. Calculate (a) the current (b) the Coil voltage and (c) capacitor voltage. The supply voltage is 230V at 50Hz . At what frequency will the circuit resonant? Calculate the voltages at resonant frequency across the coil and capacitor. The supply voltage is 230V of variable frequency.	1	C1	3	05
<i>change</i>	(b) What is the role of the resistor, inductor, and capacitor in an RLC series circuit? How does an RLC series circuit behave when an AC voltage is applied?	1	C1	3	05

The End

21FL-40

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

MD-SEMESTER EXAMINATION OF FIRST SEMESTER - SECOND YEAR (2ND SEMESTER, 2022-21 BATCH, BE (EL/ACE)

SUBJECT THEORY OF ELECTROMAGNETIC FIELD

Dated: 09.03.2023

Maximum Marks: 20

Time Allowed: 01 Hour.

NOTE: ATTEMPT ANY TWO (02) QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS.

Q. No	Question	CLO	Taxonomy Level	PLD	Marks
Q. 01	(a) Define work done in moving a point charge in an electric field.	1	C4	2	05
	(b) Describe potential difference due to a point, charge distribution.	1	C4	2	05
Q. 02	(a) Illustrate potential gradient with suitable diagram.	1	C3	1	05
	(b) Define charge, establish the relation between E and V.	1	C3	1	05
Q. 03	(a) Describe force. Derive an equation of force on differential current element.	1	C4	2	05
	(b) Define permeability.	1	C3	1	05

The End