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First/Second Semester B.E. Degree Examination, June 2012
Computer Concepts and 'C' Programming

Time: 3 hrs.

Max. Marks:100

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

PART – A

- 1 a.** Choose your answers for the following : **(04 Marks)**
- i) The first mechanical computer designed by Charles Babbage was called

A) Abacus	B) Processor
C) Calculator	D) Analytical Engine
 - ii) Integrated circuit was developed in _____ generation of computers

A) FIRST	B) SECOND
C) THIRD	D) FOURTH
 - iii) 1 Gigabyte (GB) is equivalent to _____

A) 1024 MB	B) 1024 KB
C) 1024 GB	D) 1024TB
 - iv) ASCII is a _____ bit BCD code

A) 4	B) 6
C) 8	D) 10
- b.** Discuss the basic structure of a computer with a neat block diagram. **(06 Marks)**
- c.** Explain different types of computers for organizations. **(10 Marks)**
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- 2 a.** Choose your answers for the following : **(04 Marks)**
- i) A collection of 4 bits is called

A) Nibble	B) Byte	C) Word	D) Record
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 - ii) Which of the operating system is not a GUI based?

A) WINDOWS	B) LINUX	C) MAC	D) DOS
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 - iii) Which is a secondary memory device?

A) Cache	B) RAM	C) Registers	D) Floppy disk
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 - iv) Which of the following is not a layer in the OSI model?

A) Presentation	B) Transport	C) Session	D) Communication
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- b.** Enlist various secondary storage devices. Explain how data can be stored and retrieved from CD-ROM. **(06 Marks)**
- c.** What is an operating system? What are the major functions of an operating system? **(06 Marks)**
- d.** Write a note on the need for networking. **(04 Marks)**

- 3 a. Choose your answers for the following : (04 Marks)
- 'C' language is a _____
 A) Structured language B) Object-oriented language
 C) Machine language D) Assembly language
 - Identify valid identifier
 A) a123 B) \$123
 C) 123a D) a#123
 - A step by step procedure to solve a given problem is called
 A) Logarithm B) Algorithm
 C) Flowchart D) Program
 - The range of char data types on 16 bit machines is:
 A) -126 to 127 B) -128 to 127
 C) -127 to 128 D) -127 to 127
- b. Explain the different phases of solving a given problem using computer. (10 Marks)
- c. Write an algorithm and flowchart to calculate factorial of a number. (06 Marks)
- 4 a. Choose your answers for the following : (04 Marks)
- The operator % yields
 A) Quotient B) Remainder
 C) Percentage D) Fractional part
 - Evaluate the expression $10! = 10 \parallel 5 < 4 \&\& 8$. The result is:
 A) 1 B) 0 C) 2 D) 10
 - Which of the following bitwise operator shifts their first operand to its left?
 A) && B) << C) >> D) ^
 - If a = 10, b = 5 find C = ++a-b. The result is:
 A) 5 B) 7 C) 6 D) -6
- b. Explain precedence and associativity of operators in 'C' with an example. (08 Marks)
- c. What is type conversion? What are the different ways of type conversion? Explain with an example. (08 Marks)

PART – B

- 5 a. Choose your answers for the following : (04 Marks)
- What is the output of following program?

```
#include <stdio.h>
Void main( )
{ int num;
  for(num = 0; num <= 10; num ++)
  { ;
  }
  printf("%d", num);
}
```

 A) 012345678910 B) 11
 C) 10 D) 01234567891011
 - A for loop with no test condition is known as _____ loop
 A) Finite B) Infinite C) While D) do-while
 - In 'C' which of the following is not a storage class specifier?
 A) Static B) Auto C) Const D) Register
 - Which of the following is the last character that is stored in a char array in 'C'?
 A) \0 B) \NULL C) 0 D) /0

- b. Describe the different ways of passing parameters to functions. (08 Marks)
- c. Write a 'C' program using functions, to compute the sum of N numbers. (08 Marks)
- 6 a. Choose your answers for the following : (04 Marks)
- Which of the following command will place the program control out of the loop when it gets executed
 A) goto B) Break C) exit D) continue
 - How many times the following loop will be executed?

```
for(;;)
{
    printf("Hello");
}
```

 A) 1 B) 0 C) Infinite D) Finite
 - What would be the output of the following code segment?

```
for(i = 1; i <= 5; i++)
{
    if(i == 3) continue;
    printf("%d", i);
}
```

 A) 12 B) 1245 C) 1234 D) 345
 - The minimum number of times the do-while loop will be executed
 A) 0 B) 1 C) 2 D) Both a and b
- b. Differentiate between while and do while statements, with an example for each. (08 Marks)
- c. Write a 'C' program to calculate area of circle, rectangle and triangle using switch statement. Area of circle = $\pi * r * r$, Area of rectangle = length \times breadth, Area of triangle = $0.5 * \text{base} * \text{height}$. (08 Marks)
- 7 a. Choose your answers for the following : (04 Marks)
- In the following segment of code, what will be the values of x and y after execution, if n assumes a value of zero(0)

```
x = 1; y = 1;
if (n > 0)
{ x = x + 1;
  y = y - 1;
}
printf("%d %d", x, y);
```

 A) 0, 0 B) 1, 0 C) 0, 1 D) 1, 1
 - Arrays can be initialized at
 A) Compile time B) Run time C) Both A and B D) None of these
 - Strncmp() function has _____ number of parameters
 A) 2 B) 3 C) 1 D) 4
 - How many times the following while loop is executed?

```
While (0)
{
    Statements;
}
```

 A) 0 B) 1 C) Infinite D) Finite

- b. What is an array? Write a program to print the sum of two one dimensional array and store the result in another array. (08 Marks)
- c. Write a program that accepts a string and check whether the string is palindrome or not. (08 Marks)
- 8 a. Choose your answers for the following : (04 Marks)
- i) Parallel computing is _____ execution of instructions in a computer

A) Simultaneous	B) Serial
C) Accurate	D) Complete
 - ii) Open MP supports _____

A) Multi-threaded	B) Shared memory
C) Both a and b	D) None of these
 - iii) Which of the following is not a synchronization construct?

A) Single	B) Master
C) Section	D) Critical
 - iv) Which of the following is the correct syntax of specifying open MP threads in C?

A) #pragma omp directive [clause 1] [clause 2]... [clause n]	B) #pragma openmpdirective [clause 1] [clause 2]...[clause n]
C) #define omp directive [clause 1]...[clause n] accurate	D) #define pragma omp directive [clause 1]...[clause n]
- b. What is parallel computing? What are the various motivating factors for parallelism? (10 Marks)
- c. What is open MP? Explain the open MP programming model. (06 Marks)

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