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First/Second Semester B.E. Degree Examination, June/July 2016
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 in 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 the correct answers for the following :
- Who invented a machine known as difference engine?
 A) Blaise Pascal B) Charles Babbage C) Peter Norton D) Dennis Richie
 - Which one of the following is optional components of a computer?
 A) Mouse B) Hard Disk C) RAM D) Modem
 - Piezoelectric technology is used in _____
 A) Scanner B) Mouse C) Printer D) Monitor
 - Who among the below not a microprocessor manufacture?
 A) Dual core B) Advanced Micro Devices
 C) Cyrix D) Intel. (04 Marks)
- b. With a neat diagram, explain the basic structure of a computer. (06 Marks)
 c. Explain computers for individuals. (05 Marks)
 d. Explain four main characteristics of monitors. (05 Marks)
- 2 a. Choose the correct answers for the following :
- _____ is an interface for floppy drives
 A) ISA B) IDE C) SATA D) SCSI
 - _____ Kbps is data transfer rate of 16x CD – ROM drive
 A) 150 B) 300 C) 1600 D) 2400
 - Which one of the following is not a process state?
 A) Running B) Ready C) Blocked D) Stop
 - _____ is an type of network topology
 A) Switch B) Bus C) Hub D) Router. (04 Marks)
- b. Explain different computer processing techniques. (06 Marks)
 c. What are the steps to create a custom – made software? Explain. (06 Marks)
 d. With a neat diagram explain tracks and sectors of a storage media. Calculate number of bytes in a magnetic media of 10 sectors and 4 disks. (04 Marks)
- 3 a. Choose the correct answers for the following :
- The C programming language is not derived from _____ language
 A) ALGOL B) A C) B D) BCPL
 - Which among the following is compulsory in C programming?
 A) Local variables B) Global variables C) Function D) Comment
 - What is the output of statement ; printf(“%d * %f = %d”, 2, 3.1, 2 * 3.1);
 A) Error B) Junk value C) 2 * 3.1 = 6.2 D) 2*3.1 = 6.200000
 - scanf(“%8.4f”,&a); During execution if we input 123.456 what is stored in variable a?
 A) 123.456 B) 123.4560 C) 123.456000 D) Error. (04 Marks)
- b. Explain different steps of creating and running a program. (06 Marks)
 c. Write and explain structure of a C program. (06 Marks)
 d. List all types of constants used in C programming. (04 Marks)

- 4 a. Choose the correct answers for the following :
- Identify the invalid header file in C programming
 A) ctype.h B) complex.h C) stdlib.h D) iostream.h
 - Which of the following has an error?
 A) #define PI 3.1415927
 B) #define pi 3.1415927
 C) #define PI = 3.1415927
 D) #define pi 3.1415
 - Evaluate $a = i * (j/k/2)$; if $i = 4.0$, $j = 2.0$ and $k = 6.0$
 A) 2.6 B) 2.666667 C) 1 D) 0
 - Which is the computer expression for $a = (x^y)^z$?
 A) $a = \text{pow}(\text{pow}(x, y), z)$; B) $a = \text{pow}(x, y, z)$;
 C) $a = x**y**z$; D) $a = \text{pow}(\text{pow}(z, x), y)$;
- b. Explain different type conversion techniques with examples. (04 Marks)
(06 Marks)
- c. Write a C program to calculate compound interest using formula : $CI = P \left(1 + \frac{r}{n}\right)^{nt}$. (06 Marks)
- d. Evaluate following expressions with values $i = 3$, $j = 4$ and $k = 2$. (04 Marks)
- $i++ - j --$
 - $++k\% - -j$
 - $j + 1/i - 1$
 - $j++/i--$

PART - B

- 5 a. Choose the correct answers for the following :
- What is output for the following code segment?

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

 A) 54 B) 123 C) 1245 D) 5421
 - _____ is used to terminate a C program
 A) Semicolon B) exit(0) C) break D) All of these
 - _____ is widely used data type only in user defined functions.
 A) void B) int C) float D) double
 - Which one of the following is not a standard function?
 A) return B) abs C) ceil D) floor. (04 Marks)
- b. What are advantages of user defined function? Explain. (06 Marks)
- c. Compare global variables with local variables. (05 Marks)
- d. Write a recursive C program to find factorial of a given number. (05 Marks)

- 6 a. Choose the correct answers for the following :
- The value of switch expression must of _____ type
A) int B) float C) double D) All of these
 - Two way selection is implemented using _____ statement
A) if B) if - - - else C) switch D) None of these
 - Which one of the following is not an assignment operator?
A) = B) != C) /= D) +=
 - What is output for the following code segment?
while (-1)
{
 printf("VTU");
}
 printf("BELGAUM");
A) Infinite loop B) Error
C) Infinite time prints VTU D) infinite time prints VTUBELGAUM. (04 Marks)
- b. Write a C program to find all roots of a quadratic equation. (08 Marks)
- c. Write a C program to find sum of series : $sum = x - \frac{x^3}{3!} + \frac{x^5}{5!} - \frac{x^7}{7!} + \dots$ (08 Marks)
- 7 a. Choose the correct answers for the following :
- Which one of the following is a valid array declaration?
A) int a[2][2] = {1, 2}; B) int b[N] = {1, 2, 3};
C) int c[5] = {1, 2, 3, a, b}; D) int d[2] = {1, 2, 3};
 - _____ is a invalid function prototype
A) int avg(int x, int y, int z); B) float power(float a, float b);
C) double min(float a; float b); D) All of these
 - Identify the invalid string function :
A) strlen() B) strcpy() C) strcat() D) strin()
 - What is index of 6 in the array declaration given below.
int a[][4] = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12};
A) a[1][1] B) a[2][2] C) a[2][1] D) a[1][2]. (04 Marks)
- b. Write a C program to find row sum and column sum of a given matrix. (06 Marks)
- c. Define string. Explain different types of strings with example. (05 Marks)
- d. Define array. Explain different types of arrays with example. (05 Marks)
- 8 a. Choose the correct answers for the following :
- In parallel programming which one of the header file is compulsory
A) #pragma B) omp.h C) stdio.h D) conio.h
 - _____ is an advantage of threads
A) Latency hiding B) Seek time C) Access speed D) None of these
 - Identify the invalid construct of parallel programming
A) CRITICAL B) SECTION C) FOR D) IF
 - Parallel computing is _____ execution of instructions
A) Random B) Sequential C) Perfect D) Complete. (04 Marks)
- b. Write a parallel program in C to find product of two matrices. (10 Marks)
- c. Explain motivating factors for parallel programming. (06 Marks)
