

**ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)**  
**ORGANISATION OF ISLAMIC COOPERATION (OIC)**  
**DEPARTMENT OF NATURAL SCIENCES**

**Semester Midterm Examination**  
**Course Number: PHY 4141**  
**Course Title: Physics I**

**Winter Semester: 2023-2024**  
**Full Marks: 120**  
**Time: 2 Hours**

Answer all **4 (Four)** questions. Figures in the right margin indicate full marks of questions whereas corresponding CO and PO are written within parentheses

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- 1. (a)** Define inertial and non-inertial frame of reference. Write down the postulates of the special theory of relativity. (3 + 3)  
(CO1) (PO1)
- (b)** (i) Draw the neat diagram of Michelson-Morley experimental setup to understand the configuration of mirrors, light paths, and the direction of the ether drift. (6 + 6 + 6)  
(CO2) (PO2)
- (ii) Assuming Newtonian mechanics, find an expression for the time difference between the light beam traveling horizontally (parallel to the hypothesized ether wind) and the light beam traveling vertically (perpendicular to the ether wind.)
- (iii) This time difference would lead to a phase difference between the beams, producing an interference fringe pattern when the beams are combined at the telescope. Michelson-Morley compared the fringe pattern before and after rotating the interferometer by 90° so the two beams exchange roles to isolate the effect of the ether. Show that the net time difference in this case is twice what you have determined in (ii).
- (c)** Using the information from (iii) and taking: arm length:  $l = 11 \text{ m}$ , speed of the earth through the ether:  $v = 30 \times 10^3 \text{ m/s}$  (the speed of the earth moving around the sun) and wavelength of light  $\lambda = 500 \text{ nm}$ . Determine the fringe shift Michelson-Morley expected to see in their experiment. 6  
(CO3) (PO2)
- 2. (a)** Explain briefly the wave particle duality and photoelectric effect. (3 + 3)  
(CO1) (PO1)
- (b)** The Compton effect, discovered by Arthur Holly Compton, is the elastic scattering of a photon by a charged particle, usually called an electron. Consider a photon of energy  $E = hv$  and momentum  $p = hv/c$  scattering a stationary electron (energy,  $E = mc^2$  and momentum,  $p = 0$ ). After they scattered, photon has energy  $E' = hv'$  and momentum  $p' = hv'/c$  makes an angle  $\theta$  with  $p = hv/c$ . The recoil electron has energy,  $E = \sqrt{p'^2 c^2 + m_0^2 c^4}$  and momentum  $p$ .  
(i) Using conservation of energy and momentum, find an expression for  $\Delta\lambda = \lambda' - \lambda$ , the so called Compton formula.  $\lambda_C \equiv \frac{h}{m_0 c}$  is called the Compton wavelength and (ii) Compute its value for electron and proton.  
(12 + 3 + 3)  
(CO2) (PO2)
- (c)** An X-ray photon of initial frequency  $3 \times 10^{19} \text{ Hz}$  collides with an electron and is scattered through 90°. Determine the wavelength and frequency of the scattered photon. (3 + 3)  
(CO3)

- 3. (a)** Describe briefly: (i) mass defect, (ii) nuclear binding energy, and (iii) nuclear binding energy per nucleon? (2 + 2 +2)  
 (CO1)  
 (PO1)
- (b)** Explain Rutherford-Soddy law of radioactive decay. Obtain the relation  $N(t) = N_0 e^{-\lambda t}$  for sample of radioactive material having disintegration constant,  $\lambda$ , where  $N$  is the number of nuclei present at constant  $\lambda$ . Hence find the expression for the mean-life of radioactive nuclei. (2 + 7 + 8)  
 (CO2)  
 (PO2)
- (c)** Calculate the energy released in MeV in the following reaction:  $^{238}_{92}U \rightarrow ^{234}_{90}Th + ^4_2He + Q$  [Given: Mass of  $^{238}_{92}U$  = 238.05079 amu, mass of  $^{234}_{90}Th$  = 234.043630 amu, mass of  $^4_2He$  = 4.002600 amu and 1amu = 931.5 MeV/c<sup>2</sup>]. 6  
 (CO3)  
 (PO2)
- 4. (a)** Define electric flux and its unit. (3 + 3)  
 (CO1)  
 (PO1)
- (b)** Find the formula for electric field intensity due to a uniformly charged spherical shell at the point: (i) outside the shell, (ii) at the surface, and (iii) inside the shell. (18)  
 (CO2)  
 (PO1)
- (c)** Calculate the electric flux coming out through a surface  $\vec{S} = 10\hat{j}$  (m<sup>2</sup>) kept in an electrostatic field  $\vec{E} = 2\hat{i} + 4\hat{j} + 7\hat{k}$  (N/C). 6  
 (CO3)  
 (PO2)

ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)  
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DEPARTMENT OF NATURAL SCIENCES

Mid Semester Examination

Course Number: Math 4141

Course Title: Geometry and Differential Calculus

Winter Semester: 2023 - 2024

Full Marks: 160

Time: 2 Hours

**Programmable calculators are not allowed. Do not write anything on the question paper.**Answer all 4 (Four) questions. Marks of each question and corresponding CO and PO are written in the right margin with brackets.

1. (a) (i). A piecewise function  $f$  be defined as follows:

[15]

$$f(x) = \begin{cases} \frac{1}{x+2}; & x < -2 \\ x^2 - 5; & -2 < x \leq 3 \\ \sqrt{x+13}; & x > 3 \end{cases}$$
(CO1)  
(PO1)

Find  $\lim_{x \rightarrow -2} f(x)$ ,  $\lim_{x \rightarrow 0} f(x)$ , and  $\lim_{x \rightarrow 3} f(x)$ .

- (ii). Find the values of the constants  $k$  and  $m$ , if possible, that will make the function  $f$  continuous everywhere.

$$f(x) = \begin{cases} x^2 + 5; & x > 2 \\ m(x+1) + k; & -1 < x \leq 2 \\ 2x^3 + x + 7; & x \leq -1 \end{cases}$$

- (b) (i). Find  $f'(x)$ , if  $f(x) = \left(\frac{1}{x} + \frac{1}{x^2}\right)(3x^3 + 27)$  using product rule.

[15]

(CO2)

- (ii). Find  $g'(x)$ , if  $g(x) = \frac{x^3 + 2x^2 - 1}{x + 5}$  using quotient rule.

(PO1)

- (iii). Find  $\frac{dy}{dx}$ , if  $y = (1 + x^5 \cot x)^{-8}$  using chain rule.

- (c) During the first 40s of a rocket flight, the rocket is propelled straight up so that in  $t$  seconds it reaches a height of  $s = 0.3t^3$  feet. Then,

[10]

(CO2)

- (i). Find the height of the rocket travel in 40 seconds.

(PO2)

- (ii). Find the average velocity of the rocket during the first 40 seconds.

- (iii). Find the average velocity of the rocket during the first 1000 feet of its flight.

- (iv). Find the instantaneous velocity of the rocket at the end of 40 seconds.

2. (a) (i). Write down the statement of Leibnitz's Theorem. [25]  
(ii). If  $y = a \cos(\ln x) + b \sin(\ln x)$ , then show that  
 $x^2 y_{n+2} + (2n+1)xy_{n+1} + (n^2 + 1)y_n = 0$ .  
(iii). If  $y = x^{2^n}$ , then show that  $y_n = 2^n \{1.3.5.\dots(2n-1)\} x^n$ , where  $n \in \mathbb{N}$
- (b) Use implicit differentiation technique to find  $\frac{dy}{dx}$  for a Trisectrix represented by  $y^3 + yx^2 + x^2 - 3y^2 = 0$  Find an equation for the tangent line to the Trisectrix, mentioned above, at the point  $(0,3)$ . [7]  
(CO2)  
(PO1)
- (c) A baseball diamond is a square whose sides are 27 m long. Suppose that a player running from second base to third base has a speed of 9 m/s at the instant when he is 6 m from third base. At what rate is the player's distance from home plate changing at that instant? [8]  
(CO2)  
(PO2)
3. (a) Transform the equation  $3x^2 + 2xy + 3y^2 - 18x - 22y + 50 = 0$  to one in which there is no term involving of  $x$ ,  $y$  and  $xy$  both sets of axes being rectangular. Hence, sketch the standard form of the equation. [15]  
(CO1)  
(PO1)
- (b) Prove that the equation  $2x^2 - 7xy + 3y^2 + x + 7y - 6 = 0$  represents a pair of straight lines. Hence, Find [25]  
(CO2)  
(PO2)  
(i). the angle between the straight lines.  
(ii). the equation of the bisectors of the lines.  
(iii). Also, sketch the pair of straight lines and its bisectors.
4. (a) (i). Reduce the equation  $f(x,y) \equiv x^2 + 12xy - 4y^2 - 6x + 4y + 9 = 0$  to its standard form and find all its properties. [25]  
(CO2)  
(PO2)  
(ii). Sketch the curve of the equation.
- (b) Find the co-ordinates of the limiting point of the co-axial system determined by the circles  $x^2 + y^2 + 4x + 2y + 5 = 0$  and  $x^2 + y^2 + 2x + 4y + 7 = 0$ . [15]  
(CO1)  
(PO1)

\*\*\*The End\*\*\*

**ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)**  
**ORGANISATION OF ISLAMIC COOPERATION (OIC)**  
**Department of Computer Science and Engineering (CSE)**

**MID SEMESTER EXAMINATION**  
**DURATION: 2 HOURS**

**WINTER SEMESTER, 2023-2024**  
**FULL MARKS: 120**

**CSE 4107: Structured Programming I**

**Programmable calculators are not allowed. Do not write anything on the question paper.**

**Answer all 4 (four) questions. Figures in the right margin indicate full marks of questions with corresponding COs and POs in parentheses.**

1. a) Write a program that reads a simple mathematical equation involving one integer (`n1`), one character (`ch`), and another integer (`n2`). The program should perform an operation based on the character provided in the input. You must use switch-case to solve this problem. 10  
(CO1)  
(PO1)

- If `ch` is '+', then print `n1 + n2`
- If `ch` is '-', then print `n1 - n2`
- If `ch` is '/', then print `n1 / n2`
- If `ch` is '\*', then print `n1 * n2`
- For any other value of `ch`, the program should print "Invalid Operation".

A few sample input-output pairs are given in Table 1.

**Table 1:** Sample input-output pairs for Question 1.a

Sample Input	Expected Output
7 / 2	3.50
7 # 2	Invalid Operation

- b) You are asked to write a program that continuously reads integer values from the user until the user inputs zero (0). The program should then print the difference between the largest and smallest numbers entered by the user (excluding the terminating 0). 7  
(CO2)  
(PO1)

The code provided in Code Snippet 1 is an attempt to solve the problem, but it contains logical and syntactic errors. Make the minimum necessary corrections to this code so that it works as intended.

```

1 #include <stdio.h>
2 #include <limits.h>
3 #include <math.h>
4 int main() {
5     int i, j, max=INT_MAX, min=INT_MIN, n;
6     while(1) {
7         scanf("%d", &n);
8         if(n>max)
9             n = max;
10        else if(n<min)
11            n = min;
12
13        if(!n) break;
14        printf("Difference is: %d", max-min);
15    }
16    return 0;
17 }
```

**Code Snippet 1:** An erroneous solution for the problem posed in Question 1.b

- c) Determine the output of the code provided in Code Snippet 2.

5  
(CO1)  
(PO1)

```

1 #include <stdio.h>
2 int main(void){
3     int i=2;
4     int ar1[] = {2,1,3};
5     int ar2[5] = {4,5,6};
6     int ar3[5] = {[3]=7};
7     printf("%d\n",ar1[i++]);
8     printf("%d\n",++ar1[i]);
9     printf("%d\n",ar2[i++]);
10    printf("%d\n",ar3[++i]);
11    return 0;
12 }
```

**Code Snippet 2:** C program for Question 1.c

2. a) Write a program that reads an integer,  $i$  ( $1 \leq i \leq 20$ ) as an input (indicating size) and prints the pattern as illustrated in Table 2 based on the size.

15  
(CO3)  
(PO1)

**Table 2:** Sample input-output pairs for Question 2.a

Sample Input	Sample Output
3	1 2 3 4 6 7 8
4	1 2 3 4 5 7 9 10 11 12

- b) A grayscale image can be represented in memory as a 2D grid of pixel values, where each pixel has a value between 0 and 255. A value of 0 represents absolute black, and 255 represents absolute white. A pixel is considered corrupted if its value is less than 0 or greater than 255. First take the input of row ( $r$ ) and column ( $c$ ) as dimension. Then take the input of the pixel values of an image with  $r \times c$  pixels. After taking the input, your task is to count the total number of corrupted pixels and identify the locations of the corrupted pixels. The location of the top left pixel is (0,0). An example with  $4 \times 4$  image is provided in Table 3.

15  
(CO3)  
(PO1)

**Table 3:** Sample input-output for Question 2.b

Sample Input	Sample Output
4 4 13 -25 62 25 145 255 137 87 28 98 138 41 163 144 425 125	Corrupted pixel locations: (0 , 1) (3 , 2) Total corrupted pixels: 2

- c) For the problem described, in Question 2.b, is it possible to print the number of corrupted pixels before the corrupted pixel location information, given that you can read the input only once? If your answer is no, then justify your answer otherwise discuss the changes required from your previous solution.

8  
(CO3)  
(PO2)

3. a) In the Mid Semester examination, different questions carry varying marks and require different amounts of time to answer. Assume three arrays `marks []`, `time []`, and `question []` (each of size 100) are used to store following three information:

15  
(CO3)  
(PO1)

- `marks []`: Marks allocated to each question
- `time []`: Time required to answer each question (in minutes)
- `question []`: The corresponding question numbers

You will answer a question if it carries more than 5 marks or it can be answered in 15 minutes or less.

Write a C program that reads these three information from the user and prints the question numbers that will be selected for answering.

- b) Copy-paste is a very common operation in digital document editing. When you copy something, it saves the selected content into a clipboard, and when you paste, the clipboard's contents are placed in the desired location. If you perform the copy operation again, the previous content of the clipboard is overwritten by the latest content.

15  
(CO3)  
(PO2)

Assume a system, where the copy operation will save the character from a specified index of a character array provided in the Table 4, and the paste operation displays the character to the monitor.

**Table 4:** Character array for Question 3.b

H	E	L	L	O	W	O	R	L	D
---	---	---	---	---	---	---	---	---	---

Write a C program, that reads a sequence of operations as input, and display the desired output. Each line of the input starts with an uppercase letter.

- Letter 'C' indicates a copy operation, followed by an integer (the array index from where the character should be copied).
- Letter 'P' indicates the paste operation (displays the clipboard's contents).
- Letter 'E' indicates the end of the input.

A sample input-output pair is given in Table 5.

**Table 5:** Sample input-output for Question 3.b

Sample Input	Sample Output
C 7	ERROR
C 1	
P	
C 8	
P	
P	
C 7	
P	
C 8	
P	
E	

4. a) Write a program that reads an integer number (as a single integer, not individual digits separately) from the user and finds the difference with its reverse number. A number's reverse can be obtained by writing its digits in the opposite order. For example: reverse of 452 would be 254.

15  
(CO3)  
(PO1)

A few sample input-output pairs are given in Table 6.

**Table 6:** Sample input-output pairs for Question 4.a

Sample Input	Sample Output
452	198
121	0
21	9

- b) Determine the output of the code provided in Code Snippet 3, if you assign the value of the variable ID as the last 2 digits of your student ID.

10  
(CO1)  
(PO1)

```

1 #include <stdio.h>
2 int main(void){
3     int i, j, k, n=5, ID=??;
4     char ch = 'X';
5     k = ID%2;
6     for(i = 0; i<n; i++){
7         for(j=n-i; j>0 & !k; j--)
8             printf("#");
9         for(j=0; j<=2*i & !k; j++)
10            printf("%c",ch+k);
11         for(j=0; j<i & k; j++)
12             printf("#");
13         for(j=2*(n-i)-1; j>0 & k; j--)
14            printf("%c",ch+k);
15         printf("\n");
16     }
17     return 0;
18 }
```

**Code Snippet 3:** C program for Question 4.b

- c) For each of the following data types, provide a real-world example of information that would be the best suited for storing:

5

- int
- float
- double
- char
- character array

**ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)**  
**ORGANISATION OF ISLAMIC COOPERATION (OIC)**  
**Department of Computer Science and Engineering (CSE)**

**MID SEMESTER EXAMINATION**  
**DURATION: 2 HOURS**

**WINTER SEMESTER, 2023-2024**  
**FULL MARKS: 120**

**CSE 4105: Computing for Engineers**

**Programmable calculators are not allowed. Do not write anything on the question paper.**

**Answer all 4 (four) questions. Figures in the right margin indicate full marks of questions with corresponding COs and POs in parentheses.**

1. a) Answer the followings in brief: 2 × 5  
(CO1)  
(PO1)
- i. Why is computer called general purpose tool?
  - ii. What is a malware? Can operating system itself be a malware? If yes, give an example.
  - iii. What are the principal characteristics of a memory to be the main memory in computer?  
Why are those characteristics necessary?
  - iv. Sometimes SSDs are used as RAM in embedded devices; How does it match with the required characteristics of main memory?
  - v. What is the purpose of masking in QR code?
- b) Suppose you bought a programmable washing machine that allows commands in assembly language mentioned in table 1: 10  
(CO3)  
(PO2)

**Table 1:** Commands in assembly for Question 1.b

```
washMode 1/2/3 [1= mild, 2= normal, 3= clean)
wash t [t=5-20, in minutes)
water N [N=1-7, in levels)
drain
dry t [t =1-5, in minutes)
loop [ goes to first line]
loopIfLess N [ goes to first line if the system counter is less than N]
incrC [increments system counter, when the program starts the
counter is by default 0]
```

Machine code for corresponding commands are as follows

**Table 2:** Hex for Question 1.b

washMode	AA
wash	AB
water	AC
drain	DA
dry	DB
loop	CC
loopIfLess	CA
incrC	FF

Write an assembly code using Table 1, that will wash and dry the cloths twice in normal mode. First, wash the clothes for 6 minutes in water level 5 and dry for 1 minute. Second, wash for 4 minutes in same water level and dry for 3 minutes.

Convert the assembly code to corresponding Hex Code. A Hex Code is actually a binary code, each byte presented as a hexadecimal number.

- c) Definition and realization of Pixel is the fundamental issue in any display technology. How is a Pixel defined in CRT, LCD, and LED technologies? 10
2. a) How is a memory bit realized on Hard Disk, CD, Blue Ray? Why are they called Block memories? Explain comprehensively. 3 + 7
- b) Answer the followings very briefly: 1 × 10  
 i. Why is location itself called an information instead of data? (CO1)  
 ii. How do information get converted to Knowledge? (PO1)  
 iii. How can interference in the wired medium be detected?  
 iv. Why do we use twisted pair cable for network communication?  
 v. Why are there two extra pair of cables in twisted pair?  
 vi. How does computer get an IP address automatically?  
 vii. What is a Socket in client-server network architecture?  
 viii. Why do well known servers need to have defined port number?  
 ix. How do clients connect to a server that is not well known or may have used an arbitrary port number?  
 x. Why does Google sometimes assume us as robot/bot when we search something from within IUT?
- c) How is a URL resolved to IP address when we browse the internet? If we put a URL of non-existing domain in the browser, what sequences of activities will be performed? Explain with an example. 5 + 5  
 (CO1)  
 (PO1)
3. a) Why are there square like shapes in three corners in QR code? Is it likely that there will be squares in fourth corner also? How do you read a QR code? 2 +  
 2 + 6
- b) Write an algorithm to convert a decimal number D to a base B number system. 10
- c) 'A prime number is divisible only by 1 and itself' — practically to detect a prime number the inverse of the statement is performed. What is the inverse statement? Write an algorithm to detect a number N to be prime according to the inverse statement. Then show two ways to improve the algorithm. 10  
 (CO2)  
 (PO2)
4. a) Answer the followings very briefly: 1 × 5  
 (CO1)  
 (PO1)  
 i. How many bits make a kilo byte?  
 ii. What is a 2's complement number system.  
 iii. A memory bit in SSD is by default 1, why?  
 iv. How is an SSD memory bit programmed to 0?  
 v. Why do we use IDE? Is it a compiler?
- b) Briefly describe the role of the linker in compiler technology. 5  
 (CO1)  
 (PO1)
- c) Processes are sometimes bigger than executables (exe), how does that happen? Does *dlls* have any role to play in the process size? 4  
 (CO1)  
 (PO1)
- d) Perform the following 2's complement arithmetic assuming 4-bit computer system. Also indicate whether the arithmetic is correct or not. 6  
 (CO1)  
 (PO1)  
 i. 6 - 3  
 ii. -4 - 5  
 iii. -4 - 4
- e) Briefly describe Blue LED technology. 10  
 (CO1)  
 (PO1)

**Name of the Program:** B.Sc. Eng. (CSE) 1<sup>st</sup> yr. 1<sup>st</sup> Sem  
**Semester:** Winter

**Date:** 1<sup>st</sup> November 2024 (Friday)  
**Time:** 10:30am – 12:30pm (*Morning*)

**ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)**  
**ORGANISATION OF ISLAMIC COOPERATION (OIC)**  
**DEPARTMENT OF TECHNICAL AND VOCATIONAL EDUCATION (TVE)**

**Mid Examination**

**Winter Semester: 2023 - 2024**

**Course Number:** HUM 4147

**Full Marks: 120**

**Course Title:** Technology, Environment, and Society

**Time: 2hrs(120minutes)**

There are 4 (four) questions. Answer (ALL). The symbols have their usual meaning.

1.
  - a) Mention the earth system's components and explain an ecosystem's functions. (15) CO1 PO7
  - b) Uncontrolled population growth is an environmental concern. What is your opinion? Explain with logical reasoning. (15)
  
2.
  - a) What are the major pollutants of air? Explain the negative effects of deforestation on the environment. (15) CO2 PO7
  - b) Differentiate between Weather and Climate. Explain the seven theories of climate change. (15)
  
3.
  - a) Mention the types of biodiversity and explain the major causes of Biodiversity Loss in an environment. (15) CO1 PO7
  - b) Explain the process of ozone layer depletion with chemical equations and mention the impacts of ozone layer depletion on human health and ecology. (15) CO2
  
4.
  - a) What do we mean by Urban Heat Island? Describe the effects of Urbanization. (15) CO1 PO7
  - b) Explain the formation of acid rain with chemical equations. What are the environmental treaties on ozone-depleting substances(ODS)? (15) CO2

**Program:** B.Sc C.S.E & S.W.E 1<sup>st</sup> Semester  
**Semester:** Winter

**Date:** October 24, 2024 (Thursday)  
**Time:** 10:30 a.m. – 12:30 p.m.

**ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)**  
ORGANISATION OF ISLAMIC COOPERATION (OIC)  
**DEPARTMENT OF TECHNICAL AND VOCATIONAL EDUCATION (TVE)**

**Examination :** Mid Semester Examination  
**Course Number:** Hum 4145  
**Course Title:** Islamiyat

**Academic Year:** 2023 – 2024  
**Full Marks:** 80  
**Duration:** 2.00 hours.

There are 4 (Four) questions. Answer them all. The symbols have their usual meaning.

1. a. Differentiate Between رَبْ and إِلَهٌ? Why you cannot Replace the Word “رب” with the word الحمد لله رب العالمين in إِلَهٌ and you cannot Replace the Word “إِلَهٌ” with the word “رب” in لا إِلَهَ إِلَّا اللهُ رَبُّ? Shade some light based on the Concept of Tawheed in Islam. 10 CO3 PO8
1. b. “Seeking engineering knowledge is an Ibadah.” Explain it based on the Comprehensiveness of the Concept of Ibadah in Islam with references from the Quran, Sunnah, and Dr. Martin Luther King’s saying: “Intelligence plus Character—that is the Goal of true Education.” 10 CO2 PO7
2. a. Conceptualize the concept of Zero and One - The Binary System (01010101- 0s and 1s are used to represent data) according to the Understanding of Nullifier in Islam. 10 CO3 PO8
2. b. Illustrate the elements that should be avoided in Tawhidul Asma Was Sifat with their Arabic names. 10 CO2 PO8
3. a. Define Trinity. Write down five popular Nullifiers of Eeman that exist in your surroundings. 10 CO3 PO8
3. b. Define Ibadah with References Mentioning the Qualities of Allah’s servants you see in yourself with references from the holy Quran. 10 CO1 PO8
4. a. Write Short Notes on:
  - A. Al Wala Wal Bara
  - B. True Magic and False Magic
  - C. Fardh ul Ayn, Fardh Khifayah
  - D. استدراج - Istidraz
  - E. Unifying Faiths (Sabeans- الدين الحنيف- Buhaira Raheb)10 CO1 PO8
4. b. Write Short Notes on:
  - A. Nafs Khabisah, Nafs Lawwamah, Nafs Mutmainnah
  - B. Al-Qadaa’ Wal Qadar
  - C. Yaqeen
  - D. T’aa\_ghoot
  - E. Tawassul -The Greatest Savior- التَّوَسُّلُ إِلَيْهِ أَعْظَمُ