

**International Islamic University Chittagong**  
**Centre for General Education (CGED)**  
**Semester End Examination, Autumn-2023**

**Course Code:** UREM-1101  
**Course Title:** Text of Ethics and Morality

**Marks: 50**

**Duration: 2.50 hours**

**Answer the following questions**

SL	Questions	Marks	CLOs	Blooms taxonomy domain
01	Answer the following questions: a. Write some circumstances in which Haram things are Halal. b. Who are inheritors of Jannatul Ferdus? c. Write the bad impacts of drug and gambling.	2 4 4	CLO-1 CLO-2 & CLO-3	Remember & Understand
02	‘Trade is like interest’ comparing between trade and interest discuss the bad impacts of interest in poor men’s life.	10	CLO-2	Understand and Evaluate
03	How can the sermon of Luqman change a disordered family? Explain how the children will express their gratitude to their parents? Or Explain the role of ethical directions of marriage.	10	CLO-2 & CLO-3	Apply & Create
04	How can human being get rid of great loss? Elucidate the instructions according to Suratul Asr.	10	CLO-1	Analyze
05	a. Explain the bad characteristics which are mentioned in Suratul Forkan. b. Write the role of ethical instructions regarding divorce in Islam.	2x5	CLO-2	Create & Understand

# International Islamic University Chittagong

Centre for General Education (CGED)

Semester End Examination

Semester: Autumn 2023

Course Code: UREL-1106

Course Title: Advanced English

Time: 2 Hours & 30 Minutes

Marks: 50

## 1. Read the passage carefully and answer the questions given below.

Thousands of Palestinians are fleeing to southern Gaza seeking refuge after Israel warned them to evacuate in retaliation for the deadliest attack in Israel's history. Israeli ground forces made "localised" raids into Gaza in the past 24 hours "to cleanse the area of terrorists and weaponry" and try to find "missing persons", the army said. At least 1,900 Gazans, most of them civilians and including more than 600 children, have been killed in missile strikes on the densely populated enclave, the health ministry said. "Where to go?" asked Umm Hossam, 29, who was among the thousands fleeing. "How long will the strikes and death last? We have no homes left, every area of Gaza is under threat," said the 29-year-old. Her face streaked with tears. Hospitals are struggling to cope with the dead and wounded and the health system was "at a breaking point", the World Health Organization said.

Tensions have risen across the Middle East and beyond, with angry protests in support of the Palestinians, while Israel faces the threat of a separate confrontation with Hezbollah in Lebanon. In Gaza, the Israeli military whose troops are massing at the border, had said some 1.1 million people in the north of the enclave needed to evacuate to the south "within the next 24 hours". "Moving more than one million people across a densely populated war zone to a place with no food, water, or accommodation, when the entire territory of Gaza is under siege, is extremely dangerous – and in some cases, simply not possible," UN chief Antonio Guterres said on a Twitter.

Hamas has said Palestinians rejected the evacuation request, yet thousands of Gazans were on the move in search of safety, carrying plastic bags of belongings, suitcases on their shoulders and children in their arms. In Jordan, after a meeting with Blinken, King Abdullah II called for "humanitarian corridors" to be opened urgently. Egypt, which runs the Rafah crossing to the south of Gaza, faces a dilemma of accepting refugees with the possibility that Israel may never let them return.

Palestinian president Mahmud Abbas said it will be tantamount to a second Nakba or "catastrophe", referring to the 760,000 Palestinians who fled or were expelled from their homes during the 1948 war that accompanied Israel's creation. Russian President Vladimir Putin warned that Israel risked waging an unacceptable siege in Gaza comparable to the Nazi blockade of Leningrad during World War II.

**Answer the questions as directed**

$12 \times 1 = 12$

- a) The purpose behind raids by Israeli forces is to facilitate the Gazan. Write if it is right or wrong?
- b) To leave a place especially because of danger- find out the synonym from the passage.

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- c) Mention the meaning of the word "**tantamount**".
- d) **Confusing situation to choose between the two options-** find out the synonym from the passage.
- e) Poor people are unable now to \_\_\_\_ the price hike of daily commodities. **Fill in the gap with a word from the passage.**
- f) What has been mentioned as second Nakba in the passage? **Answer in a sentence.**
- g) Explain the expression "**streaked with tears**".
- h) Make a sentence of your own with the phrase "**under siege**".
- i) Death of their father was a \_\_\_\_\_ to them. **Fill in the gap with a word from the passage.**
- j) The chairman \_\_\_\_\_ by his colleagues are supervising the works. **Fill in the gap with a word from the passage.**
- k) Explain the expression "**Humanitarian corridors**" in one sentence.
- l) What bars Egypt to accept the refugees?

## 2. Read the passage carefully and answer the questions given below.

The history of man is the history of war. Throughout the ages, man has been concerned with the problem of preventing war, if all the people in the world loved peace, no organisation to ensure peace would be necessary. If, in the past, nations had not wanted to go to war with one another, no association of nations would have been necessary to outlaw war. But history has proved to mankind that the nations of the world have not been willing to observe these conditions.

The League of Nations, the first association of nations established to work for peace, was founded in 1919. For four years from 1914, war had raged throughout Europe. The fighting in this war had been more destructive than anything that mankind had ever experienced. The League of Nations aimed at outlawing war and settling international disputes by peaceful means—by discussion instead of by force. For twenty-five years the League of Nations struggled to survive. With the outbreak of the Second World War, in 1939, it ceased to function. If it had been able to keep its promise of enforcing disarmament, there would not have been another war. Britain and France had disarmed, but other nations had not followed their example. Some nations had defied the League of Nations and gone to war with their neighbours.

These events led to the Second World War in 1939. This war raged over the continents and seas of the world from 1939 to 1945. Millions of soldiers, sailors and airmen were killed. Thousands of innocent civilians were the victims of deadly weapons. If there had been no war, all this suffering could have been avoided. When the world ended, the people of all the nations began praying for a secure, peaceful world without any fear of war. This desire for world peace led to the founding of the United Nations Organisation (UNO).

On October 24 1945, representatives of fifty-one nations met to form an association called the United Nations Organisation. The two main aims of UNO are the maintenance of international peace and security and the promotion of human welfare throughout the world. Since then the organisation has survived with difficulty. It has faced a series of international disputes that could have involved the world in a nuclear war. The successful handling of these disputes has proved that UNO can help in the maintenance of world peace. If UNO had failed to settle them, the

world might by now have been involved in a global war and completely destroyed. If it can continue to settle disputes peacefully, the fear of a world-wide disaster will disappear. If it fails, there may be no further hope for mankind.

**A. Write these sentences again to show the meaning of the words in italics, making any necessary changes:  $1 \times 3 = 3$**

- a. For four years from 1914, war had *raged throughout* Europe.
- b. It has faced *a series of international disputes* that could have involved the world in a nuclear war.
- c. If the UNO fails, there may be *no further hope* for mankind.

**B. Find words in the passage with meanings similar to:**

$$0.5 \times 4 = 2$$

to keep from happening, to make sure of, to break out with great violence, to make unlawful

**C. Find words in the passage to complete these sentences:**

$$0.5 \times 4 = 2$$

- a) The objective of the League of Nations was to \_\_\_\_\_ throughout the world.
- b) The League of Nations could not survive because it was unable to \_\_\_\_\_ disputes successfully.
- c) \_\_\_\_\_ the ages human beings have been facing war.
- d) Since the inception UNO has faced international \_\_\_\_\_.

**D. Decide whether the sentences are right or wrong.**

$$0.5 \times 4 = 2$$

- a) There was no such organization as UNO before.
- b) Along with other countries Britain and France disarmed.
- c) The United Nations Organisation was established in 1919.
- d) The League of Nations struggled to survive for a quarter century.

**E. Answer these questions in ONE complete sentence.**

$$1 \times 4 = 4$$

- a) Why did the World War II break out?
- b) How can mankind overcome the fear of world-wide disaster?
- c) When was the UNO established?
- d) What are the two main objectives of the UNO?

**3. Answer the following questions as directed:**

$$1 \times 10 = 10$$

- a) Platinum is as heavy as gold. Rewrite the sentence using comparative degree of adjective.
- b) Had you renewed your license in time, you wouldn't face such danger. (Correct the sentence)
- c) \_\_\_\_\_ you are serious about your study, you will cut a sorry figure \_\_\_\_\_ the exam. (Fill the blanks with suitable preposition/conjunction)
- (d) The feast was over and all the guests went away. (Transfer it into a simple sentence)
- e) It does not worth to say lies about it. (Correct the sentence)

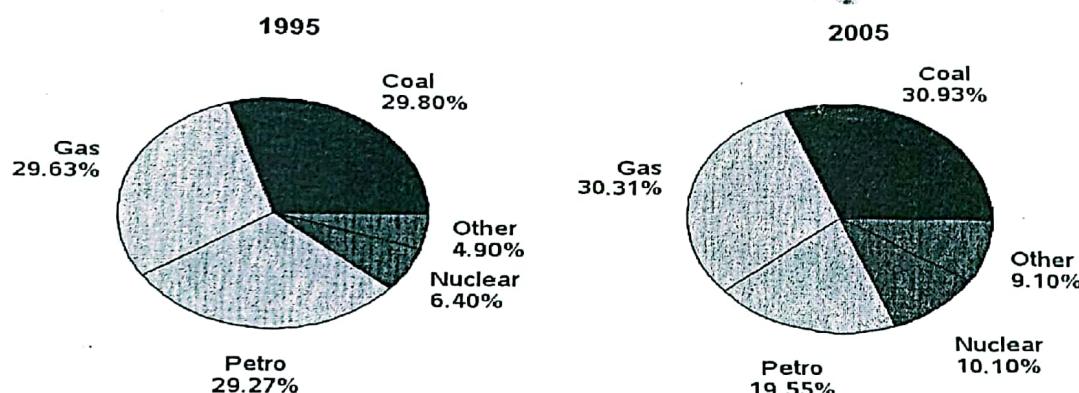
- f) He is \_\_\_\_\_ a good worker \_\_\_\_\_ a leader. (Complete the sentence with a suitable conjunction).
- g) Our hearts bleed if anyone hurts us. (Transform the sentence into an interrogative sentence).
- h) Al Mahmud is one of the most famous poets in Bangla. (Transform it into positive.)
- i) Picasso painted his wife a beautiful portrait. (Correct the sentence if necessary)
- j) Had we known your address, we \_\_\_\_\_(write) you a letter.(Complete the conditional sentence)

**4. Answer the following questions. (Any TWO)**

**5×2=10**

- a) Write an argumentative essay on the following topic: Insufficient car parking places cause traffic jam in the streets of Dhaka.
- b) Suppose you are the secretary of cultural club of the department. Now write a letter of invitation to a renowned cultural personality to attend the annual cultural festival you are going to arrange soon.
- c) Describe the pie charts below to show the comparison of different energy productions of France in two years.

**Comparison of Energy Production**



**5. Speaking / Listening test will have been taken by the respective ahead of the final exam.**

**5**

**International Islamic University Chittagong**  
**Morality Development Program (MDP)**  
**Semester End Examination**  
**Autumn -2023**  
**Course Code: MDP-1101**  
**1<sup>st</sup> Semester**  
**Tajweedul Qur'aan -I**

**Marks: 50****Duration: 2:30 hours****Answer the following questions:** **$5 \times 10 = 50$** 

1. Write the meaning of following Surahs. (Any tow) 10

- a) Suratul Nas'r
- b) Suratut Kaferoon
- c) Suratul kawsar

2. Answer the following Questions: 10

- a) Write the sing of Madd
- b) Write the Makhraj of ق - ك
- c) Define Tahara and Najasat
- d) write the Far'z of Wadu

**Or**

Identify the types of madd in the following words and explain their signs.

جَاءَ - الشِّتَاءُ - الصَّيْفُ - الْيَمِينُ - مَا أَغْنَى

3. Define the Makhraj Al-Haruf with explain. 10

4. What are the types of Najasat? Discuss how to get rid of Najaasat.

**Or**

When gusal become obligatory? write the causes of Gosal. 10

5. Discuss some Sunan Du'a will be read after Far'z Salaah. 10

**Bismillahir Rahmanir Rahim**  
 International Islamic University Chittagong  
**Department of Computer Science & Engineering**  
*B. Sc. in CSE Semester Final Examination, Autumn-2023*  
**Course Code: PHY-1101 Course Title: Physics-I**  
 Total marks: 50 Time: 2 hours 30 minutes

[Answer **all** the questions. Figures in the right hand margin indicate full marks.  
Separate answer script must be used for Group A and Group B]

**Group-A**

1. a) What is Doppler effect? Find the apparent frequency      CLO1 U 7  
     i) When the source moves towards the stationary observer.  
     ii) When the source moves away from the stationary observer.
- Or,  
 What is standing wave? With a neat diagram, build up the expression of standing wave and write down the condition of nodes and antinodes. .
1. b) The driver of a car moving towards a factory with a velocity of 30 m/sec sounds the horn with a frequency of 240 Hz. Find the apparent frequency of sound heard by the watchman of the factory. [Velocity of sound 350 m/s].      CLO2 E 3
2. a) Show the graphical representations of SHM.      CLO1 R 2  
 2. b) "The total energy of the simple harmonic motion is proportional to the square of the amplitude" Justify the statement.      CLO1 U 5  
 2. c) The equation of a particle executing simple harmonic motion is,  $y = 10 \sin(\omega t + \delta)$ . If time period is 30 sec, find out the angular frequency.      CLO2 E 3

Or,  
 A simple harmonic motion is represented by

$$y = 10 \sin\left(10t - \frac{\pi}{6}\right)$$

Where  $y$  is measured in meters,  $t$  is seconds and the phase angle in radians. Calculate (i) the frequency (ii) the time period (iii) the maximum displacement.

**Group-B**

3. a) State second law of thermodynamics?      CLO1 R.. 2  
 3. b) Explain the Carnot's cycle in different state.      CLO1 U 5  
 3. c) Find the efficiency of a Carnot's engine working between  $137^{\circ}\text{C}$  and  $37^{\circ}\text{C}$ .      CLO2 E 3
4. a) What is superposition of light? Discuss interference of light analytically and obtain the conditions of maximum and minimum intensities.      CLO1 U 7
- Or,  
 Define diffraction of light? Derive an expression for the intensity pattern due to single slit diffraction.
4. b) Show that phase difference =  $\frac{2\pi}{\lambda} \times \text{path difference}$ .      CLO2 U 3
5. a) Distinction between Fresnel and Fraunhofer diffraction.      CLO1 R 2  
 5. b) Define polarization of light. "The refracted and the reflected (polarized) rays are perpendicular to each other" Justify the statement      CLO1 U 5  
 5. c) The refractive index of crown glass is 1.52. Find the angle of polarization.      CLO2 E 3
- Or,  
 An inventor claims to have developed an engine working between 600 K and 300 K capable of having an efficiency of 52%. Comment on his claim.

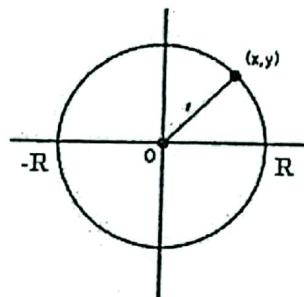
[Answer **all** the questions. Figures in the right hand margin indicate full marks.  
Separate answer script must be used for Group A and Group B]

**Group - A**

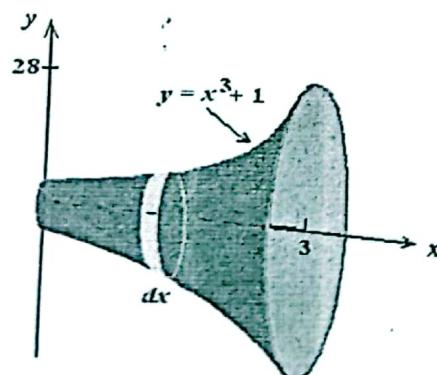
		Marks	CLO	DL
			CLO1	U
1.	a) Define partial derivatives. If $u = \sqrt{x^2 + y^2 + z^2}$ then prove that	5	CLO1	
	$u_{xx} + u_{yy} + u_{zz} = \frac{2}{u}$			
Or)	Define Homogeneous function. If $u = \sin^{-1} \frac{x+y}{\sqrt{x+y}}$ then using the Euler's theorem on homogeneous function show that,			
	$x \frac{\partial u}{\partial x} + y \frac{\partial u}{\partial y} = \frac{\tan u}{2}$			
b)	Find the local maxima and local minima of the function: $f(x) = 2x^3 - 3x^2 + 6$ with graphical presentation.	5	CLO1	U
2.	a) Evaluate the Integral, $\int \frac{2x+3}{3x^2-x+1} dx$	5	CLO2	U
Or)	Evaluate the Integral, $\int \frac{dx}{(2x+3)\sqrt{x^2+3x+2}}$			
b)	(i) Evaluate the Integral, $\int x \log x dx$	3	CLO2	U
	(ii) Evaluate the Integral, $\int e^x \left\{ \frac{1}{2} \cosec^2 \frac{x}{2} - \cot \frac{x}{2} \right\} dx$	2	CLO2	U

**Group - B**

3. a) Evaluate the Integral,  $\int_0^1 x^2 dx$  by geometrically. 5 CLO2 U
- b) If  $I_n = \int_0^{\pi/4} \tan^n \theta d\theta$  and  $n > 1$  then using the reduction formula prove that,  $n(I_{n-1} + I_{n+1}) = 1$  5 CLO2 U
- Or) Show that  $\int_0^\pi \frac{x}{1+\sin x} dx = \pi$
4. a) Evaluate the triple integral,  $\int_0^1 \int_0^{1-x} \int_0^{1-y^2} z dz dy dx$  5 CLO2 U
- b) Define Gamma and Beta function. Using the definition prove that,  $\beta(m, n) = 2 \int_0^{\pi/2} \sin^{2m-1}\theta \cos^{2n-1}\theta d\theta$  5 CLO2 U
- Or) Show that  $\int_0^{\pi/2} \cos^8 x \sin^6 x dx = \frac{5\pi}{4096}$
5. a) Find the length of circumference of a circle  $x^2 + y^2 = R^2$  of radius  $R$ . 6 CLO3 Ap



- b) Find the volume of the solid of revolution generated by the graph  $y = x^3 + 1$  between  $x = 0$  to  $x = 3$  about the x-axis. 4 CLO3 Ap



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 International Islamic University Chittagong  
 Department of Computer Science & Engineering  
 B. Sc. in CSE Semester Final Examination, Autumn-2023  
**Course Code: EEE-1121 Course Title: Basic Electrical Engineering**  
 Total marks: 50 Time: 2 hours 30 minutes

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[Answer all the questions. Figures in the right hand margin indicate full marks.  
Separate answer script must be used for Group A and Group B]

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**Group-A**

1. a) Compare the RMS value and the average value of a signal. Find out the RMS CLO1 Ap 05 and average value of the given signal shown in Fig-1(a).

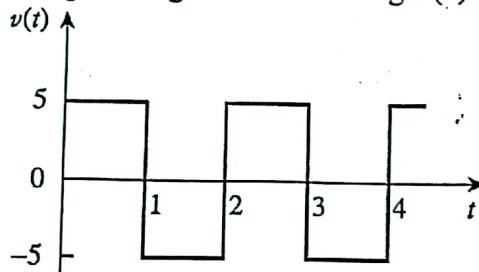


Fig-1(a)

OR

Consider a sine wave signal with an amplitude of 5 volts, varying from 0V to 5V over a cycle. Calculate the average and RMS values of this sine wave signal.

1. b) Dissect the diagrams of the signals  $V_1 = 4 \sin(\omega t - 30^\circ)$  and  $V_2 = 10 \cos(\omega t + 20^\circ)$  and find out the leading signal. CLO3 An 05
2. a) Given a load that initially operates at 4 kW with a lagging power factor of 0.8 when connected to a 120-V (rms), 60-Hz power line, analyze how much capacitance is needed to increase the power factor to 0.95. CLO3 An 05
2. b) In the circuit of Fig-2(b), calculate the average power absorbed by the resistor and capacitor. Find the average power supplied by the voltage source. CLO3 Ap 05

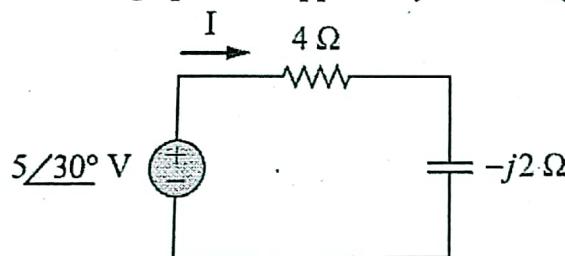


Fig-2(b)

OR

- b) For a load,  $V_{rms} = 110\angle 85^\circ$ ,  $I_{rms} = 3\angle 15^\circ$  Determine:
- (i) the complex and apparent powers
  - (ii) the real and reactive powers, and
  - (iii) the power factor.

Group-B

- a) Briefly explain leading and lagging quantities of RC and RL circuits. Draw phasor diagrams of inductive and capacitive circuits. CLO1 An 05

**OR**

Use Phasor to find:

- i)  $3 \cos(20t - 10^\circ) - 5 \cos(20t - 30^\circ)$   
ii)  $40 \sin 50t + 30 \cos(50t - 45^\circ)$

3. b) You are given the voltage and current equation for a black box shown in Fig. 3(b). Find whether the element involved is a capacitor, an inductor or a resistor also determine the Value of C, L, or R.  
i)  $v = 300 \sin(155t + 30^\circ)$   
ii)  $i = 40 \sin(155t + 120^\circ)$

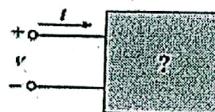


Fig. 3(b)

4. a) What is Cut-off frequency of a waveform in the context of filters? Design a high pass filter with cut-off frequency of 200Hz if  $R = 20 \Omega$  with waveshapes. CLO3 An 05
4. b) Discuss the behavior of low-pass and high-pass filters concerning their response to different frequencies. Also design band pass and band stop filter using low-pass and high pass filter. CLO3 E 05
5. a) What are the advantages of three phase balanced system? Find out the phase sequence of the following voltages. If  $V_{an} = 200 \angle 10^\circ$ ,  $V_{bn} = 200 \angle -230^\circ$ ,  $V_{cn} = 200 \angle -110^\circ$  CLO3 An 05
5. b) A balanced  $\Delta$ -connected load having an impedance  $20 - j15 \Omega$  is connected to a  $\Delta$ -connected positive-sequence generator having ( $V_{ab} = 200 \angle 0^\circ$  V). Calculate the phase currents of the load and the line currents. CLO3 Ap 05

**OR**

Obtain the line currents of the three phase circuits of Fig-5(b).

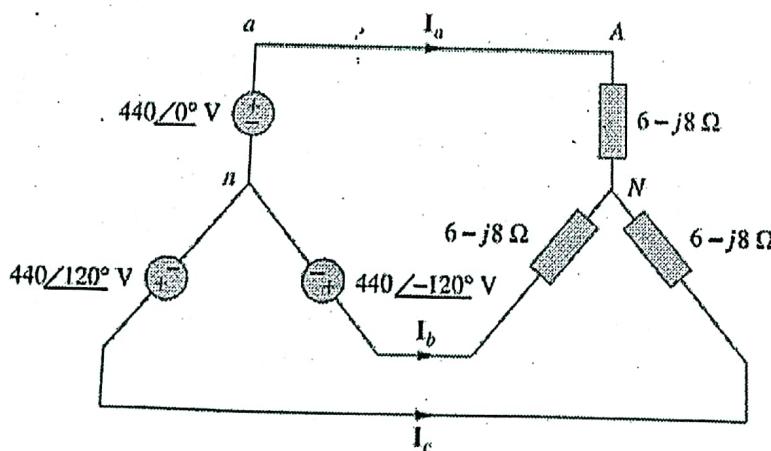


Fig-5(b)

[Answer **all** the questions; in some questions, there are options; you will solve any one of them; Figures in the right-hand margin indicates full marks. Separate answer script must be used for Group-A and Group-B]

### Group-A

- 1 a) Write the output produced by the following code snippet. Here **X** is the last digit of your matric ID. Suppose your ID is C233201, then the value of **X** should be 1. 2 CO1 C2

```
int i, j, n = X;
for(i = 0; i < 5; i++)
{
    for(j = 0; j < i; j++)
    {
        n += (i + j - 1);
        printf("%d,", n);
        break;
    }
    printf("n = %d\n", n);
}
```

- b) Write a C program that reads two positive integers **N** and **M** and prints the following pattern for **N** rows and **M** columns. Here, the odd rows should be printed with **M** stars and the even rows should be printed with **M** dashes. 3 CO3 C3

Sample Input	Sample Output
4 5	***** -----***** -----
5 4	**** ----- ***** ----- ****

- c) You will be given two positive integers **N** and **X**. You have to produce a sequence of **N** integers where the first **X** numbers are in ascending order, next **X** numbers are in descending order, next **X** numbers are in ascending order, and so on. You may print any number you want just make sure that they are in the right order. You may assume that in the input, **N** will be always divisible by **X**. 5 CO3 C3

Sample Input	Sample Output
12 3	1 2 3 6 5 4 1 2 3 6 5 4
20 4	1 3 5 7 4 3 2 1 1 3 5 7 4 3 2 1 1 3 5 7

**OR**

The term *evil number* is used to denote nonnegative integers that have an even number of 1s in their binary expansions. For example, 3 is an evil number since its binary expansion 11 has two 1s. The first few evil numbers are 0, 3, 5, 6, 9, 10, 12, 15, 17, 18, 20 ... Numbers that are not evil are then known as *odious numbers*. You are given an integer N followed by N numbers. For each of the N numbers find whether it is an Evil or an Odious number.

Sample Input	Sample Output
3	6 is an Evil number.
6	4 is an Odious number.
4	5 is an Evil number.
5	

- a) What are the differences between *local variable* and *global variable*? Explain with examples. 3 CO2 C2

- b) Consider the following C function named fact. Trace the call `fact(5)`.

2 CO2 C2

```
int fact( int a )
{
    if (a < 1)
        return 1;
    else
        return( a * fact( a - 1 ) );
}
```

- c) Write a function named `printRang` that, when called, prints out all integers between two given values **a** and **b**, assuming **a**  $\leq$  **b**, where **a** should be the first argument to the function and **b** the second argument to the function. `printRang` function will return the sum of the printed values to the main function and print the sum at main function. For example, if the call `printRange(11, 15)` is executed, this call should print out the sequence 11, 12, 13, 14, 15 and return 65 to the main function. Print Sum = 65 from main function. 5 CO3 C3

**OR**

Write a C program that will pass an array through the arguments. Your defined function will find the *median* of those numbers. To find the median, the numbers have to be listed in numerically sorted order. Then the middle element is the median. For example, if the list is {4, 1, 1, 10, 3, 5, 7}, then first sorting in ascending order, we find the list as {1, 1, 3, 4, 5, 7, 10}. The median will be the 4-th element which is 4. Note that, if the number of elements in the list is even, then the average of two middle elements will be the median.

**Group-B**

- 3) Write C code segment to define a one dimensional, 10 element integer array called **Arr**. Assign zeros to the first three array elements. Then the values 1, 4, 7, 10 to the next four array elements and assign 0 for the rest of the elements. Then print the elements of the array in the reverse order. 2 CO1 C2

The following C code is meant to check whether there are three consecutive one's in an array or not. But it might have some issues. Fix the code. You might assume that the value of n could be at most 1000.

```
#include <stdio.h>
int main()
{
    int n, arr[n], i, f;
    scanf("%d", &n);
    for(i = 1; i < n; i++) {
        scanf("%d" arr[i]);
    }
    for(i = 1; i < n; i++) {
        if(arr[i]==1 && arr[i+1]==1 && arr[i+2]==1) {
            f = 1;
        }
    }
    if(f == 1) printf("Yes\n");
    else printf("No\n");
    return 0;
}
```

- c) Rakib is given an integer number N. Your task is to help Rakib in finding, whether the number is a *palindrome* or not. If given number is a palindrome just print 'Found it Palindrome.' otherwise, 'No' without quotation. 5 CO3 C3

Sample input	Sample output
234	No
12321	Found it Palindrome.

### OR

You are given two integers N and X followed by an N sized array. Print "Yes" if the first X elements are in ascending order and the rest of the elements are in descending order. Print "No" otherwise.

Sample Input	Sample Output
8 3 1 4 6 8 6 5 4 3	Yes
8 3 1 4 6 8 6 5 10 11	No

- a) You're given an array A of size N × M, and an integer S. Write C code segment to find out how many rows contains the value S. 3 CO3 C3

Sample Input	Sample Output
4 3 1	3
1 1 6	
4 1 2	
5 2 2	
1 3 4	

In this example, the first, second and fourth rows contain the value 1 in it.

- b) If  $s1$  and  $s2$  are two string variables, and  $i$  is an integer variable; which of the following lines is NOT a valid use of string functions? Justify the answer.  
 i) `strcmp(i, s1);` ii) `strcpy(s2, s1);` iii) `strcat(s1, s2+i);` iv) `i = strlen(s1);`
- c) A password is valid if it follows the following constraints:  
 1. Contains at least one uppercase letter  
 2. Contains a single digit [0-9]  
 3. Contains a special character other than the alphabet and numbers  
 4. It should be at least 8-character long  
 5. The password should not be "12345678"

2 CO2 C2

5 CO3 C3

You are given a string. Write a C program to check whether the string is a valid password or not.

**OR**

Let two strings will be given as user input. Write a C program to apply following operations to the strings:

- i. Reverse the first string  
 ii. Compare the second and reversed string and determine whether both strings are same or not.

[*Don't use any library function to perform the reverse and compare operation*]

- a) Demonstrate the differences between *pass by value* and *pass by reference* with a suitable example. 2 CO2 C2
- b) Consider the following definition: 3 CO3 C3
- ```
struct Bookinfo
{
    //define a field for title
    //declare a field for author's name
    //declare a field for price
};
```
- i) Complete the above structure definition by declaring members/fields for storing book titles (at most 99 character long), authors name (at most 49 character long) and price of book (a real number).  
 ii) Using the above structure, write a main program that will receive from user information (title, author name, price) of N books. Then display those information of N books.
- c) Suppose there is a file named `highscore.txt` that contains a single integer. Read the value from the file and save it to a variable named `currentScore`. 3 CO3 C3  
 Now take an integer input from keyboard and store it to a variable named `newScore`. Then update the value in `highscore.txt` if the `newScore` is greater than the `currentScore`. Otherwise, change nothing.
- d) Write the definition of a macro **CUBE (x)**. The macro should compute the cube of **x**. 2 CO3 C3  
 Write the macro so that the following statements evaluate correctly:  
`int x, y; x = CUBE (-5); y = CUBE (4-1);`

**International Islamic University Chittagong**  
**Department of Computer Science & Engineering**

**Final quiz of Autumn 2023**  
Course Code: EEE-1122  
Time: 3h

Program: B.Sc. Engg. (CSE)  
Course Title: Basic Electrical Engineering Sessional  
Full Marks: 30+20

[Answer each of the questions from the followings; Figures in the right margin indicate full marks.]

| S/N   | CLO Description                                                                                                | PLOs           | Bloom's Taxonomy Domain/Level |
|-------|----------------------------------------------------------------------------------------------------------------|----------------|-------------------------------|
| CLO-1 | Implement theoretical knowledge from previously learned course to perform experiments                          | PLO1           | Cognitive /Apply              |
| CLO-2 | Conducting open ended experiments using appropriate tools in electrical circuits                               | PLO5           | Cognitive /Apply              |
| CLO-3 | Comply with ethical values and responsibility towards team members in punctuality, bench tidiness and analysis | PLO8,<br>PLO10 | Cognitive /Apply              |

**Part-A**

**1. Multiple-choices**

**1\*5=5**

- i) How many cycles will an AC signal make in 2 seconds if its frequency is 100 Hz?  
a) 50  
b) 100  
c) 150  
d) 200
- ii) Which of the following according to KCL must be zero?  
a) Algebraic sum of currents in closed-loop  
b) Algebraic sum of power in closed-loop  
c) Algebraic sum of currents entering and leaving a junction  
d) Algebraic sum of voltages across the input and output
- iii) How should an ammeter be connected in a circuit to measure current?  
a) In parallel  
b) In series  
c) In a combination of parallel and series  
d) In a random arrangement
- iv) Which of the following is correct about the power consumed by R1 and R2 connected in series if the value of R1 is greater than R2?  
a) R1 will consume more power  
b) R2 will consume more power  
c) R1 and R2 will consume the same power  
d) The relationship between the power consumed cannot be established
- v) The frequency of an AC wave is defined as:  
a) number of voltage or current cycles per second  
b) time it takes to complete one cycle  
c) phase angle of the wave  
d) maximum value of the wave

**2. Fill in the blanks-**

1\*5=5

- i) Multimeters can also measure capacitance in \_\_\_\_\_ and frequency in \_\_\_\_\_.
- ii) An ammeter must have a very \_\_\_\_\_ resistance to ensure accurate current measurements.
- iii) Superposition simplifies the analysis by calculating the \_\_\_\_\_ effect of each source individually and then summing them up.
- iv) The induced emf in a generator varies as the magnets move, resulting in a \_\_\_\_\_ potential difference across the terminals of the generator.

**Part-B**

3. Describe the procedure to measure the resistance of a resistor using a multimeter. 2
4. Explain the concept of series and parallel connections of resistors. Give an example of each. 2
5. Distinguish between alternating current (AC) and direct current (DC). 3
6. Describe the connection of an ammeter and a voltmeter in the circuit with suitable example. 2
7. Explain the detailed procedure you did in the experiment 'Verification of Superposition Theorem' in your own words. 3
8. Write the problems you face while doing the experiment 'Verification of KVL and KCL'. 2
9. Draw the circuit diagrams of experiment you did on KVL, KCL, Low pass filter and Series-parallel RLC circuit. 3
10. Explain the detailed procedure you did in the experiment 'Study of High pass filter' in your own words. 3

**11. Lab Experiment + Viva**

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