2015

MCA

1st Semester Examination

INTRODUCTION TO PROGRAMMING

PAPER—MCA-101

Full Marks : 100

Time : 3 Hours

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Attempt *Q. No. 1* and any *four* from the rest.

1. Answer any *five* questions :   5×2

   (a) When do we use Switch-case over if-else ?

   (b) What is static variable ?

   (c) Give an example of a pointer to a function.

   (d) What is the difference between the following two expressions :

   # include "Studio.h"

   # include <Studio.h>

(e) What is the difference between 'array-of-pointers' and 'pointer to an array'?

(f) Write a function to calculate the length of a string.

(g) Write down the output of the following program :

```
main ( ) {
  char ch = 291 ;
  print f ("%d %c", ch, ch); }
```

2. (a) What is the full form of IDE ? Give an example of a ternary operator.   1+2

(b) What is function prototype ? Why it is needed ? 2+2

(c) Write a program to find the maximum among 10 integers (taken from the keyboard) using an "odd loop".   6

(d) Write down the output of the following program :

```
main ( ) {
  int i = 3, j;
  j = ++ i * ++ i * ++ i;
  printf ("%d", j);
}
```
                                                        2

3. (a) Suppose we want to assign 32768 to an integer variable i. What is the suitable declaration among the following two : unsigned int i, long int i.

Give proper explanation (assume 16-bit compiler).

                                                        3

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(b) Write a program to make an infinite loop using recursion. 4

(c) What is the difference between a macro and a global variable? 2

(d) What are the differences between recursion and iteration? 4

(e) What is the output of the program :

```
main () { int i;
        for (i = 1; 100; i++)
            printf ("%d", i);
    }
```
2

4. (a) Explain bit-wise operator. What is the return type of printf ()? 2+1

(b) What is the command line argument? What is call-by-address? 2+2

(c) Are the following statements valid? 2×3

   (i) y = *p**q;
   (ii) Y = p/q;
   (iii) Y = p−q;

   Assume p and q are two pointers and y is an integer. Write proper explanation.

(d) How do you assign 'COMPUTER' to a character array 'ar'? 2

5. (a) Write down the use of the library functions : 2×3

getch ( ), strncpy ( ), strrev ( )

(b) What is dynamic memory allocation ? What is chain of pointers ? 2+2

(c) Write a function to check a given string is palindrome or not without using any build in function from string.h library. 5

6. (a) Write an example of pointer to a structure ? 2

(b) What is the difference between structure and union ? How are values assigned to the members of structure ? 3+3

(c) What are the purpose of the following escape sequence : '\r', '\n', '\b'. 3

(d) Write down the statements to open and close a file. 4

Internal Assessment : 30