B.C.A. (Part I) EXAMINATION, 2015
(Paper Fifth)
PROGRAMMING IN 'C' LANGUAGE

Time : Three Hours] [*Maximum Marks : 100]*

Note : Attempt any two parts from each question. All quetions carry equal marks.

UNIT - 1

1. (a) What do you understand by data types ? Explain various data types with it memory allocation.
   (b) What do you understand by operators ? Explain various operators with its precedence.
   (c) Write short notes on the following :
      (i) getch ( )   (ii) getche ( )   (iii) putchar ( )
      (iv) putc ( )   (v) getc ( )

UNIT - 2

2. (a) What do you undertstand by multidimensional arrays ? Write a program in 'C' to search a element in an array.
   (b) What is call by value and call by reference in 'C' programming ? Explain with suitable example.
   (c) Write a program in 'C' to find factorial of a given number using recursion.

UNIT - 3

3. (a) What do you understand by structure in 'C' ? Explain with example.
   (b) Explain Union in 'C' with example. What is the difference between union and structure ?
   (c) Write short notes on the following :
      (i) Enum   (ii) Passing structure to function
      (iii) Nested structure   (iv) Typedef statement

UNIT - 4

4. (a) Explain various dynamic memory allocation functions with proper example.
   (b) Write a program in C to demonstrate the use of pointer to pointer.
   (c) Write short notes on the following :
      (i) & and * operators   (ii) Void pointers
      (iii) Pointer artithmetic   (iv) array to pointer

(v) pointer to array

UNIT - 5

5. (a) Explain various file accessing functions in C with example.
    (b) Explain C perprocessor directives with an example
    (c) What is Command line argument ? Explain with example.

PROGRAMMING IN 'C' LANGUAGE - 2014

Note : Attempt any two parts from each question. All quetions carry equal marks.

1. (a) Write a note on operations in 'C'.
    (b) Explain control constructs in 'C' with suitable example.
    (c) Write a program in C to print Fibonacci series.
2. (a) Write a program in 'C' to search an element in an array.
    (b) Write a program in 'C' to find factorial of a given number using recursion.
    (c) What do you understand by call by value and call by reference ? Explain with suitable example.
3. (a) Explain Enum with example.
    (b) Differentiate structure and union with example.
    (c) Explain array of structure with example.
4. (a) What are the different memory allocation functions ? Explain with example.
    (b) Write a program in 'C' to demonstrate pointer for functions.
    (c) What do you understand by array of pointer ? Explain with example.
5. (a) Explain file accessing function with example.
    (b) Explain C preprocessor directives with an example.
    (c) Explain file handling through command line anqument with example.

PROGRAMMING IN 'C' LANGUAGE - 2013

Note : Attempt any two parts from each question. Use TC code and diagram to justify your answer. All quetions carry equal marks.

---

1. (a) What are the different data types in C ?
    (b) What are the differentces between while and do- while loop ? Explain with example.
    (c) Write a program in C to print all prime nos. from 1 to 100.
2. (a) Write a program in 'C' to calculate factorial of no. using recursive function.
    (b) Write the difference between call by value and call by reference.
    (c) Write a program in C to sort elements of an array.
3. (a) What are the difference between structure and union ?
    (b) Explain nesing of structure with an example.
    (c) Write a program in C to demonstrate array within structure.
4. (a) Write a note on pointer arithmetic.
    (b) What are the different memory allocation functions ? Explain in brief.
    (c) Write a program in 'C' to demonstrate array of pointers.
5. (a) Explain command line arguments with an example.
    (b) Write a program in C to demonstrate file accessing functions.
    (c) Explain C preprocessor directives with an example.

PROGRAMMING IN 'C' LANGUAGE 2012 - SUPPLE

Note : Attempt any two parts from each question. All quetions carry equal marks.

UNIT - 1

1. (a) Explain the different types of operators used in 'C' language.
    (b) Write the differences between while and do...... while loop with example.
    (c) Write a program in 'C' to find the sum of 1 to n numbers.

UNIT - 2

2. (a) What is prototyping ? Why is it necessary ?
    (b) Distinguish between the getchar and scanf function with example.

(c) Write a program in 'C' to add two n x m matrix.

UNIT - 3

3. (a) What is meant by the following terms:
   (i) Nested structure (ii) Array of structure
   (b) How does a structure differ from an array?
   (c) Explain, when do we use the following:
   (i) Unions (ii) The size - of operators

UNIT - 4

4. (a) What is pointer? Describe the typical application of pointers in developing programs.
   (b) Explain the following terms:
   (i) Calloc (ii) Malloc (iii) Realloc (iv) Free
   (c) What is dynamic array? How is it created? Give a suitable example of use of dynamic array.

UNIT - 5

5. (a) What is file? How does an append mode differ from a write mode?
   (b) Write a program in 'C' language to copy the contents of one file into another.
   (c) Describe the following functions:
   (i) rewind (ii) ftell (iii) fseek

PROGRAMMING IN 'C' LANGUAGE - 2012

Note: All questions are compulsory. Attempt any two parts from each questions carry equal marks.

1. (a) Write the structure of C program.
   (b) Write a program in C to print EVEN numbers between 1 to 300.
   (c) Write example of Nested for loop.

2. (a) Write a program to print first N terms of the following series using Recursion:

   0, 1, 1, 2, 3, 5, 8, 13, ... N.

   (b) Write a program in C for Linear search using one-dimensional array.
   (c) Explain utility of call by reference.

3. (a) Explain array of structure.
   (b) Write a program in C for passing structure to function.

(c) Write utility of union in C program.

4. (a) What is Pointer to Pointer? Brief with the help of example.
   (b) Explain Array of Pointer with suitable example.
   (c) Write a note on Dynamic Array of structure.

5. (a) Write a program in C to read and write sequential file for integer numbers.
   (b) What do you mean by command line arguments? Explain with the help of an example.
   (c) Write notes on the following:
   (i) # else (ii) # if (iii) # end if (iv) # elif

PROGRAMMING IN 'C' LANGUAGE - 2011

Note: Attempt any two parts from each question. Use TC code and diagram to justify your answer. All questions carry equal marks.

1. (a) Define and differentiate literals, variables and identifiers giving examples for each.
   (b) Why associativity is used with operators? What does it mean? Explain in detail.
   (c) How do "break", "continue" and "exit ()" work? Explain each by their use.

2. (a) What do you understand by function declaration (or prototype), function call and definition of function? Explain by using an example for finding cude. (i. e.a³) of given number using through functions.
   (b) What are the various data type according to variable scope (i. e. storage class)? Explain the properties of each data type.
   (c) Differentiate call by value and call by reference by using same program in both ways.

3. (a) Create a "Union" which include one "inl." and "one float" member, then store value in it and also display it.
   (b) How "typedef" is different from "structure" in C language?
   (c) Create a structure, then pass its variable from main function to the user defined function and display the value (which is passed through structure variable).

4. (a) Discuss the use of reference operator (&) and indirection

operator (*) for pointers.

(b) Write a program (through pointer) to add two variables a = 10 & b= 20 by using two pointers "p" & "q" for variable "a" & "b" respectively.(Use more variable and pointer if needed).

(c) Explain realloc ( ) & free( ) with its purpose, complete syntax including argument & its types (if any).

5.   Write short notes on any two of the following :

(i) fwrite () & fread ()

(ii) Conditional compilation directives

(iii) Purpose of command line argument by example

PROGRAMMING IN 'C' LANGUAGE - 2010

Note : Answer any two parts from each questions. All questions carry equal marks.

1. (a) What is an operator ? What do you mean by operator precedence ? Explain the difference between Conditiona Operator and Relational Operator.

(b) Explain the working of printf() and scanf() functions with their respective syntax and examples.

(c) Explain the syntax of the switch case construct Write a menu driven 'C' program using switch case to take 2 integers as input and print the sum, difference and product depending upon the choice provided by the user.

2. (a) What is the significance of single and muliti dimensional arrays in a programming language ? Write a C program to sort n numbers using bubble and technique.

(b) Explain the syntax and the working of the following functions related to strings :
strlen(), strcpy(), strcmp(), strstr().

(c) Explain Recursion. Write a 'C' program to find the power of an integer recursion.

3. (a) Define structure. What do you mean by nested structure definition ? Explain with an example.

(b) Write a 'C' program to define a srtucture Student that will contain the roll number, name and total marks of a student.

The program will ask the user to input the details of 5 students and print the detail of all the students whose total marks is greater than a given value.

(c) Define enums. What are the advantages of using enums?

4. (a) What is the relation between a pointer and an array ? Differentiate between an array of pointer and pointer to an array.

(b) What is the difference between static memory allocation and dynamic memory allocation ? Explain the difference between malloc() and calloc() function.

(c) Write a program using pointer to search smallest number in an array.

5. (a) What are the various modes in which a file can be opened in C ?

(b) Write a program to define a structure customer having fields A/c no, name balance, data of opening account. Display records of those customers who have opened a/c before 10/06/2006.

(c) What do you mean by command line arguments ? What is the advantage of using command line arguments with a program ?

PROGRAMMING IN 'C' LANGUAGE - 2009

Note : Attempt any two parts from each question. All questions carry equal marks.

1. (a) Explain different types of keywords and indentifiers in "C" programming.

(b) Write a 'C' program for palindrome or for finding maximum out of three given numbers.

(c) Write a program for the following output :

```
* * * * *
 * * * *
  * * *
   * *
    *
```

2. (a) What is a function in C ? How is it defined ? What are its arguments ? Explain with example.

(b) Write a program to read seven digit numbers and then find the average of that numbers.

(c) What is the difference between while-loop and do-while loop ? Explain with example.

3. (a) Explain declaring of "enum" and "enum" variable".

(b) Explain "structure" and "union" in C with example.

(c) What is the use of Goto statement ? Explain with program.

4. (a) What is Pointer in C? Define and declare pointer with example.

(b) Explain dynamic memory allocation functions in C with their syntax for any given example.

(c) What are various header files. Write the importance of header files.

5. (a) Explain the following :
    (i) fprint   (ii) beof   (iii) fflush   (iv) #

(b) How can we handle the file in 'C' ? Explain with program.

(c) Write a program for addition of two matrix.