

**DEPARTMENT OF COMPUTER APPLICATIONS**

**INTERNAL AND EXTERNAL QUESTION PAPERS 2018-2022**

**2018-2019**

**GOVERNMENT ARTS AND SCIENCE COLLEGE FOR WOMEN, BARUGUR**

**DEPARTMENT OF COMPUTER APPLICATIONS**

**Cyclic Test 1 – August 2019**

Subject : Computer Applications for Office Automation  
Class : I BCA(Shift-I)

Duration: 2 Hrs  
Max. Marks: 50Marks

**PART A**

(10 x 1=10 Marks)

Answer all the questions.

1. A set of instructions is called \_\_\_\_\_  
a) Hardware b) Firmware c) Software
2. GIGO stands for  
a) Game In Game Out  
b) Garbage In Garbage Out  
c) Garbage Input Garbage Output
3. Who is the father of modern day computers?  
a) Charles Babbage b) John Von Neumann c) Blaise Pascal
4. Which one is volatile memory?  
a) ROM b) RAM c) PROM
5. The Memory unit also called as  
a) Internet Access Storage b) Immediate access Store c) Control Unit
6. ENIAC stands for  
a) Electronic Numerical Integrator and Calculator  
b) Electronic Numerical Information and Computer  
c) Electronic Number Integer and Calculator
7. What is the file extension of Microsoft Word?  
a) .doc b) .xls c) .dat
8. Which key is used to make a cancel selection in a menu?  
a) Enter b) Esc c) Del
9. Ctrl+C is a shortcut key for  
a) Copy b) Centre c) Close
10. How to select decrease Indent from the menu  
a) File→Paragraph→Indentation  
b) Format→Paragraph→Indentation  
c) Format→Indentation

**PART B**

(2\*5=10 Marks)

Answer any two Questions.

11. What is a computer? Explain the special characteristics of computer.
12. Write the generations of Computer.
13. Write short notes on some Dos's in Microsoft Word.
14. How to apply Edit menu while text editing?

**PART C**

(3\*10=30 Marks)

Answer all Questions.

15. a) Discuss the Functioning of the components in computer.  
(or)  
b) Discuss the History of Computer.
16. a) Write short notes on  
i) Mouse Operations ii) Keyboard Operations  
(or)  
b) Describe how to align texts and pictures in a document.
17. a) Explain about File Menu options in Microsoft Word.  
(or)  
b) Draw the icons and explain the word standard toolbars in Ms. Word.

*R. S. S. S.*  
2/8/19  
SUBJECT INCHARGE

*A. S. S. S.*  
HEAD OF THE DEPARTMENT

**GOVT ARTS AND SCIENCE COLLEGE FOR WOMEN, BARGUR**  
**DEPARTMENT OF COMPUTER APPLICATIONS**  
**CYCLIC TEST - I ( SEPTEMBER 2019)**

**SUBJECT:Data Structures .**  
**CLASS: II BCA(SII)**

**MARKS:50MARKS**  
**TIMING: 2 HOURS**

**PART - A. ( 2\*5 =10)**

**ANSWER ALL THE QUESTIONS:**

1. What is mean by algorithm
2. Define: Arrays
3. Define infix, postfix and prefix with example.
4. Write an algorithm for factorial calculation.
5. List out the types of data structures.

**PART - B. ( 4\*5 =20)**

**ANSWER ANY FOUR QUESTIONS:**

6. Write an algorithm for Sorting with example.
7. Write a short note on Design of an Algorithm.
8. Write an algorithm for Finding largest Number in an array
9. Write a Short note on arrays and it's types.
- 10.. Explain in detail about Factorial calculation using stack implementation.

**PART - C. ( 10\*2=20)**

**ANSWER ALL THE QUESTIONS:**

5. Explain in detail about steps involved in problem Solving.
6. Write a short note on:
  - i) Evaluation of an Arithmetic expression with example.
  - ii) Conversation infix expression to prefix and postfix expression with any examples.

Government Arts and Science College for Women-Barugur  
Model Examination (October-2019)  
III BCA(Shift-I)

Subject: Programming in Java  
Answer all Questions

Part-A

Total Marks: 75 Marks  
(2\*10=20 Marks)

1. What are java tokens?
2. What is JDK?
3. What is a constructor?
4. What is a final class?
5. What is an array?
6. What is a string?
7. What is meant by synchronization?
8. What is an applet and mention its types?
9. How will you draw a polygon in java?
10. Write a syntax to open an input file?

Answer all Questions

Part-B

(5\*5=25 Marks)

11. (a) Explain java Tokens? (Or)  
(b) Explain operators and expressions?
12. (a) What is method overloading explain with an example program? (Or)  
(b) Write a short note on decision making and looping?
13. (a) Write a short note on vectors and wrapper classes in java? (Or)  
(b) Explain packages with an example program?
14. (a) Explain the life cycle of a thread? (Or)  
(b) How Applets differ from applications?
15. (a) Write a short note on any five drawing methods of the graphics classes? (Or)  
(b) Explain in detail about stream classes in java?

Answer any THREE Questions

Part-C

(3\*10=30 Marks)

16. Explain Command line arguments with example program?
17. Explain in detail about decision making and looping?
18. Explain in detail about Multiple inheritance with an example?
19. Explain two types of Thread Creation?
20. Write a program to implement graphics in java?

*A. Anilkumar*  
Subject Incharge

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Head of the Department

18. What is multilevel inheritance? Explain with a java program.
19. What is the use of 'throws' in exception handling? Explain with a program.
20. Discuss in detail about any two AWT components and how the events are handled for the components?

S.No. 1829

12UCA09

(For the candidates admitted from 2012-2013 onwards)

B.C.A. DEGREE EXAMINATION, APRIL 2019.

Fifth Semester

PROGRAMMING IN JAVA

Time : Three hours

Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

All questions carry equal marks.

1. List any four java tokens.
2. Define a one dimensional array with five elements.
3. Define wrapper class.
4. How is an object instantiated?
5. What is the use of the keyword 'extends'?
6. Give an example to define a class as final.

4  
S.No. 1829

7. What is the use of finally keyword in exception handling?
8. Write any two examples for Arithmetic exception.
9. List the five methods in Applet.
10. Define Event.

PART B — (5 × 5 = 25 marks)

Answer ALL questions.

All questions carry equal marks.

11. (a) What are the string functions to concatenate two strings and comparing two strings? Write examples for each.  
Or  
(b) What is the use of while statement in java? Explain with an example.
12. (a) How is a wrapper class declared in Java? Explain with a program.  
Or  
(b) How is a package created and used in java programs?

2

S.No. 1829

13. (a) How is a class declared as abstract? Explain with a program.

Or

- (b) Define an interface to find area of triangle and rectangle and implement it in a class.

14. (a) Write a java program to catch 'Divide by Zero' Exception.

Or

- (b) What is the use of programmer defined exceptions? Explain.

15. (a) Write a java program to read a byte from one file and write it into another file.

Or

- (b) List any five types of Events and explain how it is invoked?

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

All questions carry equal marks.

16. What are the types of operator in Java? List them and explain its use.
17. Write a java program to declare an interface and extend it.

3

S.No. 1829

**2019-2020**

**GOVT ARTS AND SCIENCE COLLEGE FOR WOMEN, BARGUR  
DEPARTMENT OF COMPUTER APPLICATIONS  
CYCLIC TEST - I ( August 2019)**

**SUBJECT:Data Structures .  
CLASS: II BCA(SII)**

**MARKS:50MARKS  
TIMING: 2 HOURS**

**PART - A. ( 2\*5 =10)**

**ANSWER ALL THE QUESTIONS:**

- 1. What is mean by algorithm**
- 2. Define: Arrays**
- 3. Define infix, postfix and prefix with example.**
- 4. Write an algorithm for factorial calculation.**
- 5.List out the types of data structures.**

**PART - B. ( 4\*5 =20)**

**ANSWER ANY FOUR QUESTIONS:**

- 6. Write an algorithm for Sorting with example.**
- 7. Write a short note on Design of an Algorithm.**
- 8. Write an algorithm for Finding largest Number in an array**
- 9. Write a Short note on arrays and it's types.**
- 10.. Explain in detail about Factorial calculation using stack implementation.**

**PART - C. ( 10\*2=20)**

**ANSWER ALL THE QUESTIONS:**

- 5. Explain in detail about steps involved in problem Solving.**
- 6. Write a short note on:**
  - i) Evaluation of an Arithmetic expression with example.**
  - ii) Conversation infix expression to prefix and postfix expression with any examples.**

Government Arts and Science College for Women-Barugur  
Cyclic Test-II (September-2019)

II BCA(Shift-I)

Subject:Data Structures and Algorithm

Total Marks:50 Marks

Part-A(2\*5=10Marks)  
(Answer all Questions)

1. Define Queue.
2. Write enqueue and dequeue?
3. Define circular linked list with example?
4. Draw a tree with given notation(a(b(e.f(k,l))),c(g).d(h,i,j))?
5. What are the operations on binary tree?

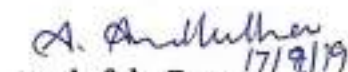
Part-B(4\*5=20Marks)  
(Answer all Questions)

6. Write about representation of queues.
7. Explain applications of linked lists.
8. Explain basic terminologies of tree in detail.
9. Write about representation of binary trees (Linear and Linked List).

Part-B(2\*10=20Marks)  
(Answer all Questions)

10. Explain various Queue structure.
11. Explain single and double linked list.

  
Subject Incharge

  
Head of the Department  
17/9/19



Government Arts and Science College for Women-Barugur  
Model Examination (October-2019)  
III BCA(Shift-I)

Subject: Programming in Java  
Answer all Questions

Part-A

Total Marks: 75 Marks  
(2\*10=20 Marks)

1. What are java tokens?
2. What is JDK?
3. What is a constructor?
4. What is a final class?
5. What is an array?
6. What is a string?
7. What is meant by synchronization?
8. What is an applet and mention its types?
9. How will you draw a polygon in java?
10. Write a syntax to open an input file?

Answer all Questions

Part-B

(5\*5=25 Marks)

11. (a) Explain java Tokens? (Or)  
(b) Explain operators and expressions?
12. (a) What is method overloading explain with an example program? (Or)  
(b) Write a short note on decision making and looping?
13. (a) Write a short note on vectors and wrapper classes in java? (Or)  
(b) Explain packages with an example program?
14. (a) Explain the life cycle of a thread? (Or)  
(b) How Applets differ from applications?
15. (a) Write a short note on any five drawing methods of the graphics classes? (Or)  
(b) Explain in detail about stream classes in java?

Answer any THREE Questions

Part-C

(3\*10=30 Marks)

16. Explain Command line arguments with example program?
17. Explain in detail about decision making and looping?
18. Explain in detail about Multiple inheritance with an example?
19. Explain two types of Thread Creation?
20. Write a program to implement graphics in java?

*A. Anil Kumar*  
Subject Incharge

*A. Anil Kumar*  
Head of the Department



(For the candidates admitted from 2019-2020 onwards)

B.Sc. DEGREE EXAMINATION, DECEMBER 2022.

Fifth Semester

Computer Science

Elective : PROBLEM SOLVING TECHNIQUES

Time : Three hours Maximum : 75 marks

PART A — (15 × 1 = 15 marks)

Answer ALL questions

- The set of instructions is called as \_\_\_\_\_  
(a) Independent (b) Input  
(c) Program (d) Output
- The method of divide and conquer is \_\_\_\_\_  
(a) Splitting (b) Proceeding  
(c) Strategy (d) Resulting
- An algorithm that tries to accommodate human limitations is \_\_\_\_\_  
(a) Break down (b) Strategy  
(c) Top - Down Design (d) Sub Problem
- The \_\_\_\_\_ count on RHS of expression assumes the role of previous count.  
(a) Current (b) Processed  
(c) input (d) output
- The exchange mechanism is most usefully implemented as \_\_\_\_\_  
(a) Variables (b) Procedures  
(c) exchange (d) elements
- In sine function computation, the algorithm can be completed by implementing addition and subtraction for appropriate \_\_\_\_\_  
(a) Predecessor (b) alternate  
(c) Termination (d) Summation
- As iterations increase, the square roots estimated with \_\_\_\_\_ iterations will become smaller.  
(a) Successive (b) Progressive  
(c) Iterative (d) Termination
- Divide the larger of two numbers by \_\_\_\_\_ number in greatest common divisor or two integers.  
(a) Larger number (b) Smaller number  
(c) Common number (d) Whole number

- \_\_\_\_\_ Generation are frequently used for testing and analyzing the behaviour of algorithms  
(a) sequence numbers  
(b) integer  
(c) random number  
(d) parameter
- The Problem of reversing the order of an array of numbers is completely \_\_\_\_\_  
(a) Reversing  
(b) ordering  
(c) straight forward  
(d) designing
- To find a maximum number in a set, the problem is to examine a particular set of \_\_\_\_\_  
(a) Process  
(b) numbers  
(c) lists  
(d) problem
- The number of comparisons to find the maximum in an array of  $n$  elements is \_\_\_\_\_  
(a)  $n-1$  (b)  $1 < i < n$   
(c)  $i=n$  (d)  $n > 1$
- Merging two arrays of \_\_\_\_\_ both with their elements in ascending order, into a single ordered array.  
(a) Process (b) integers  
(c) elements (d) strategy
- A single procedure \_\_\_\_\_ can be used to implement the merging and copying steps.  
(a) Value (b) Copy  
(c) Procedure (d) Merge Copy
- \_\_\_\_\_ of data is to use a selection method to achieve the desired ordering.  
(a) Value (b) Element  
(c) Managing (d) Sorting

PART B — (2 × 5 = 10 marks)

Answer any TWO questions

- List out the termination of Loops in detail.
- Write the description of the algorithm of Sine function computation.
- Describe the Algorithm development of generating Primer numbers.

19. List out the Loop condition to prevent the exchange while partitioning an array.
20. Write Algorithm Development of sorting by diminishing increment.

PART C— (5 × 10 = 50 marks)

Answer ALL questions

21. (a) Describe the Problem – solving aspect in detail.
- Or
- (b) Discuss about the Verification of program segments algorithm.
22. (a) Describe the Generation of Fibonacci sequence algorithm.
- Or
- (b) Discuss about the Summation of a set of numbers algorithm in detail.
23. (a) Elaborate raising a number to a large power algorithm with description.

Or

- (b) Expand Finding the square root of a number algorithm in detail.
24. (a) Discuss about the Algorithm development of Partitioning an Array.

Or

- (b) Describe the design steps on array order reversal.
25. (a) Discuss about the algorithm development of Sorting by Insertion.

Or

- (b) Describe the Implementation and description of Sorting by diminishing increment.

2020 – 2021

GOVERNMENT ARTS AND SCIENCE COLLEGE FOR WOMEN, BARGUR  
DEPARTMENT OF COMPUTER APPLICATIONS  
CYCLIC TEST I – FEB- 2021

Subject: RDBMS  
Class: II BCA(Shift II)

Max. Marks : 50  
Max. Hours : 2

SECTION – A (10\*1=10)

CHOOSE THE CORRECT ANSWER

1. The collections of data, usually referred to as the -----  
(a) Efficient (b) Database (c) Information.
2. The data values stored in the database must satisfy certain types of -----  
(a) Data Isolation (b) Concurrent Access (c) Consistency Constraints
3. The structure of a database is the -----  
(a) Data model (b) Physical schema (c) Logical schema
4. Entities are described in a database by a set of -----  
(a) Relationship (b) Entity (c) Attributes
5. ----- is a statement requesting the retrieval information.  
(a) DML (b) DDL (c) Query
6. A ----- is a set of one or more attributes that, allows us to identify uniquely an entity in the entity set.  
(a) candidate key (b) super key (c) primary key
7. ----- which denote derived attributes  
(a) Double ellipses (b) Double lines (c) Dashed ellipses
8. ----- for creating specification of various components of a software system.  
(a) DDL (b) DML (c) UML
9. ----- are a functions that take a single value.  
(a) Aggregate fn (b) Null values (c) set operations
10. ----- includes commands for access rights to relations and views  
(a) Authorization (b) Integrity (c) DDL

SECTION – B (4 X 5 = 20)

ANSWER ALL FOUR QUESTIONS

6. Explain DB languages.
7. Explain transaction management.
8. Explain set operation.
9. Explain embedded SQL.

SECTION – C (2 X 10 = 20)

ANSWER ANY TWO QUESTIONS

10. Briefly Explain DB system Architecture.
11. Briefly Explain Relational Databases & Relational Algebra.
12. Briefly Explain Nested Sub Queries & Dyanamic SQL.

  
SUBJECT INCHARGE

  
HEAD OF THE DEPARTMENT

GOVERNMENT ARTS AND SCIENCE COLLEGE FOR WOMEN, BARGUR  
DEPARTMENT OF COMPUTER APPLICATIONS

CYCLIC TEST II - APRIL-2021

Subject : MOBILE COMPUTING  
Class : III BCA(Shift-II) ~~SI~~

Max. Marks: 50  
Max. Hours: 2 Hrs

SECTION - A

ANSWER ALL QUESTIONS

(5 X 2 = 10)

1. What is a Protocols.
2. Define Telecommunication Systems.
3. What is mean Handover.
4. Define Bluetooth.
5. Define WATM.

SECTION - B

ANSWER ALL QUESTIONS

(4 X 5 = 20)

6. Explain DECT.
7. Explain the TETRA.
8. Define Basic of Satellite Systems.
9. Explain HIPERLAN with examples

SECTION - C

ANSWER ALL QUESTIONS

(2 X 10 = 20)

10. Briefly Explain GSM .
11. Briefly Explain Bluetooth.



GOVERNMENT ARTS AND SCIENCE COLLEGE FOR WOMEN, BARGUR  
DEPARTMENT OF COMPUTER APPLICATIONS  
MODEL EXAMINATION - APRIL-2021

Subject : MULTIMEDIA  
Class : III BCA (Shift-II)

Max. Marks: 75  
Max. Hours: 3 Hrs

SECTION - A

ANSWER ALL QUESTIONS

(10 X 2 = 20)

1. What is mean by Multimedia.
2. Define Vector Drawing
3. What is Hyper text?
4. Define Audio Recording
5. Define Animation
6. What is Creativity?
7. Define Digital Video?
8. What is Input Devices?
9. Define Alpha Development?
10. What Tracking?

SECTION - B

ANSWER ALL QUESTIONS

(5X 5 = 25)

11. Explain Multimedia Applications. Or Describe Computer and text.
12. Explain the Making Still Images. Or Explain Digital Audio.
13. Define Animation by Computer. Or Explain Digital Video Containers.
14. Explain Hardware. Or Explain Authoring Systems.
15. Explain Acquiring Talent. Or Explain Process of Making Multimedia.

SECTION - C

ANSWER ANY THREE QUESTIONS

(3X 10 = 30)

16. Briefly Explain Hyper text and Hyper Media.
17. Briefly Explain Adding Sound to your Multimedia Project.
18. Describe Shooting and Editing Video?
19. Define Making Multimedia Software?.
20. Explain Designing and Producing?

  
SUBJECT INCHARGE

  
HEAD OF THE DEPARTMENT





(For the candidates admitted from 2019-2020 onwards)

B.Sc. DEGREE EXAMINATION, DECEMBER 2022.

Fifth Semester

Computer Science

Elective : PROBLEM SOLVING TECHNIQUES

Time : Three hours Maximum : 75 marks

PART A — (15 × 1 = 15 marks)

Answer ALL questions

1. The set of instructions is called as \_\_\_\_\_  
(a) Independent (b) Input  
(c) Program (d) Output
2. The method of divide and conquer is \_\_\_\_\_  
(a) Splitting (b) Proceeding  
(c) Strategy (d) Resulting
3. An algorithm that tries to accommodate human limitations is \_\_\_\_\_  
(a) Break down (b) Strategy  
(c) Top - Down Design (d) Sub Problem

4. The \_\_\_\_\_ count on RHS of expression assumes the role of previous count.  
(a) Current (b) Processed  
(c) input (d) output
5. The exchange mechanism is most usefully implemented as \_\_\_\_\_  
(a) Variables (b) Procedures  
(c) exchange (d) elements
6. In sine function computation, the algorithm can be completed by implementing addition and subtraction for appropriate \_\_\_\_\_  
(a) Predecessor (b) alternate  
(c) Termination (d) Summation
7. As iterations increase, the square roots estimated with \_\_\_\_\_ iterations will become smaller.  
(a) Successive (b) Progressive  
(c) Iterative (d) Termination
8. Divide the larger of two numbers by \_\_\_\_\_ number in greatest common divisor or two integers.  
(a) Larger number (b) Smaller number  
(c) Common number (d) Whole number

9. \_\_\_\_\_ Generation are frequently used for testing and analyzing the behaviour of algorithms  
(a) sequence numbers  
(b) integer  
(c) random number  
(d) parameter
10. The Problem of reversing the order of an array of numbers is completely \_\_\_\_\_  
(a) Reversing  
(b) ordering  
(c) straight forward  
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11. To find a maximum number in a set, the problem is to examine a particular set of \_\_\_\_\_  
(a) Process  
(b) numbers  
(c) lists  
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12. The number of comparisons to find the maximum in an array of  $n$  elements is \_\_\_\_\_  
(a)  $n-1$  (b)  $1 < i < n$   
(c)  $i=n$  (d)  $n > 1$

13. Merging two arrays of \_\_\_\_\_ both with their elements in ascending order, into a single ordered array.  
(a) Process (b) integers  
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14. A single procedure \_\_\_\_\_ can be used to implement the merging and copying steps.  
(a) Value (b) Copy  
(c) Procedure (d) Merge Copy
15. \_\_\_\_\_ of data is to use a selection method to achieve the desired ordering.  
(a) Value (b) Element  
(c) Managing (d) Sorting

PART B — (2 × 5 = 10 marks)

Answer any TWO questions

16. List out the termination of Loops in detail.
17. Write the description of the algorithm of Sine function computation.
18. Describe the Algorithm development of generating Primer numbers.

19. List out the Loop condition to prevent the exchange while partitioning an array.
20. Write Algorithm Development of sorting by diminishing increment.

PART C— (5 × 10 = 50 marks)

Answer ALL questions

21. (a) Describe the Problem – solving aspect in detail.
- Or
- (b) Discuss about the Verification of program segments algorithm.
22. (a) Describe the Generation of Fibonacci sequence algorithm.
- Or
- (b) Discuss about the Summation of a set of numbers algorithm in detail.
23. (a) Elaborate raising a number to a large power algorithm with description.

Or

- (b) Expand Finding the square root of a number algorithm in detail.
24. (a) Discuss about the Algorithm development of Partitioning an Array.

Or

- (b) Describe the design steps on array order reversal.
25. (a) Discuss about the algorithm development of Sorting by Insertion.
- Or
- (b) Describe the Implementation and description of Sorting by diminishing increment.

2021 – 2022

Government Arts and Science College for Women, Bargur

Department of Computer Applications.

I cyclic Test - Sep 2022

Class : I BCA (SI & SII)

Max. Hours : 2

Subject : Problem Solving through C

Max. Marks : 50

PART - A (10x1 = 10)

Answer all the Questions

1. Who invented C Language?  
a) Dennis Ritchie b) Bjarne Stroustrup c) Ken Thomson d) Edger Dijkstra
2. Expand ANSI  
a) Asian National Standard Infrastructure b) American National Standard Institute  
c) Asian National Service Infrastructure d) American National Standard Information
3. The Compiler translates the source code to \_\_\_\_  
a) Source program b) object code c) executable code d) None of the above
4. The file extension for C language is \_\_\_\_  
a) .doc b) .CPP c) .C d) None of the above
5. \_\_\_\_ have fixed meanings and cannot be changed  
a) Character set b) Token c) Identifiers d) Keywords
6. C is \_\_\_\_ type of programming language  
a) Object Oriented b) Procedural c) Bit level language d) None of the above
7. Choose a conditional operator from the list?  
a) ? : b) : ? c) ! < d) < !
8. Find the correct C keyword.  
a) Float b) Int c) Ubuntu d) double
9. C Language was invented to develop which operating system?  
a) Android b) LINUX c) Ubuntu d) Unix
10. Operator % in C Language is called?  
a) Percentage b) Quotient c) Modulus d) Division

PART B (5x2 = 10)

Answer any two Questions

11. Write down the history of C language.
12. Write the short notes = keywords and Identifiers.
13. Define Data types and explain their types.

PART-C (3x10 = 30)

Answer any three Questions

14. Explain the structure of C program
15. Explain Constants and types of Constants
16. Explain the types of Operators
17. Explain about formatted Input
18. Define Variable and explain about the declaration of variables.

P. Jit  
Class Incharge

P. Jit  
Subject Incharge

A. Anil Kumar  
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**GOVERNMENT ARTS AND SCIENCE COLLEGE FOR WOMEN, BARGUR**  
**DEPARTMENT OF COMPUTER APPLICATIONS**  
**CYCLIC TEST II - OCTOBER 2022**

**CLASS : III BCA (SI&SII)**  
**SUBJECT: Problem Solving Techniques**

**MAX. HOURS: 2**  
**MAX. MARKS: 50**

**I. ANSWER ALL QUESTIONS SECTION - A (10X 1 = 10)**

1. \_\_\_\_\_ the large number of the two numbers by the smaller number  
a) Divide                      b) Multiple                      c) Set                      d) Add
2. \_\_\_\_\_ this element must be the greatest common divisor for the two integers.  
a) e and n                      b) t and n                      c) n and m                      d) m and n
3. A prime number is a positive integer that is divisible only by \_\_\_\_\_ and itself.  
a) 4                      b) 1                      c) 2                      d) 3
4. Linear 1 method to generate a \_\_\_\_\_ set of pseudo random numbers.  
a) Number                      b) sequence                      c) uniform                      d) normal
5. The second number can be greater than our temporary candidate for the \_\_\_\_\_.  
a) Minimum                      b) High                      c) Maximum                      d) Low
6. Partitioning array into \_\_\_\_\_ subset.  
a) One                      b) Two                      c) Three                      d) Four
7. \_\_\_\_\_ both the left and right partitions towards the middle.  
a) Growing                      b) Counting                      c) Element                      d) Digits
8. What is the application of array order reversal?  
a) Statistical analyses                      b) Mathematical expression                      c) Vector and Matrix processing                      d) Plotting
9. Which of the following is correct to declare an array?  
a) int array [10]                      b) int array                      c) array {10}                      d) array array [10]
10. What are the parameters used in the generation of Pseudo- Random numbers?  
a) a,b,c,m                      b) x<sub>0</sub>, a, b, m                      c) a,b,c                      d) None of the above

**II. ANSWER ANY TWO QUESTIONS SECTION - B (2 X 5 = 10)**

11. Elucidate raising a number to a large power.
12. Write short notes on finding the maximum number in a set.
13. Explain about generating a Pseudo- random numbers.

**III. ANSWER ANY THREE QUESTIONS. SECTION - C (3 X 10 = 30)**

14. Describe in detail about the greatest common divisor of two integers with suitable algorithms.
15. Write in detail about square root of a number.
16. Explain the concept of removal of duplicates from an ordered array.
17. Write in detail about Partitioning an array.



**Government Arts and Science College for women, Bargur**  
**Department of Computer Applications**  
**Model Examination June 2022**

Subject: Operating System  
Class: II BCA (SI & SII)

Max. hours: 3  
Max. marks: 75

**PART – A (15 X 1 = 15)**

**I. ANSWER ALL QUESTIONS**

1. Which of the following is not an operating system?  
a) Windows b) Linux c) Oracle
2. When was the first operating system developed?  
a) 1945 b) 1950 c) 1951
3. The Kernel mode is also known as \_\_\_\_  
a) Supervisor Mode  
b) Unsupervisor Mode  
c) Outlier Mode
4. The main memory accommodates \_\_\_\_  
a) CPU b) core process c) OS
5. Which one of the following can not be scheduled by the kernel?  
a) kernel level thread  
b) user level thread  
c) process
6. If the resources are always pre-empted from the same process \_\_\_\_ can occur  
a) deadlock b) System crash c) starvation
7. The request and release of resources are \_\_\_\_  
a) Interrupts b) System calls  
c) Special programs
8. \_\_\_\_ is the number of jobs per hour that system completes  
a) Throughput b) Response time  
c) Turnaround time
9. The formula for CPU utilization?  
a)  $1-p^2$  b)  $1-p$  c)  $p^2$
10. The virtual address space is divided into units called \_\_\_\_  
a) page frame b) pages c) frames
11. The LRU stands for \_\_\_\_  
a) Long Recently Used b) Last Recently Used  
c) Least Recently Used
12. In Deadlock, the processes can be represented by \_\_\_\_  
a) Circle b) Rectangle c) Square

13. Which algorithm is used for deadlock avoidance?  
a) bidding algorithm b) banker's algorithm  
c) neither (a) nor (b)
14. \_\_\_\_ module itself controls exchange of data between main memory and the I/O devices  
a) RAM b) DMA c) ROM
15. MBR stands for \_\_\_\_  
a) Mode Boot Record  
b) Modify Boot Record  
c) Master Boot Record

**PART – B (2 X 5 = 10)**

**II. ANSWER ANY TWO QUESTIONS**

16. Explain the system calls for file management.
17. Write a short note on Thread model
18. Explain about paging.
19. Define deadlock and explain the conditions of deadlock.
20. Explain about memory mapped I/O.

**PART – C (5 X 10 = 50)**

**III. ANSWER ALL QUESTIONS**

21. a) Describe about operating system concepts (OR)  
b) Explain detailed about operating system structure.
22. a) Discuss about process creation, process termination and process states. (OR)  
b) Discuss mutual exclusion with busy waiting.
23. a) Explain round robin scheduling algorithm (OR)  
b) Explain detailed about First in first out page replacement algorithm.
24. a) Discuss detailed about Banker's algorithm (OR)  
b) Describe about multiprocessor synchronization.
25. a) Explain about DMA (OR)  
b) Explain detailed about directories

SUBJECT INCHARGE

HEAD OF THE DEPARTMENT

(For the candidates admitted from 2021-2022 onwards)  
B.C.A. DEGREE EXAMINATION, DECEMBER 2022.

Third Semester

DATA STRUCTURE AND ALGORITHMS

Time : Three hours

Maximum : 75 marks

SECTION A — (15 × 1 = 15 marks)

Answer ALL questions.

- Which of this best describes an array?  
(a) data structure that shows a hierarchical behavior  
(b) Container of objects of similar types  
(c) Arrays are immutable once initialised  
(d) Array is not a data structure
- In general, the index of the first element in an array is \_\_\_\_\_  
(a) 0 (b) 1  
(c) -1 (d) 2

- What is a hash function?  
(a) A function has allocated memory to keys  
(b) A function that computes the location of the key in the array  
(c) A function that creates an array  
(d) A function that computes the location of the values in the array
- A technique for direct search is \_\_\_\_\_  
(a) Binary Search  
(b) Linear Search  
(c) Tree Search  
(d) Hashing
- Breadth First Search is used in  
(a) Binary trees (b) Stacks  
(c) Graphs (d) Arrays
- When several elements are competing for the same bucket in the hash table is called \_\_\_\_\_  
(a) Diffusion (b) Replication  
(c) Collision (d) Duplication

- A linear collection of data elements where the linear node is given by means of pointer is called \_\_\_\_\_  
(a) Linked list  
(b) Node list  
(c) Primitive list  
(d) Nonprimitive list
- In doubly linked lists, traversal can be performed \_\_\_\_\_  
(a) Only in forward direction  
(b) Only in reverse direction  
(c) In both directions  
(d) Circular direction
- The number of edges from the root to the node is called \_\_\_\_\_ of the tree.  
(a) Height (b) Depth  
(c) Length (d) Width
- Which of the following is not an advantage of trees?  
(a) Hierarchical structure  
(b) Faster search  
(c) Router algorithms  
(d) Undo/Redo operations in a notepad

- What is direct addressing?  
(a) Distinct array position for every possible key  
(b) Fewer array positions than keys  
(c) Fewer keys than array positions  
(d) Same array position for all key
- What is the worst-case complexity of bubble sort?  
(a)  $O(n \log n)$  (b)  $O(\log n)$   
(c)  $O(n)$  (d)  $O(n^2)$
- How many passes does an insertion sort algorithm consist of?  
(a) N (b) N-1  
(c) N+1 (d) N2
- Which of the following algorithm implementations is similar to that of an insertion sort?  
(a) Binary heap (b) Quick sort  
(c) Merge sort (d) Radix sort
- Merge sort uses which of the following techniques to implement sorting?  
(a) backtracking  
(b) greedy algorithm  
(c) divide and conquer  
(d) dynamic programming

SECTION B — (2 × 5 = 10 marks)

Answer any TWO questions out of Five.

16. Write short note on analysis of algorithm.
17. Describe about garbage collection with example.
18. Explain about graph traversal.
19. Discuss about the static tree table.
20. How to organize a file? Explain with example.

SECTION C — (5 × 10 = 50 marks)

Answer ALL questions.

21. (a) Explain about the queue and its applications.

Or

- (b) How to evaluate an expression? Explain with example.

22. (a) Elucidate about polynomial addition with example.

Or

- (b) Illustrate about linked stack with example.

5

S.No. 2530

23. (a) Explain about the binary tree representation with example.

Or

- (b) Discuss about shortest path problem with example.

24. (a) Write about the overflow handling.

Or

- (b) Discuss about K-way merging with example.

25. (a) Explicate about the 2-way merge sort with example.

Or

- (b) Explain the index techniques with example.

6

S.No. 2530

**2022 – 2023**

**GOVERNMENT ARTS AND SCIENCE COLLEGE FOR WOMEN, BARGUR**

**DEPARTMENT OF COMPUTER APPLICATIONS**

**CYCLIC TEST I – AUGUST 2022**

**CLASS: I BCA (SI & SII)**

**MAX. MARKS: 50**

**SUBJECT: Structured Programming Language in C**

**MAX. HOURS: 2**

**PART – A (10 X 1 = 10)**

**ANSWER ALL THE QUESTIONS**

**1. Who invented C Language?**

- a. Dennis Ritchie      b. Bjarne Stroustrup      c. Ken Thomson      d. Edsger Dijkstra

**2. Expand ANSI**

- a. Asian National Standard Infrastructure      b. American National Standard Institute  
c. Asian National Service Infrastructure      d. American National Standard Information

**3. The Compiler translates the source code to \_\_\_\_\_**

- a. source program      b. object code      c. executable code      d. none of the above

**4. The file extension for C language is \_\_\_\_\_**

- a. .DOC      b. .CPP      c. .C      d. None of the above

**5. \_\_\_\_\_ have fixed meanings and cannot be changed**

- a. Character Set      b. Token      c. Identifiers      d. Keywords

**6. C is \_\_\_\_\_ type of programming language**

- a. Object Oriented      b. Procedural      c. Bit level language      d. None of the above

**7. Choose a conditional operator from the list?**

- a. ?:      b. :?      c. :<      d. <:

**8. Find a correct C keyword**

- a. Float      b. Int      c. Ubuntu      d. double

**9. C Language was invented to develop which operating system?**

- a. Android      b. Linux      c. Ubuntu      D. Unix

**10. Operator % in C language is called?**

- a. Percentage      b. Quotient      c. Modulas      d. Division

**PART – B (5 X 2 = 10)**

**ANSWER ANY TWO QUESTIONS**

11. Write down the importance of C language.  
12. Write the short notes keywords and identifiers.  
13. Define Data types and explain their types.

**PART – C (3 X 10= 30)**

**ANSWER ANY THREE QUESTIONS**

13. Explain the structure of C program.  
14. Explain Constants and types of Constants.  
15. Explain the types of Operators.  
16. Explain the types of if statement.

SUBJECT INCHARGE

HEAD OF THE DEPARTMENT

**GOVERNMENT ARTS AND SCIENCE COLLEGE FOR WOMEN, BARGUR**  
**DEPARTMENT OF COMPUTER APPLICATIONS**  
**CYCLIC TEST – II (OCTOBER 2022)**

**Class:** III B.C.A (SI & SII)

**Max. Hours:** 2

**Subject:** PROBLEM SOLVING TECHNIQUES

**Max. Marks:** 50

**PART – A (10 X 1 =10)**

**ANSWER ALL QUESTIONS**

**1. An ASCII character '0' equivalent decimal value is \_\_\_\_\_**

- a) 48                      b) 49                      c) 50                      d) 51

**2. An \_\_\_\_\_ function accepts on 8-bit character as its argument & returns as output its corresponding decimal value**

- a) abs( )                      b) org( )                      c) trun( )                      d) None of the above

**3.  $23_{10} = ?_2$**

- a) 00111                      b) 1011                      c) 11011                      d) 10111

**4. \_\_\_\_\_ is a collections of data that share a common attribute**

- a) Pointer                      b) Array                      c) Union                      d) None of the above

**5. How many exchanges are needed to reverse arrays with either 6 or 7 elements in arrays?**

- a) 4                      b) 3                      c) 2                      d) 1

**6. Which method is used to generate a uniform set of pseudo-random numbers?**

- a) Linear Congruential Method                      b) Linear Compression Method  
c) Both a and b                      d) None of the above

**7. Which expression is used to generate pseudo-random number**

- a)  $x_{n+1} = (ax+b) \bmod m$                       b)  $x_{n+1} = (ax_n+b) \bmod m$   
c)  $x_{n+1} = (ax_n+b) \bmod n$                       d)  $x_{n+1} = (ax_{n+1}) \bmod m$

**8. The \_\_\_\_\_ of two integers is the largest integer that will divide exactly into the two integers with no remainder.**

- a) GCD                      b) LCM                      c) Both a and b                      d) None of the above

**9. What is the expansion of ANSI?**

- a) Asian National Standard Code for Information Interchange  
b) Asian National Standard Code for International Interchange  
c) American National Standard Code for Information Interface  
d) American National Standard Code for Information Interchange

**10. An application of Array Counting is**

- a) Allocation Problems                      b) Simulation Analysis                      c) Games                      d) Statistical Analysis

**PART B (5 X 2= 10)**

**ANSWER ANY TWO QUESTIONS**

11. Write the algorithm for Character to Number Conversion.  
12. Write an algorithm for generation of pseudo-random numbers.  
13. Write an algorithm for array order reversal.

**PART C (10 X 3 = 30)**

**ANSWER ANY THREE QUESTIONS**

14. Discuss in detail about finding the square root of a number.
15. Discuss in detail about the Greatest Common Divisor of two integers.
16. Write an algorithm for raising a number to a large power.
17. Write an algorithm for Array Counting

**SUBJECT INCHARGE  
DEPARTMENT**

**HEAD OF THE**

**Government Arts and Science College for Women, Barugur  
Department of Computer Applications  
Model Exam – Nov 2022**

**Class : II BCA (SI & SII)  
Subject: Data Structures and Algorithms**

**Marks: 75  
Time: 3Hrs**

**Section-A (Answer ALL questions) 15\*1=15**

1. In a stack, if a user tries to remove an element from an empty stack, the situation is called:  
**(a) Underflow (b) Empty collection (c) Overflow (d) Garbage collection**
2. If the elements "A", "B", "C" and "D" are placed in a queue and are deleted one at a time, in what order will they be removed?  
**(a) ABCD (b) DCBA (c) DCAB (d) ABDC**
3. Which operation can be performed on an array?  
**a. Traversing b. Merging c. Sorting d. All of the above**
4. What is the time complexity to count the number of elements in the linked list?  
**a) O(1) b) O(n) c) O(logn) d) O(n<sup>2</sup>)**
5. Which of these is not an application of a linked list?  
**a) To implement file systems b) For separate chaining in hash-tables  
c) To implement non-binary trees d) Random Access of elements**
6. Polynomial addition is implemented using \_\_\_\_ data type.  
**a) Queue b) linked list c) stack d) trees**
7. What is a full binary tree?  
**a) Each node has exactly zero or two children b) Each node has exactly two children c)  
All the leaves are at the same level  
d) Each node has exactly one or two children**
8. What is the number of edges present in a complete graph having n vertices?  
**a) (n\*(n+1))/2 b) (n\*(n-1))/2 c) n d) Information given is insufficient**
9. Which of the following ways can be used to represent a graph?  
**a) Adjacency List and Adjacency Matrix b) Incidence Matrix  
c) Adjacency List, Adjacency Matrix as well as Incidence Matrix  
d) No way to represent**
10. What is a hash table?  
**a) A structure that maps values to keys b) A structure that maps keys to values c) A  
structure used for storage**

**d) A structure used to implement stack and queue**

11. What is the hash function used in the division method?

a)  $h(k) = k/m$  b)  $h(k) = k \bmod m$  c)  $h(k) = m/k$  d)  $h(k) = m \bmod k$

12. If several elements are competing for the same bucket in the hash table, what is it called?

a. diffusion b. replication c. collision d. duplication

13. The time complexity of heap sort is \_\_\_\_\_

a.  $O(n)$  b.  $O(\log n)$  c.  $O(n^2)$  d.  $O(n \log n)$

14. A \_\_\_\_\_ is the smallest addressable segment of a track

a. sector b. cylinder c. surface d. tapes

15. A directory is a collection of \_\_\_\_\_.

a. tapes b. indexes c. surface d. files

**Section-B (Answer Any Two)**

**2\*5=10**

16. Write short note on representation of arrays.

17. Describe about singly linked list with example.

18. Explain about binary tree.

19. Discuss about the dynamic tree table.

20. Explain insertion sort with an example.

**Section-C (Answer All questions)**

**5\*10=50**

21. a) Explain about the stack implementation with example. (OR)

b) How to convert an infix expression to postfix expression? Explain with example.

22. a) Elucidate about doubly linked list with example (OR)

b) Illustrate about dynamic storage management

23. a) Explain about the binary tree traversal with example. (OR)

b) Discuss about spanning tree with example.

24. a) Write about the hashing functions. (OR)

b) Discuss about storage devices with example.

25. a) Explain about sequential organization. (OR)

b) Explain in detail on Merge sort with example.

**SUBJECT INCHARGE**

**HEAD OF THE DEPARTMENT**





(For the candidates admitted from 2019-2020 onwards)

B.Sc. DEGREE EXAMINATION, DECEMBER 2022.

Fifth Semester

Computer Science

Elective : PROBLEM SOLVING TECHNIQUES

Time : Three hours Maximum : 75 marks

PART A — (15 × 1 = 15 marks)

Answer ALL questions

- The set of instructions is called as \_\_\_\_\_  
(a) Independent (b) Input  
(c) Program (d) Output
- The method of divide and conquer is \_\_\_\_\_  
(a) Splitting (b) Proceeding  
(c) Strategy (d) Resulting
- An algorithm that tries to accommodate human limitations is \_\_\_\_\_  
(a) Break down (b) Strategy  
(c) Top - Down Design (d) Sub Problem
- The \_\_\_\_\_ count on RHS of expression assumes the role of previous count.  
(a) Current (b) Processed  
(c) input (d) output
- The exchange mechanism is most usefully implemented as \_\_\_\_\_  
(a) Variables (b) Procedures  
(c) exchange (d) elements
- In sine function computation, the algorithm can be completed by implementing addition and subtraction for appropriate \_\_\_\_\_  
(a) Predecessor (b) alternate  
(c) Termination (d) Summation
- As iterations increase, the square roots estimated with \_\_\_\_\_ iterations will become smaller.  
(a) Successive (b) Progressive  
(c) Iterative (d) Termination
- Divide the larger of two numbers by \_\_\_\_\_ number in greatest common divisor or two integers.  
(a) Larger number (b) Smaller number  
(c) Common number (d) Whole number

2

S.No. 2247

- \_\_\_\_\_ Generation are frequently used for testing and analyzing the behaviour of algorithms  
(a) sequence numbers  
(b) integer  
(c) random number  
(d) parameter
- The Problem of reversing the order of an array of numbers is completely \_\_\_\_\_  
(a) Reversing  
(b) ordering  
(c) straight forward  
(d) designing
- To find a maximum number in a set, the problem is to examine a particular set of \_\_\_\_\_  
(a) Process  
(b) numbers  
(c) lists  
(d) problem
- The number of comparisons to find the maximum in an array of  $n$  elements is \_\_\_\_\_  
(a)  $n-1$  (b)  $1 < i < n$   
(c)  $i=n$  (d)  $n > 1$
- Merging two arrays of \_\_\_\_\_ both with their elements in ascending order, into a single ordered array.  
(a) Process (b) integers  
(c) elements (d) strategy
- A single procedure \_\_\_\_\_ can be used to implement the merging and copying steps.  
(a) Value (b) Copy  
(c) Procedure (d) Merge Copy
- \_\_\_\_\_ of data is to use a selection method to achieve the desired ordering.  
(a) Value (b) Element  
(c) Managing (d) Sorting

PART B — (2 × 5 = 10 marks)

Answer any TWO questions

- List out the termination of Loops in detail.
- Write the description of the algorithm of Sine function computation.
- Describe the Algorithm development of generating Primer numbers.

3

S.No. 2247

4

S.No. 2247  
[P.T.O.]

19. List out the Loop condition to prevent the exchange while partitioning an array.
20. Write Algorithm Development of sorting by diminishing increment.

PART C— (5 × 10 = 50 marks)

Answer ALL questions

21. (a) Describe the Problem – solving aspect in detail.
- Or
- (b) Discuss about the Verification of program segments algorithm.
22. (a) Describe the Generation of Fibonacci sequence algorithm.
- Or
- (b) Discuss about the Summation of a set of numbers algorithm in detail.
23. (a) Elaborate raising a number to a large power algorithm with description.

Or

- (b) Expand Finding the square root of a number algorithm in detail.
24. (a) Discuss about the Algorithm development of Partitioning an Array.

Or

- (b) Describe the design steps on array order reversal.
25. (a) Discuss about the algorithm development of Sorting by Insertion.

Or

- (b) Describe the Implementation and description of Sorting by diminishing increment.