

2018

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 'gigabyte' refers to

- (i) 1024 bytes
- (ii) 1024 kilobytes
- (iii) 1024 megabytes
- (iv) 1024 bits

( Choose the correct answer )

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

```
#include<stdio.h>
void main()
{
    int i=2;
    do
    {
        printf("Hi");
    } while (i < 2)
}
```

(i) Compile time error

(ii) Hi

(iii) Hi Hi

(iv) HiHi

(c) Which of the following header files supports the functions malloc() and calloc()?

(i) stdlib.h

(ii) memory.h

(iii) math.h

(iv) stdio.h

( Choose the correct answer )

(d) The expressions \*ptr++ and ++\*ptr are same in C language.

( Write True or False )

(e) Which of the following functions is used to find the first occurrence of a given string in another string?

(i) strchr()

(ii) strrchr()

(iii) strstr()

(iv) strnset()

( Choose the correct answer )

- (f) 'dot matrix' and 'solid font' printers are the examples of
- (i) line printers
  - (ii) of-brand printers
  - (iii) character printers
  - (iv) ink printers

( Choose the correct answer )

- (g) The binary number of octal  $(45)_8$  is \_\_\_\_\_.

( Fill in the blank )

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

- (a) Find out the BCD equivalent of  $(127)_{10}$ .
- (b) What is a bootstrap loader?
- (c) Differentiate between ASCII and EBC DIC.
- (d) When you write a program and the electricity goes off, your program is lost if you have not saved it, why?

3. Answer any *three* questions of the following :

5×3=15

- (a) Explain briefly the different components of computer system hardware.

- (b) Draw a flowchart to find GCD of two numbers.
- (c) What is meant by storage class? Briefly explain different storage classes of C language.
- (d) What is meant by operator precedence? What are the relative precedences of arithmetic operators?
- (e) What is the purpose of the 'do...while' statement in C? How does it differ from 'while' statement?
- (f) What is a structure? How does a structure differ from an array?

4. Answer any *three* questions of the following :

10×3=30

- (a) Write a program to check whether a given number is prime or not.
- (b) Write a program to find out the sum of the series  $1^3 + 2^3 + 3^3 + \dots + n^3$ . (The number of terms  $n$  will be inputted by the user.)
- (c) Write a program to eliminate duplicate elements from an integer array. The size of the array should be inputted by the user.

- (d) Write a program to find out the transpose of a matrix.
- (e) What is recursion? How does it work? Write a recursive function to implement binary search algorithm.
- (f) Write a program to check whether a given number is palindrome number or not. (A palindrome number or numeral palindrome is a number that remains the same when its digits are reversed, e.g., 16461)
- (g) Explain the following functions with examples :
- (i) fopen()
  - (ii) fseek()
  - (iii) ftell()
  - (iv) fread()

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