Roll No. ..6.2.1.1.....

Total No. of Questions : **9**] [Total No. of Printed Pages : 7

(2111)

BCA (CBCS) RUSA Ist Semester Examination

4511

C–PROGRAMMING

BCA–0104

Time : 3 Hours] **[Maximum Marks : 70**

Note :– Attempt *five* questions in all, selecting *one* each from Unit–I to Unit–IV. Part-A (Q. No. **1**) is compulsory.

Part–A

(Compulsory Question)

1. (A) Multiple Choice Questions :

   (i) Compiler generates ..... files.

   (a) Executable code

   (b) Object code

   (c) Assembly code

   (d) None of these

(ii) What function can be used to free the memory allocated by calloc() ?

(a) Dealloc

(b) Streat

(c) Free

(d) Memory

(iii) What will be the output of the following C code ?

```
1.  # include <stdio.h>
2.  void main()
3.  {
4.  char a='a'
5.  int x=(a%10)++.
6.  printf ("%d, \n", x);
7.  }
```

(a) 6

(b) Junk value

(c) Compile time error

(d) 7

(iv) What will be the output of the following C code ?

```
1.  # include <stdio.h>
2.  int main()
3.  {
4.  int i=0
5.  int j=i++ +i;
6.  printf ("%d, %n", f);
```

(a) 0

(b) 1

(c) 2

(d) Compile time error

(v) What is the maximum number of dimensions an array in C may have ?

(a) Two

(b) Eight

(c) Twenty

(d) Theoretically no limit

The only practical limits are memory size and compilers.

(vi) Which are of the following is not a reserved keyword for C ?

(a) auto

(b) case

(c) main

(d) default

(vii) A C variable cannot start with :

(a) A number

(b) A special symbol other than underscore

(c) Both of these

(d) An alphabet

(viii) What does the following declaration mean ?

int (*ptr) [10];

(a) ptr is array of pointers to 10 integers

(b) ptr is a pointer to an array of 10 integers

(c) ptr is an array of 10 integers

(d) ptr is a pointer to array

(ix) The keyword used to transfer control from a function back to the calling function is :

(a) switch (b) goto

(c) go back (d) return

(x) Specify the two library functions to dynamically allocate memory :

(a) malloc() and memalloc()

(b) alloc() and memalloc()

(c) malloc() and calloc()

(d) memalloc() and foralloc() 1×10=10

(B) Answer the following in **25** to **50** words :

(i) Why C is called as structured language ?

(ii) What are different symbols of flow chart ?

(iii) Differentiate between constant and variable.

(iv) Explain what is operand ? What is its relationship with operands ?

(v) Is it possible to declare and initialize an array in C simultaneously ? If yes, how ?

4×5=20

Part–B

(Unit–I) 10 each

2. Write an algorithm and draw flow chart to find and print Fibonacci sequence.

Or

3. Define data type. Explain various data types used in C in detail by taking examples.

(Unit–II) 10 each

4. Define an Operator. Explain, what are its different types ?

Or

5. What are formatted and unformatted input/output functions used in C. Explain in detail by taking examples.

(Unit–III) 10 each

6. Write a menu driven program with the following options :

   (i) Biggest of three numbers

   (ii) Positive or negative number

   (iii) Factorial of a number

   (iv) Exit

Or

7. What are Control Statement ? Explain different types of control statements.

(Unit–IV) 10 each

8. What is the need for functions ? What are different ways of passing arguments to a function ?

Or

9. What are the advantages of using pointers ? What are the various operations permitted on pointers ?

Total No. of Questions : 9] [Total No. of Printed Pages : 4

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B.C.A. UG (CBCS) RUSA Ist Semester Examination

4208

C-PROGRAMMING

BCA–0104

Time : 3 Hours] **[Maximum Marks : 70**

Note :– Attempt *five* questions in all. Q. No. 1 (Part–A) is compulsory. Also attempt *one* question from each Unit i.e. I, II, III and IV.

Part–A

(Compulsory Question)

1. (A) (i) The C language was developed at .....

(ii) A ..... character instructs the computer to move the control to the next line.

(iii) Stdio.h refers to standard I/O header file. (True/False)

(iv) The underscore character is allowed in identifier naming. (True/False)

(v) Name the format specifier that can be used to print a integer variable.

(vi) In case of the do..while, the statement block is executed at least once.

(True/False)

(vii) Dividing a pointer variable with a number is not allowed. (True/False)

(viii) The process of a function calling itself is called as .....recursion..... .

(ix) The symbol for logical AND operator is .....&&..... .

(x) Puts() function is used to ..... .

1×10=10

(B) (i) Differentiate between array and variable.

(ii) Write a note on arithmetic operators.

(iii) What is meant by function definition ?

(iv) Write a short note on integer constants.

(v) Discuss the various rules for identifier naming.

5×4=20

Part–B

(Unit–I)

2. Write and explain the basic concepts of a C program. 10

3. Explain in detail the various data types in C language. 10

Part–C

(Unit–II)

4. Write a C program to find maximum of two numbers using ternary operator.

5. Explain the following functions : 10

   (i) printf()

   (ii) scanf()

   (iii) gets()

   (iv) getch()

Part–D $4 \times 2\frac{1}{2} = 10$

(Unit–III)

6. What is an array ? Explain the declaration and initialization of one and two dimensional arrays with example. 10

7. Develop a C program to reverse of an integer number NUM and check whether it is PALINDROME or NOT. 10

Part–E

(Unit–IV)

8. What is function parameter ? Explain different types of parameters in C functions with the help of programming example. 10

9. (i) What is a pointer ? Explain how the pointer variable declared and initialized.

   (ii) What is dynamic memory allocation ? Write and explain the different dynamic memory allocation functions in C. 5,5

Total No. of Questions : 9] [Total No. of Printed Pages : 4

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B.C.A. UG (CBCS) RUSA Ist Semester Examination

3610

C-PROGRAMMING

BCA–104

Time : 3 Hours] [Maximum Marks : Regular :70 ICDEOL:100

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/ continuation sheet will be issued.

Note :– Attempt *five* questions in all. Question No. **9** is compulsory. Rest, attempt *one* question each from each of the Unit-I to Unit-IV.

Unit–I

1. Write a small program in C and define its structure and constructs. 14(20)

Or

2. Define the following terms giving examples in 'C' language :

   (i) Character set in 'C'

(ii) Identifiers in 'C'

(iii) Constants and variables

(iv) Arrays

(v) Declaration of a variable

(vi) Expression

(vii) Statement

2×7=14
(20)

Unit–II

3. (a) Discuss various types of relational operators. Give examples of each type. 7(10)

(b) What are library functions ? How are these different from user defined functions ? 7(10)

Or

4. (a) Explain various options/ways available in 'C' for different types of inputs in 'C'. Give examlpes of each type of statement also. 7(10)

(b) Write a small program in 'C' to input values of three variables : one of 'int' type, one of 'float' type and one of 'char' type from the user. Print these values on three different lines on the screen. 7(10)

Unit–III

5. What are control statements ? What is their role ? Explain branching, looping and nested control statements giving appropriate examples. 14(20)

Or

6. Write a program in 'C' to accept the following from the user for 10 students : 14(20)

   (a) Marks obtained (total)

   (b) Maximum total marks

   Using the 'switch ..... case' statement, print the grade of each student on the screen according to the following criterion :

(a)	Marks > 80,	Grade 'A'
(b)	70 ≤ Marks ≤ 80	Grade 'B'
(c)	60 ≤ Marks ≤ 69	Grade 'C'
(d)	50 ≤ Marks ≤ 59	Grade 'D'
(e)	40 ≤ Marks ≤ 49	Grade 'E'
(f)	Marks < 40	Fail

Unit–IV

7. (a) What are functions ? How do you define these in 'C' ? Explain how are the arguments passed onto the functions. 10(14)

   (b) Explain recursion. 4(6)

Or

8. Write a program in 'C' using functions to swap the values of two string constants. 14(20)

Unit–V

9. Answer the following :

   (a) Explain the 'printf ()' statement in 'C' 2(4)

   (b) Discuss the precedence of arithmetic and logic operators. 3(4)

   (c) Differentiate between 'do ..... while' and 'do' loops. 3(4)

   (d) What are the characteristics of arrays ? Explain. 3(4)

   (e) How is a 3 dimensional array defined ? 3(4)

Roll No. .....

Total No. of Questions : 9] [Total No. of Printed Pages : 8

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BCA (CBCS) RUSA Ist Semester Examination

4040

C–PROGRAMMING

BCA–0104

Time : 3 Hours] **[Maximum Marks : 70**

Note :– Attempt *five* questions in all, selecting *one* each from Unit–I to Unit–IV. Part-A (Q. No. 1) is compulsory.

Part–A

(Compulsory Question)

1. (A) Multiple Choice Questions :

(i) The type name/reserved word 'short' is :

(a) short long

(b) short char

(c) short float

(d) short int

(ii) To store a word/sentence declare a variable of the type 'string'.

(a) True

(b) False

(iii) In the given below code, the P_2 is :

Type def int *ptr;

ptr p^1, p^2

(a) Integer

(b) Integer pointer

(c) Both integer and integer pointer

(d) None of these

(iv) What will be the output of the following C code ?

```
1.  # include <stdio.h>
2.  int main()
3.  {
4.  int a=1, b=1, c;
5.  c = a++ + +b
```



```
6.  printf ("%d, %d", a,b);
7.  }
```

(a) a = 1, b = 1

(b) a = 2, b = 1

(c) a = 1, b = 2

(d) a = 2, b = 2

(v) What will be the output of the following C code ?

```
1.  # include <stdio.h>
2.  int main()
3.  {
4.  while()
5.  printf ("In while loop");
6.  printf ("After loop \n");
7.  }
```

(a) In while loop after loop

(b) After loop

(c) Compile time error

(d) Infinite loop

(vi) C was primarily developed as :

(a) system programming language

(b) General purpose language

(c) Data processing language

(d) None of these

(vii) C programs are converted into machine language with the help of :

(a) An Editor

(b) A compiler

(c) An operating system

(d) None of these

(viii) In C if you pass an array as an argument to a function, what actually gets passed ?

(a) Value of element in array

(b) First element of the array

(c) Base address of the array

(d) Address of the last element of array

(ix) Which header file should be included to use functions like malloc() and calloc() ?

(a) memory.h (b) stdlib.h

(c) string.h (d) dos.h

(x) Which of the following is not logical operator ?

(a) & (b) && AND

(c) || OR (d) ! NOT 1×10=10

(B) Answer the following in 25 to 50 words :

(i) Why C is called middle level language ?

(ii) Explain the term compilation.

(iii) Differentiate between keywords and identifiers.

(iv) What is an operator ? List different types of operators.

(v) Define an array. In what way does an array differ from an ordinary variable ?

4×5=20

Part–B

(Unit–I)

2. Write an algorithm and draw a flow chart to find :

   (a) The sum of first 50 natural numbers

   (b) The sum of first 50 add numbers 5,5

Or

3. What are constants, variables and keywords ? Explain by taking suitable examples. 10

(Unit–II) 10 each

4. Write a program to find the reverse of a five digit number.

Or

5. Write a program to calculate net salary of an employee if his basic salary is input from keyboard, his DA is 35% of basic, HRA is 15% of the basic, MA is Rs. 250 and his PF is deducted at the rate of 10% of the Basic Salary (BS) :

   Net Salary = BS + DA + HRA + MA – PF

(Unit–III) 10 each

6. Write a program to calculate electricity bill for the following conditions :

   Minimum charges = 250 if units consumed are < = 100

   upto 250 units bill is calculated @ 3 per unit for > 100 and < = 250 units

   upto 500 units bill is calculated @ 3.75 per unit for > 250 and < = 500 units

   for > = 500 units is calculated # 4.50 per unit.

Or

7. Write a program to print the following patterns :

   (i)
   ```
   A B C D ⊂  B A
   A B C   ⊂  B A
   AB         B A
   A          A
   ```

(ii) 6 5 4 3 2 1

5 4 3 2 1

4 3 2 1

3 2 1

2 1

1

(Unit–IV) 10 each

8. What is a Function ? Differentiate between call by value and call by reference function. Use appropriate examples.

Or

9. What are Pointers ? Explain the concept of array of pointers with the help of appropriate example.