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Roll No. ....

B. C. A. -I Sem.

**18002**

**B. C. A. Examination, Dec. 2016**

**Programming Principles & Algorithm**

**(BCA-102)**

**(New Course)**

*Time : Three Hours] [Maximum Marks : 75*

**Note :** Attempt questions from all Sections as per instructions.

**Section-A**

**(Very Short Answer Questions)**

Answer all the *five* questions. Each question carries 3 marks. Very short answer is required not exceeding 75 words.  $3 \times 5 = 15$

1. What do you understand by 'call by value'?
2. What do you understand by C tokens?
3. What do you understand by swapping?
4. What is preprocessor directives?
5. Why C language is known as procedural language?

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**Section-B**

**(Short Answer Questions)**

Answer any *two* questions out of the following three questions. Each question carries  $7\frac{1}{2}$  marks. Short answer is required not exceeding 200 words.  $7\frac{1}{2} \times 2 = 15$

6. Write a program in C to find out the number is even/odd.
7. Define flow chart. Draw a flow chart to find out the number is positive or not.
8. Write a program in C for recursion.

**Section-C**

**(Detailed Answer Questions)**

Answer any *three* questions out of the following five questions. Each question carries 15 marks. Answer is required in detail.  $15 \times 3 = 45$

9. What do you understand by problem solving techniques ? Explain divide and conquer.
10. Why time complexity is an important issue ? Explain.
11. Write a program to find out whether the given number is odd or even.
12. What is header files ? Explain with its types.
13. What is function ? Explain with its examples.



(iii) Write a 'C' program to find the sum of the first n numbers.

(iv) Distinguish between Break and Continue statement.

(v) Explain if-else and Nested-if-else with example.

13. Explain :

(i) Recursion with suitable example.

(ii) Storage class

(iii) Switch statement

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**Programming Principles & Algorithm**

(BCA-102)

(New Course)

*Time : Three Hours ]*

*[Maximum Marks : 75*

**Note :** Attempt questions from all sections as per instructions.

**Section-A**

**(Very Short Answer Questions)**

**Note :** Answer all the **five** questions. Each question carries 3 marks. Very short answer is required not exceeding 75 words.

3×5=15

1. What do you understand by swapping?

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2. Define time complexity.
3. What is flowchart? What are the various symbols used in drawing flow chart?
4. What is algorithm? Explain.
5. What are general characteristics of C?

### Section - B

#### (Short Answer Questions)

**Note :** Answer any **two** questions out of the following three questions. Each question carries 7.5 marks. Short answer is required not exceeding 200 words.  $7.5 \times 2 = 15$

6. Explain difference between Do-while and while loop with suitable example.
7. Define following terms with suitable example.
  - (i) Constant
  - (ii) Identifier
8. Write a flowchart to find the average of the marks obtained by a student in five subjects.

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### Section-C

#### (Detailed Answer Questions)

**Note :** Answer any **three** questions out of the following five questions. Each question carries 15 marks. Answer is required in detail.  $15 \times 3 = 45$

9. What is function? Explain with suitable examples.
10. What is Big-oh notation? What are limitations and properties of Big-oh notation? Explain in brief.
11. What is Operator? Explain it with its all types in C with complete description.
12. Attempt any **four** of the following :
  - (i) Explain Local and Global variables.
  - (ii) Write a 'C' program to accept number and find out whether it is even or odd.

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12. What is the use of loops in 'C' ? Also explain the types of loop with suitable example.
13. Write the asymptotic notations used for best case, average case and worst case analysis of algorithms.

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BCA-I Sem.

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**18002**

**B. C. A. Examination, Dec. 2018**

**Programming Principles & Algorithm**

**(BCA-102)**

**(New Course)**

*Time : Three Hours]*

*[Maximum Marks : 75*

**Note :** Attempt questions from all Sections as per instructions.

### **Section-A**

#### **(Very Short Answer Questions)**

Answer all the *five* questions. Each question carries 3 marks. Very short answer is required not exceeding 75 words.  $3 \times 5 = 15$

1. What do you mean by primitive and non-primitive data types ?



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2. What is Algorithm ? Define with example.
3. Explain the working of 'Nested if-else' with suitable example.
4. What is the use of get ch ( ) and get char ( ) functions in C language ?
5. Explain the use of break and continue statement.

#### Section-B

##### (Short Answer Questions)

Answer any *two* questions out of the following three questions. Each question carries  $7\frac{1}{2}$  marks. Short answer is required not exceeding 200 words.  $7\frac{1}{2} \times 2 = 15$

6. Write down the algorithm for solving towers of Hanoi problem.

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7. What is function ? Also explain the types of functions.
8. Explain the time and space complexity.

#### Section-C

##### (Detailed Answer Questions)

Answer any *three* questions out of the following five questions. Each question carries 15 marks. Answer is required in detail.  $15 \times 3 = 45$

9. Write an algorithm for finding maximum element of an array perform best, worst and average case complexity with appropriate order notations.
10. Differentiate between flowchart and algorithm. Write an algorithm to compute the Fibonacci series for 'n' terms.
11. What is operator ? Explain the different types of operator in 'C'.

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B.C.A.-I Sem.

**18002**

**B.C.A. Examination, November-2019**

**PROGRAMMING PRINCIPLES AND  
ALGORITHM**

**(BCA-102)**

*Time : Three Hours]*

*[Maximum Marks : 75*

**Note :** Attempt questions from **all** sections as per instructions.

**Section-A**

**(Very Short Answer Questions)**

**Note :** Answer all the *five* questions. Each question carries 3 marks. Very short answer is required not exceeding 75 words.  $5 \times 3 = 15$

1. Write the difference between variables and constants.
2. What do you understand by header files ?
3. What is use of FOR statement used in 'C' Language ?
4. What do you mean by complexity of an algorithm ?
5. Define storage classes.

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**[P.T.O.]**



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### Section-B

#### (Short Answer Questions)

**Note :** Answer any *two* questions out of the following three questions. Each question carries 7.5 marks. Short answer is required not exceeding 200 words.  $2 \times 7.5 = 15$

6. Explain the structure of 'C' programming with the help of suitable example.
7. Explain console based Input Output functions in 'C' language.
8. Distinguish between call by value and call by reference with the help of suitable example.

### Section-C

#### (Detailed Answer Questions)

**Note :** Answer any *three* questions out of the following five questions. Each question carries 15 marks. Answer is required in detail.  $3 \times 15 = 45$

9. What is preprocessor directives ? Discuss various types of preprocessors in C.
10. Differentiate among the three-goto, continue, break and exit statements by giving suitable examples.

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11. Explain Brain storming and divide of conquer problem solving technique in detail..
12. (i) Write a 'C' program to find the factorial of a given number.  
(ii) Write a program in C language to print the reverse of n digit number.
13. Explain the following :
  - (i) Keywords and Identifiers
  - (ii) Big-Oh notation
  - (iii) Swapping

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3. Define Recursion.
4. Write four preprocessor directives.
5. Write Syntax and usage of Ternary Operator.

### Section-B

#### (Short Answer Questions)

**Note :** Answer any **two** questions out of the following **three** questions. Each question carries **7½** marks. Short answer is required not exceeding 200 words.

$$7\frac{1}{2} \times 2 = 15$$

6. Write a program in C to find maximum of three numbers.
7. Write a program in C to calculate area of circle.
8. What is structure of 'C' program? Define it.

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### Section-C

#### (Detailed Answer Questions)

**Note :** Answer any **three** questions out of the following **five** questions. Each question carries **15** marks. Answer is required in detail.  $15 \times 3 = 45$

9. Why time Complexity is an important issue? Explain.
10. What do you mean by Call-by-value and Call-by-reference? Explain both in brief. Also explain difference between them.
11. Write a C Program using while loop to calculate the factorial of a given number.
12. What is array? Explain in brief. How array is declared in C ? Also write limitations of an array.

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13. Write note on :

- (a) Function
- (b) Header files
- (c) Flow chart
- (d) Extern storage class

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**B.C.A. Examination, Dec.-2020**  
**Programming Principles & Algorithm**  
**(BCA-102)**

*Time : Three Hours ]*

*[Maximum Marks : 75*

**Note :** Attempt questions from **all** sections  
as per instructions.

**Section-A**

**(Very Short Answer Questions)**

**Note :** Attempt all the **five** questions. Each  
question carries **3** marks. Very short  
answer is required not exceeding 75  
words.

3×5=15

1. What is variable?
2. What is interpreter?

**P.T.O.**



1. Write the use of comments in C program.
2. What do you understand by associativity and precedence of operators?
3. What do you mean by complexity of an algorithm?
4. What is scope of variable?
5. What do you mean by storage classes in C?

#### Section-B

##### (Short Answer Questions)

**Note :** Attempt any **one** questions out of the following **three** questions. Each question carries 15 marks. Short answer is required not exceeding 200 words.

$$1 \times 15 = 15$$

6. Explain print f( ) and scan f( ) function used in C program with the help of an example.

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7. Explain the different steps used to solve any problem.
8. Write a program in C language to check whether the given number is prime or not.

#### Section-C

##### (Detailed Answer Questions)

**Note :** Attempt any **two** questions out of the following **five** questions. Each question carries 22.5 marks. Answer is required in detail.

$$2 \times 22.5 = 45$$

9. Explain the logical and bitwise operators available in C with the help of suitable example.
10. Discuss the following with syntax and example :
  - (i) Get ch ( ), get char ( ), put char ( )
  - (ii) # include, # define

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