

**QUAID-E-AWAM UNIVERSITY OF ENGINEERING, SCIENCE & TECHNOLOGY, NAWABSHAH**  
**MID-SEMESTER EXAMINATION OF FIRST SEMESTER - FIRST YEAR (I<sup>st</sup> SEMESTER) 2022-21 BATCH**  
**DEPARTMENT OF ARTIFICIAL INTELLIGENCE**  
**SUBJECT: INTRODUCTION TO ICT**

**Dated: 14.02.2022**

**Maximum Marks: 20**

**Time Allowed: 01 Hour.**

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

**Q. 01 (a) What are the advantages and disadvantages of computer? Differentiate between data and information.**

**(b) What are the different categories of computers according to size and working principle?**

**Q. 02 (a) What is primary memory and why it is necessary for a computer to operate? Define different types of Read Only Memory (ROM).**

**(b) Define the following terms:**

**i) Hacker ii) Cyber extortionist iii) Virus iv) Worm v) Trojan Horse**

**Q. 03 (a) What is a web browser? Define different types of services through which a computer can be connected to the internet.**

**(b) Perform the following conversion:**

**i.  $(\text{Your Roll No.} + 300)_{10} = ( ? )_2$**

**ii.  $(\text{Your Roll No.} + 200)_{10} = ( ? )_8$**

**iii.  $(11010011)_2 = ( ? )_{10}$**

**The End**



Q #	Question	Max. Marks
01. a)	How do computers solve a problem? Compare the levels of abstractions of programming computers and mention the tools used to convert from one level to another level of abstraction e.g., from high-level to assembly language code.	(05)
b)	What are the basic data types available in Python? How does the type conversion work? Provide programming examples to convert and print type of the basic data types.	(05)
02. a)	Provide examples using Python syntax to initialize and print a string variable using the print function. Given two string variables s1 and s2, how to check whether they are equal?	(03)
b)	Write a program that inputs two strings using the input function. The program then checks whether (1) both strings start with a capital letter, (2) the first two characters of both strings are same, and (3) Both strings have at least 5 characters. <i>Hint: use s.upper() function to convert to upper case and len(s) to find the length</i>	(07)
03. a)	What output is printed by the following Python code? <pre>s="ASCII" if (s[-1].upper()==s[len(s)-1] and len(s)&gt;=5):     print(s[-2:]) else:     print(s[:])</pre>	(03)
b)	Write a program in Python that inputs two integers (x and y). The program will print the sum of x and y if the right most digit of either x or y is odd. If the right most digits of both numbers are not odd, the program just prints the two numbers as they are. <i>Hint: The modulus operator (%) can be used to get the right most digit.</i>	(07)

**Good Luck**

**QUAID-E-AWAM UNIVERSITY OF ENGINEERING, SCIENCE & TECHNOLOGY, HAWABDH**

**MID-SEMESTER EXAMINATION OF FIRST SEMESTER – FIRST YEAR (1<sup>st</sup> SEMESTER) 2022, 21 BATCH, D.E.U**

**SUBJECT CALCULUS & ANALYTICAL GEOMETRY**

**ated, 16.02.2022**

**Maximum Marks: 20**

**Time Allowed: 01 H**

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

**01 (a) Explain function and its types with example given below**

- (i) one to one function
- (ii) Onto function
- (iii) Modulus function
- (iv) Piecewise function

**(b) Discuss the example of the function related to the Artificial intelligence**

**02 (a) Find the domain and range of**

$$f(x) = \begin{cases} \sqrt{x-1} & , \text{if } x \leq 2 \\ x^2 - 1 & , \text{if } x > 2 \end{cases}$$

**(b) Define composite function. Find  $f \circ g$  and  $g \circ f$ , if  $f(x) = x^2 + e^x + \cos(x)$  and  $g(x) = \ln x$**

**03 (a) Discuss the even and odd function. Show that whether given function are even or odd**

(i)  $f(x) = \frac{(x^2+1)}{x^3+4x-21}$

(ii)  $g(x) = \frac{x^3-x}{|x|}$

**(b) Discuss the inverse function and explain with example whether every function is inverse function or not**

**Good Luck**

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

**MID-SEMESTER EXAMINATION OF FIRST SEMESTER – FIRST YEAR (1<sup>ST</sup> SEMESTER) 2022-21-BATCH B.S (AI/CS)**

**SUBJECT: ENGLISH COMPOSITION & COMPREHENSION**

**DATE: 18.02.2022**

**Maximum Marks: 20**

**Time Allowed: 01 Hour**

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

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- Q1 Write an Essay on any one of the following.
  - (A) My first day at university.
  - (B) My aim in life
  - (C) Education should be free
  
- Q2 What is the importance of punctuation in writing skills? Write short note on any four of following with valid example.
  - (a) Apostrophe
  - (b) Quotation Mark
  - (c) Comma
  - (d) Semicolon
  - (e) Question mark
  
- Q3 Why articles are essential in English language? Define any 5 uses of Definite and indefinite article with examples.

**Good Luck**



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

MID-SEMESTER EXAMINATION OF FIRST SEMESTER - FIRST YEAR (1<sup>st</sup> SEMESTER, 2022-21 BATCH)

DEPARTMENT OF A/E/S/TC/ESE/EE/CH/ENG/FET

SUBJECT ISLAMIC STUDIES / ETHICS

Dated: 15.02.2022

Maximum Marks: 10

Time Allowed: 45 Min

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

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### **ISLAMIC STUDIES (FOR MUSLIMS)**

- Q. 01 Write down Surah Hujrat related to the manners in the respect of Holy Prophet (S.A.W) and describe the actions which indicate the betterment for society.
- Q. 02 Describe the qualities of believers in the light of Surah Furqan.
- Q. 03 Write down the commandments of Surah Al-Ana'am and describe the qualities of believers in the light of Surah Al-Mominoon as well.

### **ETHICS (FOR NON-MUSLIMS)**

- Q. 01 Write down the life history of Gotham Buddha.
- Q. 02 Describe the value of Ethics in all religions.
- Q. 03 Write down about the religion Hinduism and describe its holy days.

**Good Luck**



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

- Q. 01 (a) With the help of a diagram, describe different steps of data / Information processing cycle. (06)
- (b) Perform the following conversions: (06)
- i)  $(182)_{10} = (?)_2$
  - ii)  $(11010010)_2 = (?)_{10}$
  - iii)  $(1919)_{10} = (?)_8$
- Q. 02 (a) Define the term "Software". Explain system and application software with the help of appropriate examples. (06)
- (b) Differentiate the following: (06)
- i) Compiler and Interpreter
  - ii) Source code and object code
  - iii) Algorithm and flow chart
- Q. 03 (a) What is a loop? Explain the sentinel and counter controlled loops. Describe different looping statements present in C language along with the prototypes. (06)
- (b) Write a program in C language which prints the following output on screen: (06)
- ```
*
**
***
****
****
***
**
*
```
- Q. 04 (a) What is an array? Explain with the help of appropriate examples that how single and multi dimensional array can be declared and initialized in C language? (06)
- (b) Write a program in C language which takes 10 numbers from user at run-time, stores the numbers in an array and sorts the array in descending order. (06)
- Q. 05 Describe the term "function" in C language. Describe different types of functions in C language. Explain why we need functions in C language? (06)
- (a) functions in C language. Explain why we need functions in C language? (06)
- (b) Write a program in C language which takes a number as an input from the user at run-time, passes the number to a function named *my\_function()*, the function prints whether the number is an even number or an odd number. (06)

*The End*

**ISLAMIC STUDIES (FOR MUSLIMS)**

| <b>Q. No.</b> | <b>QUESTION</b>                                                                                                                  | <b>CLOs</b> | <b>Taxonomy Level</b> | <b>PL</b> |
|---------------|----------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|-----------|
| <b>01</b>     | <b>Describe the importance of Tauheed and write all its types in detail.</b>                                                     | <b>1</b>    | <b>C1</b>             | <b>2</b>  |
| <b>02</b>     | <b>Write down in detail the importance of Honour of Holy Prophet (Namoos-e-Risalat) in the light of Quran.</b>                   | <b>1</b>    | <b>C1</b>             | <b>2</b>  |
| <b>03</b>     | <b>Describe the meaning and importance of Zakat. Write its prescribed amount (Nisaab) and deserving people of Zakat as well.</b> | <b>2</b>    | <b>C2</b>             | <b>2</b>  |

**ETHICS (FOR NON-MUSLIMS)**

| <b>Q. No.</b> | <b>QUESTION</b>                                                                                                                                       | <b>CLOs</b> | <b>Taxonomy Level</b> | <b>PL</b> |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|-----------|
| <b>01</b>     | <b>Write down the history of Hinduism and describe all its festivals.</b>                                                                             | <b>1</b>    | <b>C1</b>             | <b>2</b>  |
| <b>02</b>     | <b>Write down the life history of Jesus Christ and describe the teachings of Christianity.</b>                                                        | <b>1</b>    | <b>C1</b>             | <b>2</b>  |
| <b>03</b>     | <b>Write short notes on the following:<br/>1. Ethical teachings of Islam<br/>2. Ten Commandments of Prophet Moses<br/>3. Caste System in Hinduism</b> | <b>1</b>    | <b>C1</b>             | <b>2</b>  |



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

| Q. No.   | QUESTION                                                                                                                                                                                                                                                                                                                                               | CLOs | Taxonomy Level | PLOs | Marks |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------------|------|-------|
| Q-01 (a) | Define the order, degree, linearity and Homogeneity of differential equation.                                                                                                                                                                                                                                                                          | 2    | C1             | 2    | 06    |
| Q-01 (b) | Define the order and degree of each equation and determine whether the equation is linear or nonlinear.<br>1. $\frac{dy}{dx} = y \cos(x) = \sin x$ .<br>2. $\frac{d^2y}{dx^2} + xy \left(\frac{dy}{dx}\right)^2 = 0$ .<br>3. $\frac{dy}{dx} - \frac{y}{x} = 0$ .<br>4. $\frac{\partial^2 u}{\partial x^2} + u \frac{\partial u}{\partial x} + u = 0$ . | 2    | C1             | 2    | 06    |
| Q-02 (a) | Discuss whether function is continuous or not:<br>$f(x, y) = \begin{cases} \frac{2xy^2}{x^2+y^2}, & (x, y) \neq (0, 0) \\ 0, & (x, y) = (0, 0) \end{cases}$                                                                                                                                                                                            | 2    | C6             | 2    | 06    |
| Q-02 (b) | If $f(x, y) = e^x \sin y + e^y \sin x$ then show that<br>$\frac{\partial^2 f}{\partial x^2} + \frac{\partial^2 f}{\partial y^2} = 0$ .                                                                                                                                                                                                                 | 2    | C1             | 2    | 06    |
| Q-03 (a) | State the Rolle's theorem.                                                                                                                                                                                                                                                                                                                             | 2    | C2             | 2    | 06    |
| Q-03 (b) | Solve the differential equation by using Integrating factor<br>$\frac{dy}{dx} + 4y = 3xe^x$ .                                                                                                                                                                                                                                                          | 2    | C1             | 2    | 06    |
| Q-04 (a) | Explain why we check whether given function are dependent or not.                                                                                                                                                                                                                                                                                      | 3    | C2             | 3    | 06    |
| Q-04 (b) | Find whether given function are linearly dependent or independent:<br>1. $(\sin x, \cos x)$ 2. $(x, x^2, x^3)$ 3. $(e^x, 3e^{2x})$                                                                                                                                                                                                                     | 3    | C1             | 3    | 06    |
| Q-05     | The height $s$ (feet) of a rocket $t$ seconds after its launching is given by $s = -2t^3 + 114t^2 + 480t + 1$<br>i. Find the velocity of a rocket<br>ii. The velocity $t = 0$ after 20 sec                                                                                                                                                             | 3    | C1             | 3    | 12    |

$S = vt$

$v = \frac{S}{t}$

The End



SUBJECT: ENGLISH COMPOSITION & COMPREHENSION

dated: 27.05.2022

Maximum Marks: 60

Time Allowed: 31

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

| Q. No. | QUESTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | CLOs | Taxonomy Level | PLOs |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------------|------|
| 01     | <p>Read the story. Then answer the questions:</p> <p>Hans had served his master seven years, and at the end of the seventh year he said, "Master, my time is up; I want to go home and see my mother, so give me my wages." "You have served me faithfully," said the master; "As the service is, so must the wages be," and he gave him a lump of gold as big as his head. Hans pulled his handkerchief and tied up the lump of gold in it, hoisted it on his shoulder, and set off on his way home. And as he was trudging along, there came a man riding on a horse "Oh!" cried Hans aloud, "How splendid riding must be!" The horseman called out to him, "Hans, what are you doing on foot?" "I have this great lump to carry; it is gold, said Hans" "We will change; I will give you my horse, and you shall give me your lump of gold," said the horseman, "With all my heat," said Hans; and the horseman took the gold, and helping Hans up, he gave the reins into his hand and Hans, as he sat upon his horse, was glad at heart, and rode off. After a while the horse began to trot, and Hans was thrown lay in the ditch. The horse would have got away but he was caught by a peasant who was driving a cow. Hans got upon his feet. "Your cow is something worth having," Hans said, and one can jog on after her and have her milk, butter, and cheese every day. "Well now," said the peasant, "I don't mind exchanging my cow for your horse." Hans agreed and he went along driving his cow before him until he comes to the village where his mother lived it would be an hour's journey. And he feels so thirsty. "I will milk my cow at once," said Hans. But the cow gave him such a kick on the head that he fell to the ground. Luckily there came by a butcher who was wheeling a young pig in a wheelbarrow. "Here's a fine piece of work!" cried he, helping poor Hans on his legs again. "Just for love of you I will exchange, my pig instead of your cow." Said the butcher. Hans handing over the cow, received in exchange the pig, so on went Hans, thinking how everything turned out according to his wishes.</p> <p>Answer each question:</p> <ol style="list-style-type: none"> <li>1. How many years did Hans serve to his master? 7 years</li> <li>2. What did the master give him as his wages and why did he exchange it?</li> <li>3. How he fell from the horse and who did help him?</li> <li>4. What did Hans say about the cow?</li> <li>5. What the butcher said to him?</li> <li>6. How many exchanges did Hans do?</li> </ol> | 2    | C2             | 2    |
| 2      | Write a letter to the manager to complain about the meal you ate last night at the restaurant.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2    | C3             | 2    |
| 3      | Write a sick leave application to the Chairman of your department.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 2    | C3             | 2    |
| 4      | Compose the dialogue between two friends about covid-19. (Minimum 15 dialogues)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 2    | C2             | 2    |
| 5      | <p>Write a paragraph on any one of the following:</p> <ol style="list-style-type: none"> <li>1. My Devoted Friend</li> <li>2. My Favourite Subject</li> <li>3. Best Day In my Life</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 2    | C3             | 2    |

Good Luck