# International Islamic University Chittagong
## Centre for General Education (CGED)
**Semester End Examination, Autumn -2022**
**Course Code: UREM-1101**
**Course Title: Text of Ethics and Morality**

**Marks: 50** **Duration: 2.5 hours**

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**Answer the following questi** **5 X 10 = 50**

1. Explain the impact of drug and gambling on society.

or

What are the rules and ethical directions of marriage in Islam Explain?

2 What did Lokman advise to his son? Explain how his sermon plays a significant role in the moral development of the young.

3. Write the rule of divorce in Islam in details

or

Write the name of days in Arabic and how many kinds of Arabic word are there ?

4. Write the Characteristics of ideal servant of Allah as stated in the holy Qur'an

5. Who are inheritors of paradise? Explain them according to Surahtul Mu'menoon .

# International Islamic University Chittagong

Centre for General Education (CGED)

Semester End Examination Autumn: 2022

Course Code: UREL 1106 Course Title: Advanced English

Marks: 50 Time: 2 Hours and 30 Minutes

## Section-A: Reading Part

**1. Read the comprehension carefully and then answer the following questions.**

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 organization to ensure peace would be 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 neighbors.

These events led to the Second World War in 1939. This war raged over the continents and seas of the world from1939 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 war 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 Organization (UNO).

On October 24 1945, representatives of fifty–one nations met to form as association called the United Nations Organization. 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 organization 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 worldwide disaster will disappear. If it fails, there may be no further hope for mankind. **13x01=13**

a) 'Promotions of human welfare'- frame a sentence with the phrase from your own.
b) 'Disagreement between two people'- find synonym for the words from the passage.
c) ___ of a family is quite impossible nowadays. Fill in the gap with a suitable word from the passage.
d) What made the League of Nations cease to function?
e) 'To stay alive'- find synonym for the words from the passage.
f) If there were no war in the world,_____- Fill in the gap with a suitable clause.
g) 'To refuse to obey' - find a synonym for the words from the passage.
h) What can lead the mankind to ultimate frustration?- Answer the question from the passage.
i) The League of Nations worked for the *promotion of human welfare.* Rewrite the sentence explaining the words in italics.
j) The word *deadly* is an (adverb/adjective/adverbial) (Choose the best answer from the alternatives.)

k) Constitute a sentence with the phrase -'worldwide disaster'.
l) What do you think if the UNO is successful or not nowadays?
m) Representatives of fifty one nations met to form an association called the United Nations Organization. Make a question using WH question words replacing the words underlined.

2. The recent controversy around a question in this year's HSC Bangla First Paper exam has, once again, brought to light the many deficiencies in our education system. It makes us wonder if the so-called "creative" question pattern is serving the purpose of inspiring critical thinking when the teachers themselves are so lackluster in their performances.

The creative question system was first introduced in 2008 to promote critical thinking and move the students away from blindly memorizing guidebooks. However, many teachers still remain woefully unprepared to set questions under this system. According to a government survey, about 38 percent of secondary and higher secondary school teachers in Bangladesh cannot set question papers under the creative method. More than half of all teachers have not been trained in setting creative questions. The teachers who did receive some training complained that it was not adequate.

This has resulted in some teachers copying questions directly out of guidebooks, as had reportedly happened in the 2020 SSC Bangla exam. Many others are accused of buying questions from teachers' associations, even though there are strict government orders against doing so. The other problem that has arisen from this is the appearance of questionable questions in public examination papers, the latest of which is mentioned above.

All these suggest that many of our teachers lack the necessary guidance to set creative questions, in the absence of adequate training or comprehensive guidelines of what's acceptable to posit in a question. It's high time we took a look at what these trainings contain and evaluated whether our teachers themselves lack the sensitivity and critical thinking needed to foster such skills in their students.

Our education system for young students should inspire them to think critically and creatively. An atmosphere of learning and free thinking should be upheld at all the educational institutions across the country, and our teachers should be trained to maintain that. Academic freedom and a free exchange of ideas should be the first priority of our educators. Failing that and preparing communal question papers instead will do irreparable harm to our society.

**Answer the questions as directed** **0.5x14=7**

a) Sometimes creative questions are imitated from the guidebooks. True or false?
b) Find a synonym for the word 'sufficient' from the passage.
c) We should overcome __ to strengthen our education system. Fill in the gaps with word from the passage.
d) The word failing in the last sentence is gerund or present participle?
e) What does the survey tell us regarding our education system?
f) Students ought to be __ to think critically and creatively. Fill in the gaps with word from the passage.
g) How will you explain the phrase 'blindly memorizing'?
h) All education boards should train teachers regarding question __. Fill in the gaps with word from the passage.
i) All educationists should give priority to __ freedom.
j) Find a synonym for the phrase main concern.
k) Learning and free thinking should be upheld at all the educational institutions (Make it active).
l) Write the noun form of the word 'adequate'.
m) In our country, the critical question system was first put to practice in 2018. True or false?

n) Make a sentence of your own with the phrase the purpose of inspiring.

3. Write a summary of the unseen passage in 50 words. 05

## Grammar Part

4. **Answer the following questions as directed.** 0.5×20=10

a) Government should undertake steps ____ our education system is developed. (Use a suitable conjunction)
b) Though the creative model is good, many teachers are not aware of it. (What type of subordinate clause is it?)
c) Students should be taught to think _____ (create). (Use correct part of speech)
d) It is obligatory for you to help your brother. (Rewrite the sentence using a suitable modal auxiliary)
e) Make a sentence with phrase **even though**
f) Give an example of third conditional sentence.
g) If water is boiled at 100°C, it _____ (become) vapor. (Complete the sentence)
h) Give an example of present perfect continuous beginning with '*How long___*'
i) Either you or your brother (be) suitable for this job. (Use verb 'be' in suitable form.)
j) The tree was cut____a wood cutter _____an axe. (Use prepositions in the gaps.)
k) The number of the students who have withdrawn from the class this quarter (is/are) appalling. (Show suitable sub-verb-agreement)
l) A compound sentence consists of two or more (subordinate /principal/adverbial) clauses. (Choose the best answer from the options)
m) A conditional sentence is a (compound sentence/simple sentence/complex sentence). (Choose the right option)
n) Kamal has no excuse____ dropping from school. (Put suitable preposition in the gap)
o) Nobody saw him without walking stick. (If the underlined word is gerund or participle?)
p) Do this without _____ any mistakes. (Put a suitable gerund in the gap)
q) If I asked him to wait, _____. (Complete this sentence according to the structure of conditional sentence)
r) My cousin along with his parents (to have) visited the USA. (Use right form of verb)
s) You informed me what happened there. (What type of depended clause the underlined one is?)
t) It was many years since I (see) her last. (Use correct form of verb)

## Writing Part- 10

5. Free and Fair election depends on good intentions of a government of a country- do you agree or not? Give reasons for or against your answer. 5

6. Suppose you are the Chief Executive Officer of Apex group. Now write a letter of greetings to the CEO of Walton group for his being selected CIP second time. 5

7. Listening test (respective teachers will conduct it in the classroom) 5

International Islamic University Chittagong

Department of Computer Science and Engineering

B. Sc. in CSE

Semester End Examination, Autumn 2022

Course Code: PHY-1101 Course Title: Physics-I

Time: 2 hours 30 minutes Full Marks: 50

(i) The figures in the right-hand margin indicate full marks

(ii) Course Outcomes and Bloom's Levels are mentioned in additional Columns

| Course Learning Outcomes (COs) of the Questions | |
|---|---|
| CLO1 | Understand the basic knowledge of mechanics, optics and thermodynamics in the context of engineering. |
| CLO2 | Apply mathematical knowledge of mechanics, optics and thermodynamics to formulate and solve basic engineering problems. |

| Bloom's Levels of the Questions | | | | | | |
|---|---|---|---|---|---|---|
| Letter Symbols | R | U | App | An | E | C |
| Meaning | Remember | Understand | Apply | Analyze | Evaluate | Create |

## Part A

[Answer the questions from the followings]

1. a) Discuss the conditions for the production of beats. CLO1 U 2

1. b) With a neat diagram explain the Doppler effect for a moving source and a moving observer. CLO1 R 5

OR

Derive the expression "the apparent frequency of the note when the stationary source moves towards and away from an observer"

1 c) Two tuning forks are sounded together, and producing 12 beats in 3 s. The frequency for the first tuning fork is 333 Hz, what will be the frequency of the seconds? The loaded mass in the first tuning fork, or the reduced mass in the second tuning fork result same. i.e. the reduction in the beats. CLO2 A 3

2. a) Why all periodic motions are not simple harmonic motion? CLO1 U 2

2. b) Derive the differential equation for simple harmonic motion, and show it's graphical representations. CLO1 R 5

Or,

Show that the total energy for a simple harmonic body is twice as of the average kinetic energy of that body.

2 c) The equation of a particle executing simple harmonic motion is $y = 10\sin(\omega t + \delta)$. If the period is 30 sec, find out the angular frequency. CLO2 A 3

## Part B

[Answer the questions from the followings]

| | | | | |
|---|---|---|---|---|
| 3. | a) | Write down all statements (four) for the second law of thermodynamics. | CLO1 | U | 2 |
| 3. | b) | Define molar specific heat and with detailed calculation show that Cp is greater that Cv. | CLO1 | R | 5 |
| 3. | c) | Find the efficiency of a Carnot engine working between $127^0$c and $27^0$c. It absorbs 80 calories of heat, how much heat it will be rejected? | CLO2 | A | 3 |
| | | OR | | | |
| | | Find the efficiency of a Carnot's engine working between $137^0$C and $37^0$C. | | | |
| 4. | a) | What is interference of light? State the fundamental conditions for the interference. | CLO1 | R | 2 |
| 4. | b) | Explain the Young's double slit experiment and determine the condition of the bright and dark fringe. | CLO1 | R | 5 |
| 4. | c) | Green light of wavelength 5100 Å from a narrow slit is incident on a double slit. If the overall separation of 10 fringes on a screen 300 cm away is 2 cm, find the slit separation. | CLO2 | A | 3 |
| | | Or, | | | |
| | | In a Newton's rings experiment the diameter of the 17th ring was found to be 0.577 cm and that of the 9th ring was 0.337 cm. If the radius of the plano-convex lens is 97 cm, calculate the wavelength of the light used. | | | |
| 5. | a) | Define Polarization of light, and mention its three practical uses. | CLO1 | R | 2 |
| 5. | b) | State and explain Brewster's law. | CLO1 | U | 5 |
| | | OR | | | |
| | | Explain the intensity of diffraction pattern by single slit. | | | |
| 5. | c) | A screen is placed 2 m away from a narrow slit, which is illuminated by a light of wavelength 5100A0. If the first minimum lies 4.5 mm on or either side of the central maximum, calculate the slit width. | CLO2 | A | 3 |

# International Islamic University Chittagong (IIUC)
## Department of Computer Science and Engineering (CSE)
## Semester Final Examination

**Program: B. Sc. in CSE** | **Semester: Autumn-2022**
**Course Code: MATH-1107** | **Course Title: Mathematics-I**
**Time: 2:30 hours** | **Total Marks: 50**

| | |
|---|---|
| (i) | Answer all the questions. The figures in the right-hand margin indicate full marks. |
| (ii) | Please answer the several parts of a question sequentially. |
| (iii) | Separate answer script must be used for separate group. |
| (iv) | Course Learning Outcomes (CLOs) and Bloom's Levels are mentioned in additional Columns. |

**Course Learning Outcomes (CLOs) of the Questions**

| | |
|---|---|
| CLO1: | Compute the functions, derivatives, integrals and extrema of single-variable and/or multivariable functions. |
| CLO2: | Understand the techniques of differentiation and integration. |
| CLO3: | Demonstrate the applications of differentiation and integration. |

**Bloom's Taxonomy Domain Levels of the Questions**

| Letter Symbols | R | U | Ap | An | E | C |
|---|---|---|---|---|---|---|
| Meaning | Remember | Understand | Apply | Analyze | Evaluate | Create |

## Group – A

| | | | Marks | CLO | DL |
|---|---|---|---|---|---|
| 1. | a) | If $u = a\log(x^2+y^2) + b\tan^{-1}\left(\frac{y}{x}\right)$ then show that, $\frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} = 0$. | 5 | CLO1 | R&U |
| | Or) | If $u = \sin^{-1}\left(\frac{x+y}{\sqrt{x}+\sqrt{y}}\right)$ then using Euler's theorem show that, $x\frac{\partial u}{\partial x} + y\frac{\partial u}{\partial y} = \frac{\tan u}{2}$. | 5 | CLO1 | R&U |
| | b) | Define maxima and minima of a function. Findthe maxima and minima of the function, $f(x) = 2x^3 - 21x^2 + 36x - 20$. | 5 | CLO1 | U |
| 2. | a) | Evaluate the following integral<br>i). $\int \frac{dx}{4x^2+8x+13}$ ii) $\int \frac{x^2}{x^2-4}dx$ | 5 | CLO2 | U |
| | Or) | Evaluate the following integral<br>i). $\int \frac{dx}{(2x+1)\sqrt{4x+3}}$ ii) $\int \frac{dx}{(2+x)\sqrt{1+x}}$ | 5 | CLO2 | U |
| | b) | (i) Evaluate the Integral $\int x^2 e^x dx$ | 3 | CLO2 | U |
| | | (ii) Evaluate the Integral $\int e^x(\sin x - \cos x)dx$. | 2 | CLO2 | U |

## Group – B

| | | | Marks | CLO | DL |
|---|---|---|---|---|---|
| 3. | a) | Evaluate the integral $\int_0^1 x^2 dx$ by geometrically | 5 | CLO2 | U |
| | b) | Prove that, $\int \sin^n x dx = -\frac{1}{n}\sin^{n-1} x\cos x + \frac{n-1}{n}\int \sin^{n-2} x dx$ | 5 | CLO2 | U |
| | Or) | Prove that, $\int_0^{\pi/2} \frac{\sqrt{\sin x}}{\sqrt{\sin x}+\sqrt{\cos x}} dx = \frac{\pi}{4}$. | 5 | CLO2 | U |
| 4. | a) | Evaluate the triple $\int_0^1 \int_0^x \int_0^y x^3 y^2 z\, dz\, dy\, dx$. | 5 | CLO2 | U |
| | b) | Prove that i) $\Gamma\left(\frac{1}{2}\right) = \sqrt{\pi}$ ii). $\Gamma(n+1) = n\Gamma(n)$. | 5 | CLO2 | U |
| | Or) | Define Gamma and Beta function. Show that, $\int_0^{\pi/2} \cos^8 x \sin^6 x dx = \frac{5\pi}{4096}$ | 5 | CLO2 | U |
| 5. | a) | Find the arc length along the curve $y = \frac{2}{3}x^{3/2}$ between $x = 3$ *and* $x = 8$. | 4 | CLO3 | Ap |
| | b) | Find the area of the surface generated by revolving the arc of the curve of $y = x^3$ from $x = -1$ *to* $x = 2$ about the x-axis. | 3 | CLO3 | Ap |
| | c) | Find the volume of the solid of revolution generated by the graph $y = x^2$ between $x = 0$ *to* $x = 2$ about the x-axis. | 3 | CLO3 | Ap |

# International Islamic University Chittagong

Department of Computer Science and Engineering

B. Sc. in CSE

Final Exam, Autumn-2022

Course Code: **EEE-1121** Course Title: **Basic Electrical Engineering**

Time: 2 hours 30 minutes Full Marks: 50

(i) The figures in the right-hand margin indicate full marks

(ii) Course Outcomes and Bloom's Levels are mentioned in additional Columns

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## Part A

[Answer the questions from the followings]

| | | | | | |
|---|---|---|---|---|---|
| 1 | a) | Diferentiate between DC signal and AC signal. Draw and mention the name of the type of signal for the following expressions. $i(t)= 5t$ Amp, $V=5$ volts, $v(t)=15e^{-2t}$ Volts. | CO1 | U | 2 + 3 |
| | | **OR** | | | |
| | | Determine the average value of the voltage wave form in Fig. 1 (b). If the voltaget is applied across a **12 Ω** resistor, find the average power absorbed by the resistor. | | | |

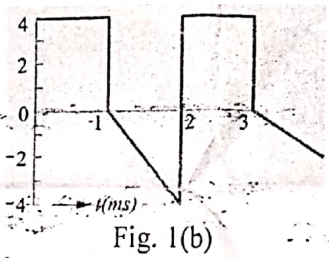


Fig. 1(b)

| | | | | | |
|---|---|---|---|---|---|
| 1. | b) | Determine the rms value of the current wave form in Fig. 1 (b).. | CO1 | A | 5 |

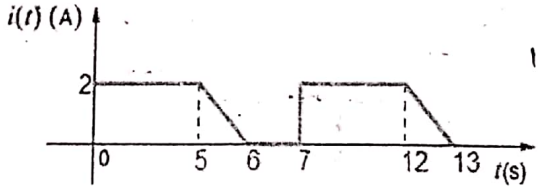


Fig. 1(b)

| | | | | | |
|---|---|---|---|---|---|
| 2. | a) | Draw the power triangle and show the relationship between four elements of the power triangle. | CO3 | U | 4 |
| 2. | b) | A voltage of Vrms = $110\angle 85°$ V is applied to the load $(12.541 + j34.46)$ Ω. Determine: (a) the current and power factor , (b) apparent powers, (c) the real power, and (d) reactive powers. | CO1 | A | 6 |
| | | **OR** | | | |
| | | For the circuit in Fig. 2(b), calculate $Z_T$ and $V_{ab}$. | | | |

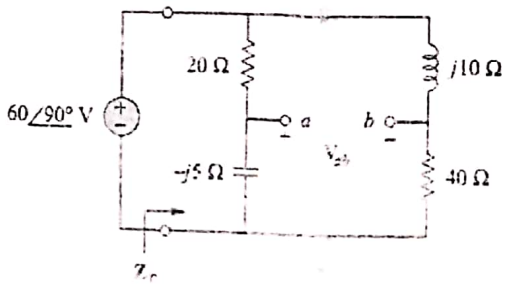


Fig. 2(b)

## Part B

[Answer the questions from the followings]

| | | | | |
|---|---|---|---|---|
| 3. a) | Show that inductor voltage has a magnitude of $\omega LI_m$ and the voltage leads the current by 90°. | CO1 | A | 2 |
| 3. b) | Voltage and current are out of phase by 30°, and current lags. Express the voltage and current in equations. Using voltage as the reference, sketch the phasor diagram and the corresponding waveforms. | CO3 | A | 3 |
| 3. c) | Evaluate the following complex numbers and leave your results in polar form:<br>i. $5\angle 30° [(6-j8)+\{(3\angle 60°)/(2+j)\}]$<br>ii. $[\{(10\angle 60°)(3\angle -50°)/(2+j6)-(5+j)\}]$ | CO3 | A | 5 |
| 4. a) | What is a filter? Define "active filter" and "passive filter." Briefly classify the different types of filters. Write about the applications of filters as well.<br>**OR**<br>Suppose you are working in a project, and you are asked to design low-pass filter. If the desired corner frequency is 1.2 KHz and you have a capacitor of 0.1 μF. Now, design the filter circuit with proper equations and show its frequency response. | CO4 | U | 5 |
| 4. b) | Design a band-pass filter of the form in Fig.4(b) with a lower cutoff frequency of 20.1 kHz and an upper cutoff frequency of 20.3 kHz. Take $R = 20$ k &. Calculate $L$, $C$, and $Q$. | CO4 | A | 5 |

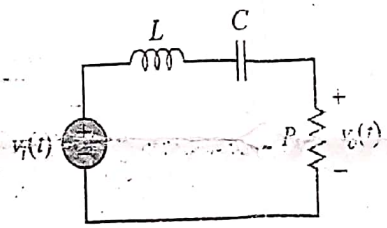


Fig. 4(b)

| | | | | |
|---|---|---|---|---|
| 5. a) | What is a Three-Phase Circuit? What are the advantages of 3-phase over 1-phase? | CO4 | R | 2 |
| 5. b) | Find $V_{an}$ and $V_{cn}$ for given vale of $V_{bn}=220\angle 35^0$. Assuming- (a) positive sequence and (b) negative sequence | CO4 | A | 3 |
| 5. c) | A 120-V rms 60-Hz source supplies to load 120 kVAR, pf 0.8 lagging Calculate the value of the capacitance connected in parallel that will raise the power factor to unity. Also explain How does power factor correction reduce bill?<br>**OR**<br>Refer to the circuit in Fig.5(c) Determine the total average power, reactive power, and complex power at the source and at the load. Given $V_p=110\angle 0^o$ $V$ and $I_p=6.81\angle -21.8^o$ $A$ | CO4 | A | 5 |

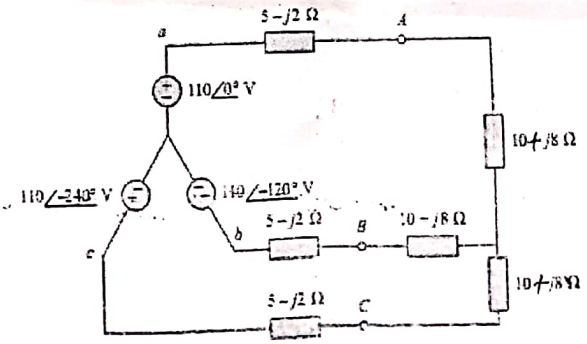


Fig. 5(c)

# International Islamic University Chittagong

## Department of Computer Science and Engineering

*B. Sc. in CSE Final Assessment, Autumn 2022*

**Course Code: CSE 1121 Course Title: Computer Programming 1**

*Total marks: 50* *Time: 2 hours 30 minutes*

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

**Group-A**

| | | | CO | DL |
|---|---|---|---|---|
| 1. | | | | |
| a) | What will be the output of the following program?<br>`int main()`<br>`{`<br>`  int i,j;`<br>`  for(i = 3; i >= 1; i--)`<br>`  for(j = 0; j <= i; j++)`<br>`  printf("%d %d\n", i, j);`<br>`  return 0;`<br>`}` | 2 | CO2 | U |
| b) | The following code prints the numbers from **1** to **n**.<br>`for (i = 1; i <= n; i++)`<br>`  printf("%d\n", i);`<br>Modify your code so that it prints the numbers **from p to q** but skips printing every number divisible by 3. You should use **continue** to accomplish this task. How the output will be changed if the **continue** statement is replaced with a **break** statement? | 3 | CO2 | U |
| c) | Given a range `[a, b]`, write a C program to find the summation of all the odd integers which is divisible by 3 or 5 in this range. For example, the summation of all the odd integers which is divisible by 3 or 5 in the range `[3,9]` is **3+5+9=17**.<br>`Input: Enter two integers: 3 9`<br>`Output: Sum of all integers in the range is: 17`<br>**Or,**<br>Write a C program for printing the following pattern for any **N and d**. You should print a blank a line if the line number is divisible by **d**. The given pattern is for **N = 5 and d = 2**.<br>`*`<br>`***`<br>`*****` | 5 | CO2 | A |
| 2. | | | | |
| a) | What will be the output of the following program? Explain the output with all the calculations. | 3 | CO3 | U |

```
#include <stdio.h>
int a = 1, b = 2;
int funct2 (int a) {
   return (b + a);
}
int funct1 (int  a) {
   b = funct2 (a +  1) + 1;
   return (b);
}
int main () {
   int c, a = 3;
   for (c = 1; c <= 5; ++c) {
      b += funct1(c + 1) + a;
      printf ("%d  ", b);
   }
   printf("\nAns = %d", b+a);
   return 0;
}
```

b) Consider the following program: 3 CO3 U

```
#include <stdio.h>
int fib(int n)

    if(n <= 1) return n;
    int ret = fib(n-1) + fib(n-2);
    return ret;
}
int main()
{
    int n = 3;
    printf("%d-th Fibonacci number: %d\n", n, fib(n));
    return 0;
}
```

I) What is the output of the code segment given above?
II) Explain how the recursion will be executed by drawing the recursion tree.

**Or**

Let a function **F** is defined as follows:

```
F(n, 0) = 1
F(n, n) = 1
F(n, k) = F(n-1, k-1) + F(n-1, k)
```

Write a recursive function to evaluate this function.

c) Write a function named **divisorcheck** that takes two integers **x** and **y** as the parameters and returns 1 if **x** divides **y** or **y** divides **x**. It returns 0 otherwise. Demonstrate your function in a complete program. 4 CO3 A

**Or,**

Write a function named **oddcheck** which takes two integers **x** and **y** as the parameters. The function returns **1.1** if both numbers are odd; **0.1** if one of the numbers is odd, and **2.0** if both numbers are even. Demonstrate your function in a complete program.

## Group-B

3.

a) Initialize an array with your **ID** (Example: If your ID is **C143256** and there is an array named A). After storing in the array, it will be look like
A[0] = 1 , A[1] = 4 , A[2] = 3 , A[3] = 2 , A[4] = 5 , A[5] = 6
Then write a code segment to print the ID in the following format

```
i = 0, A[0] = 1
i = 1, A[1] = 4
i = 2, A[2] = 3
i = 3, A[3] = 2
i = 4, A[4] = 5
i = 5, A[5] = 6
```

2 CO3 U

b) Write a C program to take N numbers as input and store them in an array. Then input another number **X**. Now, print all those numbers which are larger than **X** in a single line. In the next line, print all those numbers which are smaller than **X**.

4 CO3 A

| Sample Input | Sample Output |
|---|---|
| 5<br>8 4 7 6 2<br>6 | 8 7<br>4 2 |

Or,
Given an array of integers, write a C program to find if it contains a strictly *increasing sequence* of integers. In the following examples, **1, 4, 7, 9** is a strictly increasing sequence but **1, 4, 4, 7** or **1, 4, 7, 3** are not.

c) Write a C program that reads a string (containing only lowercase alphabets and white spaces), and find the occurrences of vowels (`a, e, i, o, u`).
For each of the vowels, print the vowel, followed by ' `=>` ', followed by the number of occurrences of that vowel, followed by the percentage of its occurrences among all the vowels.

4 CO3 A

| Sample Input | Sample Output |
|---|---|
| `i love bangladesh` | `a => 2 (33.33%)`<br>`e => 2 (33.33%)`<br>`i => 1 (16.67%)`<br>`o => 1 (16.67%)`<br>`u => 0 (0.00%)` |

Here, the number of occurrences of `a, e, i, o, u` are `2, 2, 1, 1, 0` respectively. In total, there are 6 vowels in the given string. So, the % of `a = 2/6 = 33.33%, % of i = 1/6 = 16.67%` and so on.

4.

a) Given the following array.

```
int items[8] = {3, 7, 9, 2, 1, 4, 0, 5};
```

Write a program segment to print the elements contained in **items** using pointer.

2 CO3 U

b) When passing an argument to a function, what are the differences between *passing by value* and *passing by reference*? Explain with a simple C program.

3 CO3 U

c) Create a structure **Player** that contains the fields. 5 CO3 A

**name** – a string of size 24 denoting the name of the player
**country** – a string of size 24 denoting the country of the player
**match_played** – an integer denoting the number of match played
**goals** – an integer denoting the number of goals scored by the player
**pass_accuracy** – a double precision floating point number

Write a C program to declare an array of **Player** and input **N** players' data in it. Print the **name** and the **country** of the player(s) who has the highest **goals**.

5.

a) You are working on a project where you need to save the **Student ID** and **Total marks** of some students in a file named "**db.txt**". You will be given a *string* and an *integer* number as input representing the Student ID and Total marks obtained by a student respectively. You have to add the information to the file. If the Student ID already exists in the file, then just update the marks of that student. Write a C program that will take input and save information in the file as required in the above mentioned description. 5 CO3 A

**Or,**

Write a C program to open a file and write **N** numbers taken from keyboard. Next, close the file and open it again in read mode. Now, read the numbers from the file and print them in *reverse* order.

b) Suppose, **A** and **B** are unsigned, 16-bit integer quantity whose hexadecimal values are `0x6db7 and 0x5ae1`. Evaluate each of the following bitwise expressions and show all the calculations: 3 CO3 U

`i) A ^ B  ii) A >> 4 iii) B << 3`

**Or**

Write a C program to find whether 3rd least significant bit is **1** or **0**. Now, make this bit **1** irrespective of its previous content.

c) Write the output of the following programs with an explanation: 2 CO1 U

```
#include<stdio.h>
#define PROD(a,b) a*b
int main()
{
    printf("%d ",PROD(3+4,2+6));
    return 0;
}
```

Rewrite the code so that you can get the correct output.

# International Islamic University Chittagong

## Morality Development Program (MDP)

Semester End Examination, Autumn -2022

**Course Code: MDP-1101**

**Title: Tajweedul Qur'an: I**

**Marks: 50** **Duration: 2.. hours**

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**Answer any five (05) of the following questions** **5X10 = 50**

Question No- 1

What do you understand by Madd? How many types of Madd are there in Tajweed? Explain Madde Munfasel, Madde Arezi and Madde Muttassil with examples.

Question No- 2

Write the meaning of any two Surahs below:

a) Suratul Kawsar
b) Suratun Nas'r
c) Suratul Kaaferoon

Question No- 3

a. What do you understand by Taharah? When is bathing obligatory?
b. Define Wudu, Explain the obligations of Wudu.

Question No- 4

What is obligatory bath? How many types of obligatory baths are there?

Question No- 5

Write a detailed description of Haqiqih and Hukmi in Najasa

Question No- 6

How many obligations of Tayammum are there? Write in detail.

Question No- 7

Write the meaning of Ayatul Kursi.