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First/Second Semester B.E. Degree Examination, January 2013
Computer Concepts and C Programming

Time: 3 hrs.

Max. Marks:100

Note: 1. Answer FIVE full questions choosing at least two from each part.**2. Answer all objective type questions only in OMR sheet page 5 of the Answer Booklet.****3. Answers to objective type questions on sheets other than OMR will not be valued.****PART - A**

- 1** a. Choose the correct answer : (04 Marks)
- Which of the following is not an input device.
(A) plotter (B) scanner (C) key board (D) mouse
 - Conversion of single program to M/C language is done by
(A) linker (B) compiler (C) editor (D) OS
 - Computer is controlled by _____
(A) Hardware (B) Software (C) Instructions (D) Statement
 - Computer converts data into _____
(A) Information (B) Charts (C) I/P, O/P (D) Software
- b. Explain the basic structures of a computer, with a neat diagram. (06 Marks)
- c. Explain the following input devices : i) Pen based input devices ii) Optical input devices. (06 Marks)
- d. Explain information processing cycle. (04 Marks)
- 2** a. Choose the correct answer : (04 Marks)
- DOS is an example of _____ interface.
(A) Command line (B) Check box (C) Graphical (D) Parallel
 - Email is a system for exchanging messages through a _____
(A) client (B) program (C) Network (D) back bone
 - Every webpage has a unique address, called a
(A) Hyperlink (B) URL (C) HTTP (D) www
 - In a _____ n/w all devices are connected to a hub
(A) bus (B) star (C) ring (D) mesh
- b. Define operating system. What are the functions of operating systems? (06 Marks)
- c. Explain the following storage devices : i) Hard disk ii) Compact disk. (06 Marks)
- d. Explain the characteristics of networks. (04 Marks)
- 3** a. Choose the correct answer : (04 Marks)
- 'C' is what kind of language?
(A) Machine (B) Procedural (C) Assembly (D) Object oriented programming.
 - The hexadecimal constant is preceded by :
(A) OX (B) O (C) HX (D) H
 - The number 025 is _____ number.
(A) Decimal (B) Octal (C) Hexa (D) Binary
 - The operator % yields
(A) Quotient (B) Percentage (C) Reminder (D) Fractional part
- b. Briefly explain how to create and run the program. (04 Marks)
- c. Explain 5 – types of data with its range value. (06 Marks)
- d. Explain formatted input and output functions. (06 Marks)
- 4** a. Choose the correct answer : (04 Marks)
- What is the size of character in bytes?
(A) 1 (B) 2 (C) 3 (D) 4
 - Puts is _____ function
(A) i/p (B) o/p (C) Input output (D) None
 - The conversion specifier _____ is used to represent string
(A) %d (B) %c (C) %f (D) %s
 - Keywords are _____
(A) Identifier (B) Reserved words (C) Variable (D) None
- b. What do you mean by type conversion? Explain explicit type conversion with examples. (04 Marks)
- c. Explain the following operators with examples : i) Conditional ii) Size of iii) Bitwise (06 Marks)

- d. Determine the value of each of the following logical expressions, where $a = 5$, $b = 10$ and $c = -6$.
 i) $a > b \ \&\& \ a > c$ ii) $b > 15 \ \&\& \ c < 0 \ || \ a > 0$ iii) $(a/2.0 == 0.0 \ \&\& \ b/2.0 != 0.0) \ || \ c < 0.0$.

(03 Marks)

PART - B

5. a. Choose the correct answer : (04 Marks)

- i) The default return type of a function is _____.
 (A) int (B) float (C) char (D) double
 ii) How many values returned by functions by default
 (A) ONE (B) TWO (C) THREE (D) FOUR
 iii) Which is not a variable storage class
 (A) Automatic (B) Extern (C) Static (D) Dynamic
 iv) Which keyword is used to declare external variable
 (A) external (B) extern (C) auto extern (D) None

- b. Explain the elements of user defined functions. (06 Marks)

- c. Write a function prime that returns 1, if its argument is a prime number and returns 0. Otherwise. Using the same function, write a program to check whether the number is prime or not. (05 Marks)

- d. Write a note on parameter passing techniques. (05 Marks)

6. a. Choose the correct answer : (04 Marks)

- i) Multi way decision making using _____.
 (A) if (B) for (C) while (D) switch
 ii) $5 > 3 ? \text{printf}("hello") : \text{printf}("C")$;
 (A) hello (B) C (C) hello C (D) None
 iii) The result of an expression $2 > 8 \ \& \ 2 < 8$ is
 (A) True (B) False (C) 10 (D) 20
 iv) Size of (float) is
 (A) 2 (B) 4 (C) 8 (D) 1

- b. Explain switch structure with flowchart and write a program to display name a day in week for the given day number, assume day one is Monday. (06 Marks)

- c. Write a program to find the given number is palindrome or not using while loop. (05 Marks)

- d. Write a program to find square of a given number using for loop.
 (Note : Find square using successive addition method). (05 Marks)

7. a. Choose the correct answer : (04 Marks)

- i) Array is an example of _____ data types
 (A) Derived (B) Basic (C) User defined (D) None
 ii) An array $a[5]$ consists of _____ number of elements.
 (A) 10 (B) 5 (C) 25 (D) None
 iii) An array $a[5][3]$ consists of _____ elements.
 (A) 5 (B) 3 (C) 15 (D) None
 iv) Which of the following is not a data structure
 (A) Linked list (B) Stack (C) Queue (D) Pointer

- b. Explain how a 1 – Dimensional array can be declared and initialized, write a program to add all the 'n' elements of an array. (06 Marks)

- c. Explain the following string handling functions, with examples : i) Strcat ii) Strcpy. (04 Marks)

- d. Write a C program to multiply $A[M \times N]$ and $B[P \times Q]$ matrices and stores the result in C matrix. (06 Marks)

8. a. Choose the correct answer : (04 Marks)

- i) Parallel computing is _____ execution of instructions.
 (A) Simultaneous (B) Serial (C) Accurate (D) Complete
 ii) Which of the following is not a synchronization construct?
 (A) Single (B) Master (C) Section (D) Critical
 iii) How many threads would be created for the parallel execution of $\text{for } (x = 0 ; x < 10 ; x++) \{ \}$?
 (A) 10 (B) 9 (C) 11 (D) 0
 iv) Which of the following does not signify the need of using threads?
 (A) Enhanced performance (B) Reduced processor idle time
 (C) Hidden memory latency time (D) Error – free computation.

- b. Explain the data handling in open MP. (06 Marks)

- c. What is thread? Explain the need for threads. (06 Marks)

- d. Write a note on environment variables of open MP. (04 Marks)