International Islamic University Chittagong
Center for General Education (CGED)
Final Examination, Spring-2022

Course Code: UREL -1106 **Course Title: Advanced English**
Time: 2 Hours and 30 Minutes **Full Marks: 50(Written: 40+Speaking-5 +listening-5)**

Reading Part-20

Read the following passage and answer the questions that follow.

To many people, especially working people, co-operation means the Co-operative Movement. This movement was started by working people for the benefit of working people. It began in Rochdale, an industrial town in the North of England, in 1844. In that year a group of people who were employed in the factories of Rochdale decided that they would open a shop. This may not perhaps be considered a very original decision, or one that could be important for anybody except the people who took it. It was, however, of worldwide importance, though nobody could have guessed this at the time. The decision was, in fact, original in one very important detail, namely that it was taken by people who were to be the customers as well as the owners of the shop. A small sum of money was contributed by each member of the scheme. None of them was able to contribute much, but the total of their contributions was sufficient to pay for the premises of the shop and for the goods which were needed to stock it. The profit which was made by the sale of the goods to members was used to buy more goods, and any money left over after these goods had been bought was divided out amongst the members. In this way they were able to buy necessary goods at reasonable prices and also to share in the profit from their own enterprise. The main principles which were adopted by the Rochdale co-operators when they opened their shop were:

1. Open membership. Anyone living in the Rochdale area was allowed to join.

2. Democratic control (one member, one vote).

3. Distribution of surplus income amongst members, once all other expenses had been paid.

4. Political and religious neutrality.

5. Trading for cash only. Members had to pay for their purchases before they could take them away from the shop.

6. Encouragement of education.

These principles have been recognized throughout the world as the basis of a genuine co-operative movement. From its humble beginnings in Rochdale the movement has spread to many countries. Local Co-operative Societies have been founded for trading throughout Britain, and a central organization, the Co-operative Wholesale Society, manufactures a wide variety of goods which member Societies can buy from it to sell in their shops. It also acts as a link between them and helps them to co-operate nationally as well as locally. The International Co-operative Alliance has also been founded to make this co-operation possible amongst members of the movement with similar principles all over the world, in any country where such societies have been or will be founded. Movement in Britain, and societies have been founded abroad for all sorts of purposes from simple trading and running shops to hiring farm machinery to members who cannot afford to buy their own; and Marketing Societies have been recognized as the best way for producers of food and other crops to sell their produce.

1. **Answer the questions with your own sentence** **1x3=3**
   a. Why did the working people of Rochdale decide to open their own shop?
   b. What other purposes did the Rochdale Co-operative have besides trading?
   c. For what special purposes do farmers set up Co-operative Societies?
2. **Find words in the passage that can complete these sentences** **1x3=3**
   a. The owners of the shop were also its------
   b. The members -----in the profits from trading.
   c. The------of the Co-operative Movement have been accepted in many countries.
3. **Answer the question as directed** **0.5x8=4**
   a. Producers of food and other crops have founded Marketing Co-operatives. (make it passive voice)

b. Water has to be brought to dry places by canals------ are built for this purpose. (fill in the gaps with relative word)
c. Survive (give a noun of this word)
d. During a thought the crop will die if it is not watered.(rewrite it in plural)
e. Remaining alter expenses have been paid. (give an adjective for this phrase)
f. The Co-operative Movement exists -----the benefit of its members.(fill in the blanks with a preposition)
g. They opened the store to sell goods at reasonable prices. (make a question for the underlined portion)

Read the following passage and answer the questions that follow

Much of today's business is conducted across international borders, and while the majority of the global business community might share the use of English as a common language, the nuances and expectations of business communication might differ greatly from culture to culture. A lack of understanding of the cultural norms and practices of our business acquaintances can result in unfair judgements, misunderstandings and breakdowns in communication. Here are three basic areas of differences in the business etiquette around the world that could help stand you in good stead when you next find yourself working with someone from a different culture.

Addressing someone

When discussing this topic in a training course, a German trainee and a British trainee got into a hot debate about whether it was appropriate for someone with a doctorate to use the corresponding title on their business card. The British trainee maintained that anyone who wasn't a medical doctor expecting to be addressed as 'Dr' was disgustingly pompous and full of themselves. The German trainee, however, argued that the hard work and years of education put into earning that PhD should give them full rights to expect to be addressed as 'Dr'. This stark difference in opinion over something that could be conceived as minor and thus easily overlooked goes to show that we often attach meaning to even the most mundane practices. When things that we are used to are done differently, it could spark the strongest reactions in us. While many Continental Europeans and Latin Americans prefer to be addressed with a title, for example Mr or Ms and their surname when meeting someone in a business context for the first time, Americans, and increasingly the British, now tend to prefer using their first names. The best thing to do is to listen and observe how your conversation partner addresses you and, if you are still unsure, do not be afraid to ask them how they would like to be addressed.

Smiling

A famous Russian proverb states that 'a smile without reason is a sign of idiocy' and a so-called 'smile of respect' is seen as insincere and often regarded with suspicion in Russia. Yet in countries like the United States, Australia and Britain, smiling is often interpreted as a sign of openness, friendship and respect, and is frequently used to break the ice. In a piece of research done on smiles across cultures, the researchers found that smiling individuals were considered more intelligent than non-smiling people in countries such as Germany, Switzerland, China and Malaysia. However, in countries like Russia, Japan, South Korea and Iran, pictures of smiling faces were rated as less intelligent than the non-smiling ones. Meanwhile, in countries like India, Argentina and the Maldives, smiling was associated with dishonesty.

4. **Write true or false.** **1x3=3**
   a. To the German trainee, having a PhD is equivalent to being a medical doctor.
   b. Sometimes, the smallest things can trigger a huge emotional response in us, especially when they are things we are not used to.
   c. In the research done on the perceptions of smiles, people from different countries were asked to rate photos of smiling faces and non-smiling ones.
5. **Find expressions in the passage similar in meaning to these** **1x3=3**
   a. rules governing socially acceptable behavior
   b. an understanding of something that is not correct
   c. very often or many times

6. **Write four types of smiling position which signifies different meaning in different countries.** **4**

Grammar-10

7. **Answer the questions as directed** **1x10=10**

a. Had you renewed your viva in time, you_____ (not/fall) in such problem.(Complete it as a conditional sentence)

b. Living expenses in this country as well as many other countries (is/are) at an all-time high. (Choose the verb that agrees with the subject.)

c. Form a WH-question with modal auxiliary showing **obligation.**

d. Make a sentence with phrase preposition '*in place of*

e. If water is boiled at 100 degree Celsius, it _____ (become) vapour. (Complete the sentence)

f. Give an example of present perfect continuous beginning with '*How long...*___'

g. Neither you nor your brothers (be) suitable for this job. (Use verb 'be' in suitable form)

h. A compound sentence consists of two or more (subordinate /principal/coordinate) clauses. (Choose the best answer from the options)

i. Both clauses of Zero conditional sentence are in(present simple/past simple/future simple).(Choose the best answer from the options)

j. The number of the students who have withdrawn from the class this quarter (is/are) appalling.(Show suitable verb)

Writing-10

8. *It is said that only poor drainage system is responsible for water logging in Chattogram city.* Do you agree with this statement? Explain your position with arguments. **5**

9. Suppose you want to buy a laptop. Now write a letter to the manager of sales of Computer Village, 42 Sheikh Mujib Road, Agrabad, Chattogram requesting him to send some latest models. **5**

International Islamic University Chittagong
Centre for General Education (CGED)
Final Examination, Spring -2022
Course Code: UREM-1101 (URTE-1101 for Civil Eng.)
Course Title: Text of Ethics and Morality

Marks: 50 **Duration: 2.5 hours**

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

1. Answer the questions below:
   a. What did Allah (SWT) said about interest (*ar-Ribaa*)?
   b. Who are *Maharim*? Write the rules of Hijab.

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

3. If you advise your family members to develop their character for abiding in *Jannatul Ferdaus*. What are your advices for them in order to achieve this goal? Explain them according to the *Ayats* (1-11) of '*Suratul Muminun*' and the *Ayats (63-74) of Suratul-Furqaan.*

4. "*O you who believe (in the Oneness of Allah/ Islamic Monotheism)! Eat of the lawful things that I have provided you*". Explain the Ayat mentioning some foods of your society which are unlawful for the Muslims according to the above text.

5. Mention five topics of your syllabus that directly focuses on ethical life.

6. Find out some unethical activities of your society and then explain them according to Islamic directions.

7. Write shot notes on the following topics:
   a. The names of directions in Arabic.
   b. The signs of '*ism.*

International Islamic University Chittagong
Morality Development Program (MDP)
Semester End Examination, Spring -2022
Course Code: MDP-1101
Title: Tajweedul Qur'an: I

Marks: 50 **Duration: 2 hours**

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

Question No- 1

What is Madd? Write the signs and types of Madd with example.

Question No- 2

Explain Madd-e-Tabai, Madd-e-Badal and Madd Muttassil with example.

Question No- 3

Write the meaning of any two surahs below:

a) Suratul kawsar
b) SuratunNas'r
c) Suratul Kaaferoon

Question No- 4

What is Taharah? How many types of taharah are there? Explain the importance of Taharah(Cleanliness) in Islam.

Question No- 5

What are the obligations of Gusol ? When is Gusol compulsory?

Question No- 6

Write down the difference between Wudhu and Tayammum and the fard duties of both. What are the reasons of breaking Wudhu?

Question No- 7

Explain the difference between rulings in NajaasatHukmi & NajaasatHakiki

International Islamic University Chittagong

Department of Computer Science and Engineering

B. Sc. in CSE Final Assessment, Spring 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.]

		CO	DL
1.			
a)	What will be the output of the following program?	1	CO2 U

```
int main()
{
      int i,j;
      for(i = 0; i < 3; i++)
            for(j = 2; j >= 0; j--)
                  printf("%d %d\n", i, j);
      return 0;
}
```

b)	What will be the output of the following code if **a** = 8 and **n** = 30? How the output will be changed if the **continue** statement is replaced with a **break** statement?	2	CO2 U

```
sum = 0;
for (i = a; i <= n; i = i+3)
{
      if (i % 5 == 0)
      {
            sum = 0;
            continue;
      }
      sum = sum + i;
      printf("sum = %d\n", sum);
}
```

c)	Write code for printing the following pattern for any input **N**. The given pattern is for **N** = 3.	3	CO2 A

```
*
**
***
**
*
```

d)	You will be given some positive integer inputs followed by a negative value. You have to print the sum of the given positive inputs except the ones which are divided by 3 or 5. You have to calculate their average also. Write a C program for this by using *break* statement after getting the negative input and *continue* statement if the input is divided by 3 or 5.	4	CO2 A
	Or,		
	A **prime number** (or a **prime**) is a natural number greater than 1 that is not a product of two smaller natural numbers. Write a C program that will read a positive integer **N** and determine whether **n** is *prime* or not.		CO2 A

2.

a) Write the first line of a function definition, including the formal argument declarations, for each of the situations described below: — 1 — CO3 — U

i) A function called *process* that accepts an integer and two floating point quantities (in that order) and returns a double precision quantity.

ii) A function called drawCircle that accepts two integer parameters followed by a double precision value and returns nothing.

b) What will be the output of the following programs? Explain the outputs with all the calculations. — 4 — CO3 — U

i)

```
#include<stdio.h>
int x = 30;
int fun1( )
{  x = x + 15;   return x; }

int fun2( )
{  int x = 20;   return x; }

int fun3( )
{  x = x - 10;   return x; }
int main( )
{
   int x = 5;
   printf("x = %d\n", x);
   printf("x = %d\n", fun1( ));
   printf("x = %d\n", fun2( ));
   printf("x = %d\n", fun3( ));
   return 0;
}
```

ii)

```
#include<stdio.h>
int x,q=1;
void ctg(int x)
{
    static int j=1;
    x*=j;
    printf("x = %d\n",x);
    j++;
}
int main()
{
    int i;
    for(i=2; i<=5; i++)
    {
        ctg(i*i+q);
        q++;
    }
    return 0;
}
```

c) Consider the code fragment written in C below: — 2 — CO3 — N

```
void rec(int n)
{
  if (n == 0)
    return;

  printf("%d", n%2);
  rec(n/2);
}
```

What does **rec (2X)** print? Explain.
[Here X is the last digit of your ID. If ID is C191085, 2X will be 25].

d) Write a function called **multiple** that determines for a pair of integers whether the second integer is a multiple of the first. The function should take two integer arguments and return 1 (true) if the second is a multiple of the first, and 0 (false) otherwise. Demonstrate your function in a complete program. — 3 — CO3 — N

Or,

Write a function that takes a positive integer and returns the summation of all the **factors** (Excluding the 1 and the number itself) of that number. Demonstrate your function in a complete program. For example, if the input number is **10** then the output is 7. — CO3 — N

3.

a) Declare an array of size **20** and initialize it with the digits of your ID. Next, write a C code segment to find the cumulative sum of the array of numbers and store those numbers in the same array. For example, if your ID is **C143256 then** the array contains **{1,4,3,2,5,6}** initially then after execution of your program it will contain **{1,5, 8, 10, 15,21}**. — **2 CO3 A**

b) You will be given a matrix of **5×5** dimension and an integer **Q**. Find the sum of the Q-th row and Q-th column. — **3 CO3 A**

Sample Input

```
1 2 3 4 5
7 8 4 5 6
9 8 7 6 5
5 4 3 2 1
1 3 5 7 9
3
```

Sample Output

```
Row Sum = 35
Col Sum = 22
```

Or, — **CO3 A**

Write a program that will print the sum of two diagonals of an **n × n** integer matrix.

c) Write output of the following C program. — **2 CO3 U**

```
#include<stdio.h>
#include<string.h>
int main()
{
   char s1[8]="IIUC", s2[8]="CSE",s3[8]="1121";
   printf("%d\n",strlen(s1));
   printf("%s\n",strcpy(s1,s2));
   printf("%s\n",strcat(s2,s3));
   printf("%s\n",strrev(s2));
   return 0;
}
```

d) Write code to determine whether all characters of a string are identical. — **3 CO3 N**

Sample Input	**Sample Output**
Aaaaa	**Not identical**
ZZZZZZZ	**Identical**
XYZ	**Not identical**
X1Y2	**Not identical**

Or, — **CO3 N**

Let's talk about a coding scheme. In this scheme, every person will have an alphanumeric code assigned against his/her name. Each code will have 4 (four) alphanumeric characters. First two characters denotes his/her age (00 - 99). Third character denotes whether the person pays any tax or not (T for paying tax, N for not paying). Fourth character denotes whether the person owns any land or not (L for owning a land, N for not owning a land). Given a code, you have to output the appropriate information.

Sample Input	**Sample Output**
43TN	**Age = 43, Taxpayer, Not a Landowner**
27NL	**Age = 27, Not a Taxpayer, Landowner**

4. a) Suppose you want to declare a pointer and allocate some space for it. You write the following code:

```
char *p;
*p = malloc(10);
```

What's wrong with this code? Explain & correct the code. 1 CO3 N

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. 2 CO3 U

b) A C program contains the following statements. 3 CO3 U

```
int i, j = 25;
int *pi, *pj = &j;
*pj = j + 5;
i = *pj + 10;
pi = pj;
*pi = i + j;
```

Suppose each integer quantity occupies 4 bytes of memory. If the value assigned to i begins at (hexadecimal) address **60FEF4** and the value assigned to j begins at address **60FEF0**, then

i) What value is represented by **&i, &j, pi**?

ii) What value is assigned to **pj, *pj, i**?

d) Create a structure **Player** that contains the fields. 4 CO3 U

name – a string of size 24

country – a string of size 16

runs – an integer

average – a double precision floating point number

Declare an array of **Player** and input 10 players' data in it.

Print the **name** of the player who has the highest **average**

Or, Enter the marks of **N** students in CT-1 and CT-2 using a **structure** named **CT** having elements **Id no., name, ct1_marks**, and **ct2_marks** and then display the **maximum marks** of each student CO3 U

Sample Input	**Sample Output**
2	**10**
C213212 Samiha 8 10	**7**
C213210 Ramisa 7 5	

5. a) What is the purpose of the library function **feof**? 1 CO3 U

b) Write a C program that will read the content of a file named **copy.txt** and write this content in reverse order in another file named **clone.txt.** 4 CO3 U

Or, Write a C program to open a file and write 10 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. CO3 U

c) Suppose **X** and **Y** are unsigned **16**-bit integer quantity whose hexadecimal value is **0xA9B4** and **0XC1D3** respectively. Evaluate each of the bitwise expression: 3 CO3 U

i) X&Y ii) X|Y iii) X^Y iv) ~X v) X<<4 vi) Y>>8

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

i)

```
#include<stdio.h>
#define MULTI(x,y) x*y
int main()
{
    printf("%d ",MULTI(2+3,3+5));
    return 0;
}
```

ii)

```
#include<stdio.h>
#define cube(x) x*x*x
int main()
{   int x = 36/cube(6);
    printf("%d", x);
    return 0;
}
```

International Islamic University Chittagong

Department of Computer Science and Engineering

B. Sc. in CSE

Final Exam, Spring-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

Course Outcomes (COs) of the Questions	
CO1	**Explain** the basic concepts and laws of electric circuits and different type of signals.
CO2	**Solve** the electrical networks using nodal and mesh analysis techniques.
CO3	**Compute** the impedance, resonance and complex power of sinusoidal circuits.
CO4	**Analyze** the transient response of RL, RC and RLC circuits.

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) Write the equation for the following signals. CO1 U 5

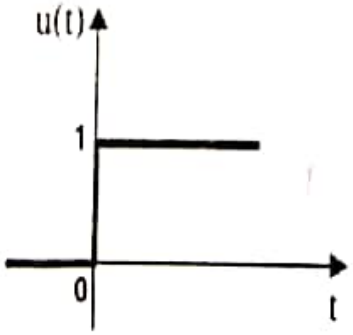


Figure 1(a)

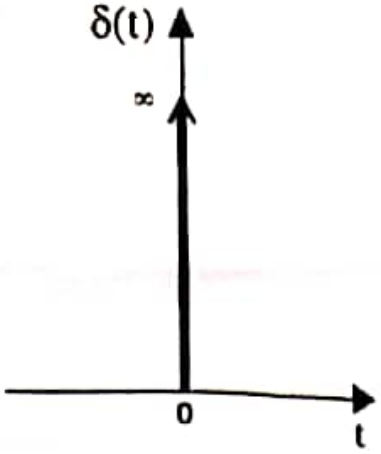


Figure 1 (b)

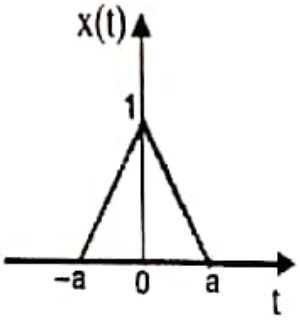


Figure 1 (c)

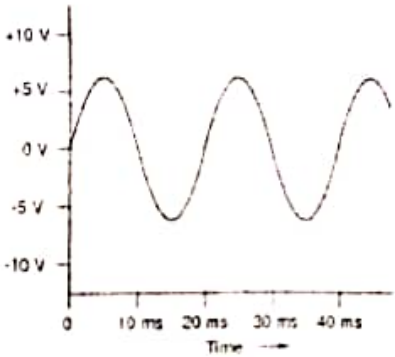


Figure 1 (d)

Or,

1 a) An alternating voltage given by V = 140 sin 314 t is connected across a pure resistor of 50 Ω. Find (i) the frequency of the source., (ii) the rms current through the resistor. CO1 U 5

Draw the curve of the following function:

$$V_k u(t - T_s) = \begin{cases} 0 & \text{for } T_s < 0 \\ V_k & \text{for } T_s \geq 0 \end{cases}$$

1. b) Determine the RMS value of the current waveform in Fig. 2. If the CO1 App 5

current is passed through a 2 Ω resistor, find the average power absorbed by the resistor.

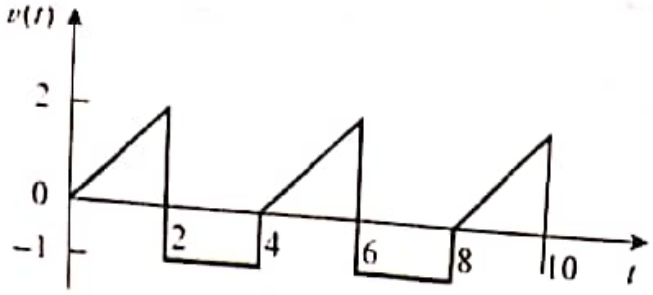


Figure 2

2. a) What does mean by instantaneous value, avarage value and RMS value of AC current or voltage. CO1 U 5

Determine the average value of the following waveform.

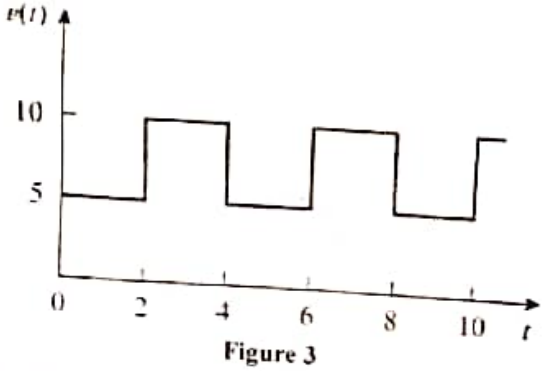


Figure 3

2. b) Compute the input impedance of the circuit in Fig. 4. Assume that the circuit operates at ω = 50 rad/s. CO3 App 5

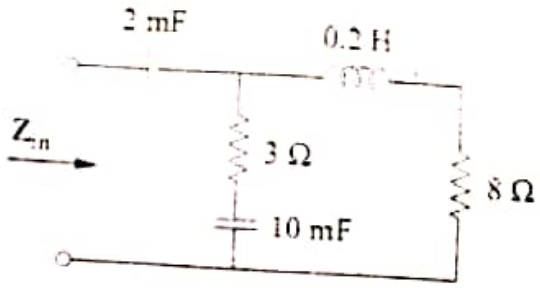


Figure 4

Or,

2 b) For the circuit shown in Fig-5, find the followings- CO3 App 5
Take V_i= 220 cos(377t+10), R=12 Ω, C= -j6 Ω.
(a) the average power supplied by the Source
(b) the power factor
(c) the apparent power
(d) the complex power & reactive power

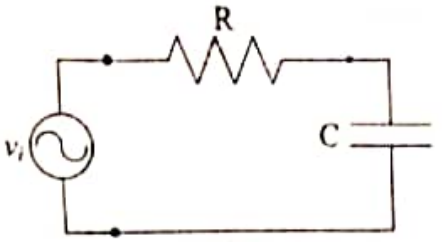


Fig-5

Part B

[Answer the questions from the followings]

3. a) Find i_x in the circuit of Fig. 5 using nodal analysis. CO2 App 5

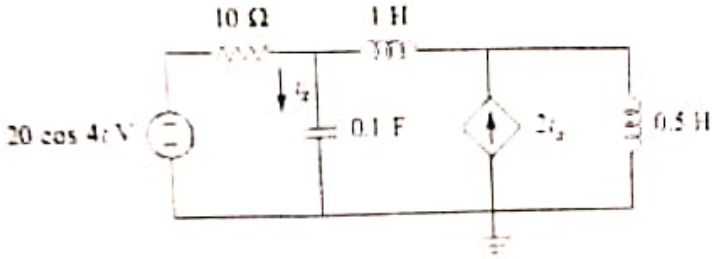


Figure 5

3. b) For the following pairs of voltages and currents, determine whether the element involved is a capacitor, an inductor or a resistor and find the value of them. (here, XX=Last two digits of your ID) CO3 App 5

   a. v= 60 sin (315t + 15)
      i = XX sin (315t - 75)
   b. v= XX sin (315t -25)
      i = 5 sin (315t - 25)
   c. v= 48 sin 377t + 117
      i = XX sin (377t + 207)

4. a) Illustrate a High-pass filter using R and L, also find the transfer function and corner frequency. CO4 An 5

4. b) Design a band-pass filter of the form in Fig.7 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 App 5

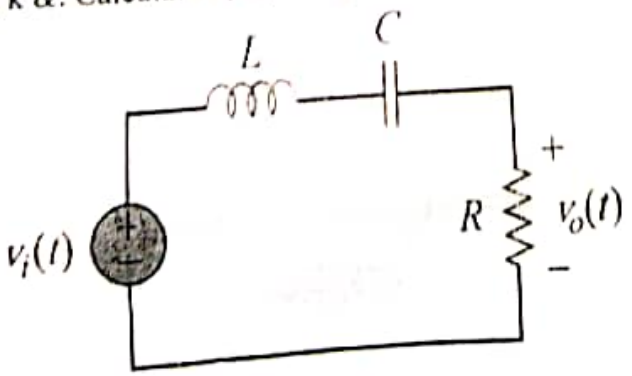


Figure 6

5. a) Calculate the line currents in the three-wire Y-Y system of Fig. 8. CO4 App 5

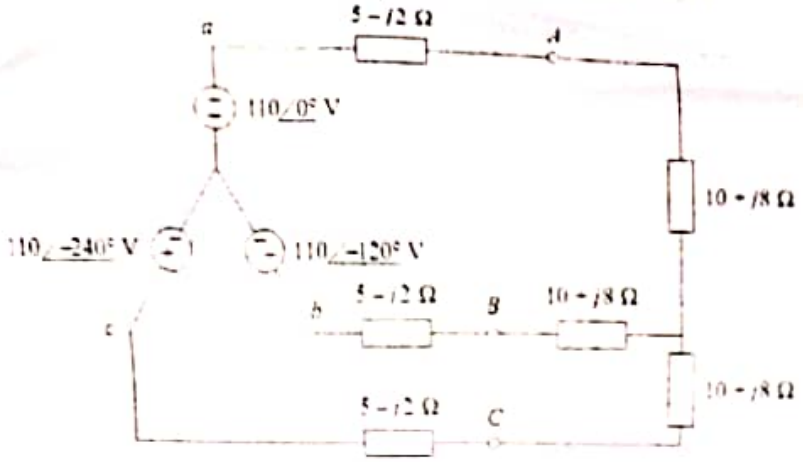


Figure 7

5. b) A positive-sequence, balanced Δ-connected source supplies a balanced Δ-connected load. If the impedance per phase of the load is 18+j12 Ω and $I_a = 22.5 < 35^\circ$ A, find I_{AB} and V_{AB}. CO4 App 5

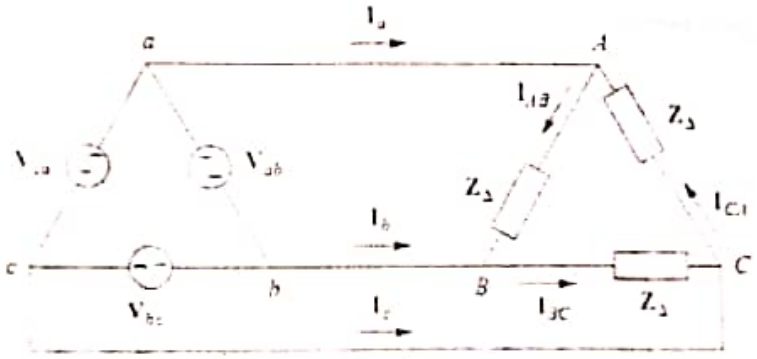


Figure 8

Or,

5. a) Determine V_o in the circuit of Fig-10 CO4 App 5

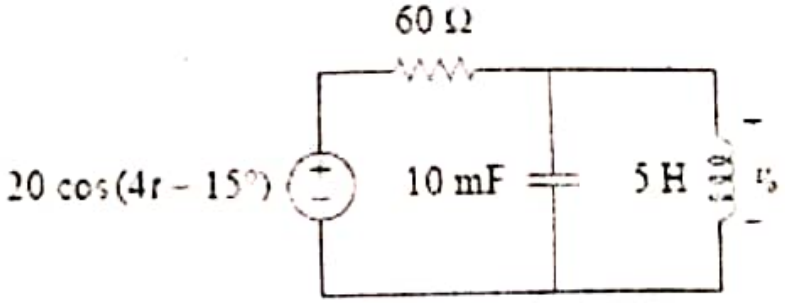


Fig-10

5. b) Qari Abdul-Rahman Al-Sudais recites Quran in the frequency range of 750Hz to 800Hz. Design a filter to record his recitation. Filter should have the ability to cut any sound under 750Hz and above 800Hz. Show the equation of cut-off frequency and necessary diagrams in favor of your answer. CO4 App 5

International Islamic University Chittagong (IIUC)
Department of Computer Science and Engineering (CSE)
B. Sc. in CSE, Semester Final Examination, Spring-2022
Course Code: MATH-1107, Course Title: Mathematics-I

Time: 2 hours & 30 minutes **Marks: 50**

(Answer all questions. Figures in the right margin indicates full marks)

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

Group – A

Answer the following questions

			Marks	CO	DL
1.	a)	If $Z = x^2 tan^{-1}(\frac{y}{x}) - y^2 tan^{-1}(\frac{x}{y})$ show that $\frac{\partial^2 z}{\partial y\, \partial x} = \frac{x^2-y^2}{x^2+y^2}$	5	CO1	C2
		Or			
		If $u = \sin^{-1}\frac{x+y}{\sqrt{x}+\sqrt{y}}$ then using Euler's theorem on homogeneous function show that, $$x\frac{\partial u}{\partial x} + y\frac{\partial u}{\partial y} = \frac{\tan u}{2}$$	5		
	b)	Discuss critical point and saddle point. For the function $f(x, y) = 4x^2 + 9y^2 + 8x - 36y + 24$, find the critical points and classify them as minima, maxima, or saddle points	5	CO1	C2
2.	a)	Evaluate the Integral, $\int \frac{2x+3}{3x^2-x+1}\, dx$	5	CO2	C2
		Or			
		Evaluate the Integral, $\int \frac{dx}{(2x+3)\sqrt{x^2+3x+2}}$	5		
	b)	(i) Evaluate the followings: $\int tan^{-1}x\, dx$	2	CO2	C2
		ii) Evaluate the followings: $\int x^2 sinx\, dx$	3	CO2	C2

Group – B

Answer the following questions

3.	a)	Evaluate the Integral, $\int_0^1 x^2\,dx$ by geometrically.	5	CO2	C2
	b)	Find the Reduction formula for $\int cos^n x\,dx$ where n is a positive integer.	5	CO2	C2
		Or			
		Evaluate the Integral, $\int_0^{\pi/2} \frac{(\sin x)^2}{(\sin x)^2+(\cos x)^2}\,dx$			
4.	a)	Evaluate the triple integral, $I = \int_1^3 \int_2^4 \int_0^2 (2xyz + 3y^2z + 5)\,dz\,dy\,dx$	5	CO2	C2
	b)	Define Gamma and Beta function. Prove that, $\Gamma\left(\frac{1}{2}\right) = \sqrt{\pi}$	5	CO2	C2
		Or			
		If $\beta(m,n) = 2\int_0^{\frac{\pi}{2}} sin^{2m-1}\theta\, cos^{2n-1}\theta\,d\theta$ then evaluate the values of $\beta(a, b+1)$			
5.	a)	Find the circumference of the circle, $x^2 + y^2 = 25$ about the x-axis.	5	CO3	C3
	b)	Find the volume generated by the areas bounded by the curve $x = y^7$ from $x = 0$ to $x = 7$about the x-axis.	5	CO3	C3

International Islamic University Chittagong

Department of Computer Science and Engineering

B. Sc. in CSE

Final Exam, Spring 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 Outcomes (COs) of the Questions	
CO1	Understand some fundamental laws and theorem of physics.
CO2	Apply mathematical knowledge to formulate and solve 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)	Distinguish between the longitudinal and transverse wave?	CO1	U	2
1.	b)	With a neat diagram, show that the number of beats is equal to the frequency differences.	CO1	R	5
		Or,			
1	b)	Develop the relation of the mathematical form of beats and write the condition of loud and soft beats.	CO1	C	5
1.	c)	A person is standing on a platform. An engine while approaching the platform blows a whistle of pitch 660 hertz. The speed of the engine is 72 Km/hr. velocity of sound 350m/s^{-2}. Calculate the apparent pitch of the whistle as heard by the person.	CO2	An	3
2.	a)	Why all periodic motions are not simple harmonic motion?	CO1	U	2
		Or,			
2	a)	Distinguish between the damped and forced oscillation?	CO1	U	2
2.	b)	"The total energy of the simple harmonic motion is proportional to the square of the amplitude" Justify the statement	CO1	E	5
2.	c)	A particle performs simple harmonic motion given by the equation, $y = 22 \sin[\omega t+\alpha]$. If the time period is 32s and the particle has a displacement of 15cm at t=0, find epoch; the phase angle at t = 5s; and the phase difference between two positions of the particle 13s apart.	CO2	An	3
		Or,			
2	c)	The tuning fork A of frequency 384 Hz gives 6 beats per second when sounded with another tuning fork B. On loading B with a little wax, the number of beats per second becomes 4. What is the frequency of B.	CO2	An	3

Part B

[Answer the questions from the followings]

3.	a)	What is the basic difference between isothermal graph and adiabatic graph?	CO1	U	2
3.	b)	"Molar specific heat of gas at constant pressure is always smaller than molar specific heat of gas at constant volume". Judge the statement and write your comment on that statement.	CO1	E	5
		Or,			
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's engine working between 1270C and 270C.	CO2	An	3
4.	a)	What is interference of light? State the fundamental conditions for the interference.	CO1	R	3
4.	b)	From Young's double slit experiment: show that the width of the bright and dark fringes is the same.	CO1	C	5
		Or,			
4.	b)	Explain and derive the intensity of diffraction pattern by single slit.	CO1	C	5
4.	c)	A plano-convex lens of radius 300cm is place on an optically flat glass plate and is illuminated by a monochromatic light. The diameter of the 8^{th} dark ring in the reflected system is 0.72cm. Calculate the wavelength of light used.	CO2	An	2
5.	a)	Distinguish between two types of diffraction of light.	CO1	U	2
5.	b)	"The refracted and the reflected (polarized) rays are perpendicular to each other" Justify the statement	CO1	E	5
5.	c)	An unpolarized light is incident at an angle equal to the polarizing angle on glass surface. For a refractive index 1.54, what is the value of polarizing angle?	CO2	An	3

BismillahirRahmanir Rahim

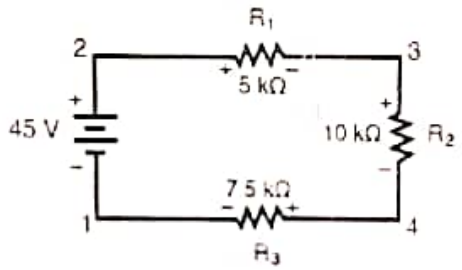
International Islamic University Chittagong

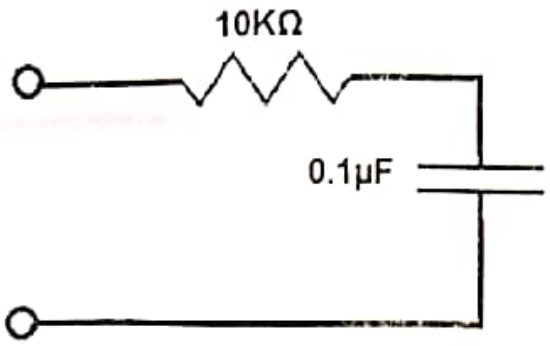
Department of Computer Science & Engineering

B. Sc. in CSE Lab Quiz Examination, Spring-2022

Course Code:EEE- 1122 Course Title: Basic Electrical Engineering Sessional

Total marks: *20* Time: **40 minutes**

			CO	DL
1.	Name the experiments that you have done in this sessional course.	2	CO1	C2
2.	Solve the following circuit to find voltage across R_2 using KVL. 	2	CO1	C3
3.	Determine whether the statement is true or false. Give the true statement in case of false. I. Function generators is used to view various signals. II. RC circuit provides a pure square wave. III. Y-axis divisions of oscilloscope refers to the voltage level of waves. IV. Equivalent resistance can be measured directly with multimeter meter.	4	CO1	C2
4.	Write a short note on- I. DC Power Supply II. Multimeter	4	CO1	C2
5.	Fill in the gaps with your own words - I. Oscilloscope can measure	4	CO1	C2

	II. A trainer board usually contain …… III. Bread board is used to …….. IV. Cut-off frequency refers to…..			
6.	Determine the value of cut off frequencyfor following filter-  	2	CO1	C3
7.	Choose the best possible answer- I. Ohm's law makes relationship between- a. capacitance, voltage & current b. Resistance, voltage & current c. Inductance, voltage & current II. Charging capacitor gives a. Flat line b. Rising curve c. Decay curve III. Thevenin's theorem replaces a. Linear circuit b. Non-linear circuit c. Higher order circuit IV. Signal generator can generator signal under a. 100 Hz b. 1M Hz c. Both of the answer	2	CO1	C2