2019

COMPUTER SCIENCE

(Major)

Paper : 1.1

(Computer Fundamentals and Programming)

Full Marks : 60

Time : 3 hours

The figures in the margin indicate full marks for the questions

1. Answer the following as directed : 1×7=7

(a) The term byte refers to

(i) 2 bits

(ii) 4 bits

(iii) 6 bits

(iv) 8 bits

(Choose the correct option)

(b) Choose the correct output for the following code segment :

```
#include<stdio.h>
void main()
{
    int i, j = 0;
    for (i=1; i<7; i++)
    {
        j=j+1;
    }
    printf ("%d", j);
}
```

(i) 5
(ii) 6
(iii) 7
(iv) 8

(c) Which is not a data type in C programming?
(i) int
(ii) long int
(iii) short int
(iv) main

(Choose the correct option)

(d) The expressions i++ and ++i are same in C language.

(State True or False)

(e) Which of the following functions is used to write in a text file in C?
(i) fprintf( )
(ii) fscanf( )
(iii) printf( )
(iv) scanf( )

(Choose the correct option)

(f) 'Dot matrix' printer is an example of
(i) line printers
(ii) of-brand printers
(iii) character printers
(iv) ink printers

(Choose the correct option)

(g) The decimal number for binary number $(10101)_2$ is _____.

(Fill in the blank)

2. Answer the following questions : 2×4=8

(a) Find out the binary equivalent of the decimal number $(57)_{10}$.

(b) What is CPU?

(c) Differentiate between RAM and ROM.

(d) What is a program counter?

3. Answer any *three* of the following questions : 5×3=15

(a) Explain briefly the different uses of digital computers.

(b) What is flowchart? State the different components of a flowchart.

(c) Explain briefly the functions of Linker, Loader and Assembler.

(d) What is memory? Differentiate between primary memory and secondary memory. Give one example of each.

(e) What is the purpose of FOR statement in C? How does it differ from WHILE statement?

(f) What is a pointer? Give an example of use of pointer variable.

4. Answer any *three* of the following questions : 10×3=30

(a) Write a program to check whether a given number is odd or even.

(b) Write a program to find out the sum of the series $1+2+3+\ldots\ldots+n$. (The number of terms n will be inputted by the user)

(Continued)

(c) Write a program to find out the element having the maximum value in an integer array. (The size of the array should be inputted by the user)

(d) Write a program to find out the sum of two matrices.

(e) Write a function to find out the sum of the digits of a given integer number (e.g., if the user inputs an integer number 245, then the sum of the digits will be $2+4+5=11$).

(f) Write a program to merge two sorted arrays.

(g) Explain the following functions with example (any *two*) :

(i) malloc()

(ii) open()

(iii) strcmp()

(iv) scanf()

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