



UNIVERSITY OF THE PUNJAB

Part – I A/2016
Examination:- B.A./B.Sc.
(Clash)

Roll No.

Subject: Computer Studies-I

TIME ALLOWED: 3 hrs.

PAPER: A (Introduction to IT and Computer Programming)

MAX. MARKS: 70

NOTE: Question # 1 in Part – I and Question # 5 in Part-II are compulsory. Attempt TWO of the remaining THREE questions in Part-I and Part-II.

Part-I (Introduction to Information Technology)

Max Marks: 35

QUESTION # 1 (Do all parts in this question)

[15 marks]

Write your answers on the answer sheet for the following 15 multiple choice questions (MCQs). You do not need to write the question statements. You are only required to write the part number (e.g. 1, 2, 3, etc.) and your selected answer letter (e.g. A or B or C or D) against it. In these MCQs only one option is correct. Cutting and/or overwriting should be avoided. You must provide answers to the questions in the sequence (from 1 to 15).

1. A collection of computers and devices connected together, often wirelessly, via communications devices and transmission media is called a _____.
 - A. workgroup
 - B. newsgroup
 - C. client
 - D. network
2. Electronic components of a system unit include the _____, memory, adapter cards, drive bays, and the power supply.
 - A. mouse
 - B. keyboard
 - C. processor

D. monitor

3. A _____ is an instruction that causes a program to perform a specific action.
- A. response
 - B. command
 - C. servlet
 - D. macro
4. Printed information, called _____, exists physically and is a more permanent form of output than that presented on a display device.
- A. backup
 - B. xerox copy
 - C. soft copy
 - D. hard copy
5. The process of transferring data, instructions, and information from a storage medium into memory is called _____.
- A. capacity
 - B. access time
 - C. reading
 - D. writing
6. A(n) _____ is one that runs the same on multiple operating systems.
- A. Cross-platform program
 - B. System software
 - C. Utility program
 - D. None of the above
7. The _____ network forms a closed loop with all computers and devices.
- A. Star
 - B. Basic
 - C. Ring
 - D. Bus
8. Some phones use _____, where you press one key on the keypad for each letter in a word and software on the phone predicts the word you want.
- A. text messaging
 - B. ergonomics
 - C. predictive text input
 - D. optical character recognition (OCR)

9. _____ is the speed with which data, instructions, and information transfer to and from a device.
- A. Access rate
 - B. Transfer rate
 - C. Response time
 - D. Access time
10. _____ describes a process in which two or more computers or devices transfer data, instructions, and information.
- A. Networking
 - B. Transmission
 - C. Communications
 - D. Global Positioning System
11. Which of the following memory has longest access time?
- A. Virtual Memory
 - B. RAM
 - C. Cache
 - D. Registers
12. Which of the following memory stores information to load operating system?
- A. Virtual Memory
 - B. RAM
 - C. ROM
 - D. None of these
13. The operating system manages _____.
- A. Users
 - B. Programs
 - C. Hard disk
 - D. (B) and (C)
14. In some tables, the primary key consists of multiple fields, called a _____.
- A. Composite key
 - B. Secondary key
 - C. Key field
 - D. Column
15. The amount of data, instructions, and information that can travel over a communications channel sometimes is called the _____.
- A. latency
 - B. bandwidth
 - C. transfer rate
 - D. response time

Attempt any TWO out of Question # 2, 3 and 4. All questions carry equal marks.

QUESTION # 2: [10 marks]

What is the purpose of a utility program? Write down the different types of utility programs.

QUESTION # 3: [10 marks]

Define the following terms:

- a. Device Driver
- b. Voice Recognition Software
- c. System Software
- d. Web Portal
- e. Virus program

QUESTION # 4: [10 marks]

What are the steps involved in the machine cycle to execute instructions?

Part-II (Computer Programming)

Max Marks: 35

QUESTION # 5 (Do all parts in this question) [15 marks]

Write your answers on the answer sheet for the following 15 statements. You do not need to write the question statements on answer sheet. You are only required to write the part number (e.g. 1, 2, 3, etc.) and your selected answer either True or False against it. Cutting and/or overwriting should be avoided. You must provide answers to the questions in the sequence (from 1 to 15).

1. The character & is the string concatenation operator.
2. The length of an identifier is limited up to 64 characters.
3. Integer is not a valid variable data type.
4. If the number of iterations are not known in advance, the suitable repetition structure is For—Next loop.
5. We use MsgBox function to display a message.
6. A memory location that changes during project execution is known as a variable.
7. It is not possible to write Boolean expressions that contain math, relational, and logical operators.
8. You can use the relational operators to compare strings.

9. An If – Then statement will not execute unless the conditionally executed statements are indented.
10. The Substring method returns an uppercase copy of a string.
11. If the user clicks an input box's Cancel button, the function returns the number –1.
12. A pretest loop always performs at least one iteration, even if the test expression is false from the start.
13. The For–Next loop is a posttest loop.
14. You may not use a named constant as a subscript in an array declaration.
15. Visual Basic allows you to use a variable as a subscript when processing an array with a loop.

Attempt any TWO out of Question # 6, 7 and 8. All questions carry equal marks.

QUESTION # 6:

[10 marks]

Write a program with a loop that lets the user enter a series of integers. The user should enter –99 to signal the end of the series. After all the numbers have been entered, the program should display the count of odd and even numbers entered.

QUESTION # 7:

[10 marks]

Write a program that calculates the average number of days a company's employees are absent. The program should have the following functions:

- A function that asks the user for the number of employees in the company. This value should be returned as an integer number. (The function accepts no arguments.)
- A function that accepts one argument: the number of employees in the company. The function should ask the user to enter the number of days each employee missed during the past year. The total of these days should be returned as an integer number.
- A function that takes two arguments: the number of employees in the company and the total number of days absent for all employees during the year. The function should return, as a real number value, the average number of days absent. (This function does not display anything on screen and does not ask the user for input.)

Input Validation: Do not accept a number less than 1 for the number of employees. Do not accept a negative number for the days any employee missed.

QUESTION # 8:

[10 marks]

In a program, write a function that accepts three arguments: an array, the size of the array, and a number n . Assume that the array contains integers. The function should display all of the numbers in the array that are greater than the number n .

Good Luck



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NOTE: Question # 1 in Part – I and Question # 5 in Part-II are compulsory. Attempt TWO of the remaining THREE questions in Part-I and Part-II.

PART – I (Introduction to Information Technology) Max. Marks. 35

Q. # 1: (Do all parts in this question.)

(15)

Write your answers on the answer sheet for the following 15 multiple choice questions (MCQs). You do not need to write the question statements. You are only required to write the part number (e.g. 1,2,3 etc.) and your selected answer letter (e.g. A or B or C or D) against it. In these MCQs only one option is correct. Cutting and / or overwriting should be avoided. You must provide answers to the questions in the sequence (from 1 to 15).

1. A scanner is a widely used _____.
A. System unit B. Input device C. Output device D. Processor
2. To use application software, your computer must be running a (n) _____.
A. Operating system B. Antivirus program C. Utility program D. Interpreter
3. The series of instructions that tells a computer what tasks to perform and how to perform them is called a _____.
A. Command B. Program C. User response D. Dialog box
4. The _____ defines a display's width relative to its height.
A. Dot pitch B. Contrast ratio C. Bit depth D. Aspect ratio
5. A storage medium, also called _____, is the physical material on which a computer keeps data, instructions, and information.
A. Secondary storage B. Firmware
C. Cloud storage D. Online storage
6. A _____ is communications device that connects multiple computers together and transmits data to its correct destination on a network.
A. Firewall B. Modem C. Router D. Multiplexer
7. An adapter card is sometimes called a (n) _____.
A. Expansion card B. Memory card C. Express card D. Smart card
8. The online business is known as _____.
A. Marketing B. Online business C. E-commerce D. E-Trading
9. The amount of data, instructions, and information that can travel over a communications channel is sometimes called the _____.
A. Latency B. Bandwidth C. Transfer rate D. Response time
10. The computing phrase _____ points out that the accuracy of a computer's output depends on the accuracy of the input.
A. Rubbish in, rubbish out (RIRO) B. Garbage in, Garbage out (GIGO)
C. Nonsense in, Nonsense out (NINO) D. Junk in, Junk out (JLJO)
11. Which of the following languages is directly understood by the computer?
A. Machine language B. Assembly language
C. Visual basic D. C language
12. All of the following are strengths of the database approach, except _____.
A. Less complexity B. Improved data integrity
C. Reduced development time D. Easier access
13. Which of the following memory needs refresh?
A. DRAM B. SRAM C. ROM D. All of these
14. A CPU that is following a series of steps to complete an instruction is using _____ technology.
A. Threading B. Cache C. Pipelining D. Multitasking
15. A _____ is the smallest unit of disk space that stores data and information.
A. Track B. Cluster C. Cylinder D. Pit

P.T.O.

Attempt any TWO out of Question # 2, 3 and 4. All questions carry equal marks.

- Q. # 2: What is meant by network topology? Explain the different types of network topologies? (10)
- Q. # 3: Differentiate between each of the following terms: (10)
- A. File and Folder
 - B. Virus and worm
 - C. Audio and video output
 - D. Volatile and nonvolatile memory
 - E. Application and system software
- Q. # 4: What is the purpose of storage medium in a computer system? Explain different kind of storage media. (10)

PART –II (Computer Programming) max. Marks. 35

- Q. # 5: (Do all parts in this question.) (15)
- Write your answers on the answer sheet for the following 15 statements. You do not need to write the question statements on answer sheet. You are only required to write the part number (e.g. 1,2,3, etc.) and your selected answer either **True** or **False** against it. Cutting and / or overwriting should be avoided. You **must** provide answers to the questions in the sequence (from 1 to 15)
1. Relational operators allow you to add numbers.
 2. If a declaration statement does not specify a data type, it is declared as Boolean.
 3. In Visual Basic, a text box is an example of a Control.
 4. Checking to verify that appropriate values have been entered for a text box is called validation.
 5. The default lower bound of an Array is 0.
 6. Integer is a valid data type in VB.
 7. It is not possible to write a Boolean expression that contains more than one logical operator.
 8. You may use the relational operators to compare strings.
 9. Clicking on a radio button selects it and leaves any other selected radio button in the same group selected as well.
 10. The Substring method returns a lowercase copy of a string.
 11. If you do not provide a value for an input box's title, an error will occur.
 12. Infinite loops keep repeating until the program is interrupted.
 13. The Do While loop may be written as either a pretest or posttest loop.
 14. The Step Increment part of the For – Next statement is optional.
 15. Numeric array elements are automatically initialized to – 1.

Attempt any TWO out of Question # 6, 7 and 8. All questions carry equal marks.

- Q. # 6: Write a program with a loop that lets the user enter a series of integers. The user should enter – 99 to signal the end of the series. After all the numbers have been entered, the program should display the largest and smallest numbers entered. (10)
- Q. # 7: A prime number is a number that is only evenly divisible by itself and 1. For example, the number 5 is prime because it can only be evenly divided by 1 and 5. The number 6, however, is not prime because it can be divided evenly by 1, 2, 3, and 6.
Write a function name isPrime, which takes an integer as an argument and returns true if the argument is a prime number, or false otherwise. Demonstrate the function in a complete program.
Use the isPrime function that you have already written, in a program that stores a list of all the prime numbers from 1 through 100 in a file. (10)
- Q. # 8: Write a program that asks the user to enter 20 numbers from a user and stores these numbers in an array. Your program should perform the following tasks: (10)
- Write a function that counts the positive numbers in the array.
 - Write a function that counts the even numbers in the array.
 - Write a function that calculates the average of the numbers in the array.