**COMSATS University Islamabad**

**Terminal Examination – Spring 2021**

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| **Course Title:** | Introduction to ICT | | | | **Course Code:** | | CSC101 | **Credit** Hours: | | 4(3,1) |
| **Instructors:** | Muhammad Farhan | | | | **Programme:** | | BCS | | | |
| **Semester:** | 1st | **Batch:** | SP21 | **Section:** | A,B | | **Date:** | |  | |
| **Time Allowed:** | **3 Hours** | | | | **Maximum Marks:** | | | | **50** | |
| **Student’s Name:** |  | | | | **Reg. No.** |  | | | | |
| **Important Instructions / Guidelines:**   * Any kind of plagiarism will result in 0 marks. Although plagiarism includes using references/literature over internet or slides, but the similar thought process behind answers, if reflected, would also lead to full marks deduction for each question. | | | | | | | | | | |

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| **Question No.** | **Q1** | **Q2** | **Q3** | **Q4** | **Q5** | **Total** |
| **Total Marks** | **25** | **10** | **15** | **10** | **10** | **70** |
| **Obtained Marks** |  |  |  |  |  |  |

**Question 1:** **Objectives [15 Points]**

Choose the best possible answer. Selecting more than one option and overwriting will lead you to get 0.

1. **MCQs [7]**
2. Serial arrangement in which things follow logical order, such as statements executing one after another, is called \_\_\_\_\_\_\_\_\_\_.
   1. Loop c. Sequence
   2. Condition d. Decision
3. How many (‘\*’) will be printed. Start value of i is 0

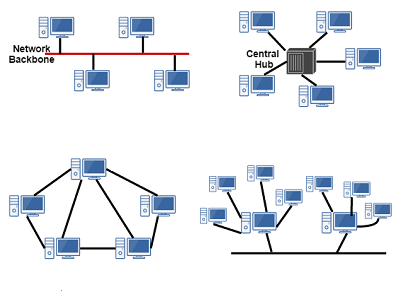
While ( i < 512)

Print \*

i = i \* 2

* 1. 10 c. 9
  2. 256 d. Infinite

1. A behavioral approach to determine if a computer is intelligent
   1. Tuning test
   2. Turing test
   3. Turning test
   4. None of the above
2. The type of connection in which a dedicated path over a network is established and all data flows that same path \_\_\_\_\_\_\_\_
   1. Circuit-switched c. Packet- switched
   2. Broadcast d. All of the above
3. Name the topologies used in the following networks

S

1. True or false

|  |  |  |
| --- | --- | --- |
| several if statements can be replaced by switch case block | **T** | **F** |

1. Which stage of SDLC produces class diagrams?
   1. System Design c. System Analysis
   2. System Implementation d. System Acquisition
2. A series of graphical images played in succession to stimulate movement is called Augmented Reality. [T/F]
3. Windows XP replaced Windows Vista. [T/F]
4. Software as a Service (SaaS) is
   1. Software service provider c. Cloud based software
   2. Service as a software d. Free of cost software
5. RDBMS stands for
   1. Rotational Data Business Model System c. Relational Database Management System
   2. Rotational Drive Bay Movement Storage d. both a and b
6. The 1’s complement is used for octal representation whereas 2’s complement is used with binary. [T/F]
7. HTML is used for creating
   1. user interfaces c. static webpages
   2. dynamic webpages d. database applications
8. Choose all the scripting languages
   1. SQL c. Java
   2. JavaScript d. Flash
9. The most commonly available and used flavor of UNIX is
   1. UNIX II c. LINUX
   2. Oracle d. None of the above

**Short Questions**

1. Give at least three examples of AI systems that you have seen around. [2]
2. Differentiate between Multi-threading and Multi- tasking. [2]
3. An information system calculates salaries of employees based on their attendance and performance. Which categories of information systems such a scheme may fall? Give reasons. [2]
4. Describe Buffering/Spooling in your own words. [2]
5. Give atleast three information facts about any three web based multimedia elements [2]

**Question 2: [10 Points]**

1. Convert the following number systems. Show your working at each step.**[8]**
   1. (11011)2 = ( )Octal
   2. (78B)16 = ( )2

* 1. (11101)2 = ( ) Hexadecimal
  2. (5627)8 = ( )16

**B.** Perform the following arithemetic

1. (531)8 + (702)8

2. (D9A)16 + (C8A)16

**C**. Use complementary arithmetic to perform the following subtraction

**i.** (1011)2- (1101)2

ii. (67)10 – (98)10

**Question 3:** Use pseudo code/flowchart/code to write algorithm for the following problem: **[15]**

A function in a program that keeps taking text input from user and returns the number of consonants in the text. It also prints the number of times each consonant appear in the text inputs until user enters “stop”

Example Output

Word: Terminal

Output: 5 [1 1 1 1 1]

Word: Exam

Output: 2 [1 1]

Word: Posession

Output: 5 [1 3 1]

**Question 4:** Write briefly in your own words about any three of the following, giving reasons and examples where necessary**. [10]**

i. Differences between various operating systems (atleast 3 differences)

ii. Transaction Processing Systems

iii. Geographical Information Systems

iv. Categories of software distribution

**Question 5:** Assume you want a robot which will help you, say, in laundary. Follow the SDLC stages as reference, and come up with the outcome of each stage. Exercise your imagination for the working guidelines to the robot**. [10 Points]**