

F-7155

Sub. Code

7BCE1C1

B.Sc. DEGREE EXAMINATION, APRIL 2022

First Semester

Computer Science

PROGRAMMING IN C

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Define keywords and identifiers.
2. List any four mathematical functions
3. Specify the syntax for else if ladder.
4. Why we use continue statement?
5. Mention the memory representation of an array.
6. What is the use of strcmp()?
7. Define recursion.
8. Differentiate structure and array.
9. What is pointer to pointer in C?
10. What are command line arguments?

Part B

(5 × 5 = 25)

Answer **all** questions choosing either (a) or (b).

11. (a) Describe the importance of C.

Or

- (b) Write a short note on relational and logical operators.

12. (a) Write a program to find the factorial of a given number.

Or

- (b) What is switch case? Give out its syntax with an example.

13. (a) Briefly explain dynamic arrays.

Or

- (b) Give a brief on reading and writing strings.

14. (a) What are the elements of user defined function? Explain.

Or

- (b) Explain scope visibility and life time of variables.

15. (a) How to declare and initialize pointers?

Or

- (b) Write about error handling during IO operations.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Write a detailed note on data types with example.
17. Explain nesting of if else statement and for loop.
18. Write a program to add and subtract the matrices using array.
19. Explain about structure with example program.
20. Write a program to calculate student mark processing and store the information in file.

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Sub. Code

7BCE2C1

B.Sc. DEGREE EXAMINATION, APRIL 2022.

Second Semester

Computer Science

OBJECT ORIENTED PROGRAMMING WITH C++

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Give any four advantages of OOPS.
2. What is function prototype?
3. Define parameterized constructor
4. What are the properties of a static member function?
5. List out the operators that cannot be overloaded.
6. Define multi-level inheritance.
7. What are manipulators?
8. What are output streams?
9. How to close a file? Give Syntax.
10. Write the syntax of `getline ()` and `write ()` functions.

Part B

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Write short notes on User defined data types in C++.

Or

- (b) Write in detail about Inline function.

12. (a) What are the ways in which a constructor can be called?

Or

- (b) How are member functions different from other global functions?

13. (a) Write short notes on single inheritance with a C++ program.

Or

- (b) Write short notes on hybrid inheritance with a C++ program.

14. (a) Explain a pure virtual function with an example.

Or

- (b) Differentiate between formatted and unformatted I/O operations in C++.

15. (a) Describe the different modes in which files can be opened in C++.

Or

- (b) Give a note on Sequential files and its input operations.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Briefly discuss on Class and object in C++ with its syntax.
17. Explain the difference between constructor and copy constructor in C++. Which of these is invoked in the following statement?

Date D1 (D2); where D2 is also an object of class Date.

18. With appropriate examples explain "friend class" and "Friend function" in detail.
19. Explain in detailed about Manipulators.
20. Briefly discuss on Function Template. Write a C++ program to explain the same.

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Sub. Code

7BCE3C1

B.Sc. DEGREE EXAMINATION, APRIL 2022

Third Semester

Computer Science

DATA STRUCTURES AND COMPUTER ALGORITHMS

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What is meant by Array?
2. Give an example for Linked List.
3. Define Stack.
4. What is called Circular queue?
5. What is meant by Tree?
6. What are the different methods Tree traversals?
7. What is called Algorithm?
8. Define Binary Search.
9. List any two benefits of Greedy Method.
10. Define Graph.

Part B

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) List any five benefits of using Data Structures for a program.

Or

- (b) Differentiate circular linked list from singly linked list.

12. (a) Give an example for Stack.

Or

- (b) Define queue. Brief how it is differ from stack.

13. (a) Discuss how does binary tree represented.

Or

- (b) Describe in brief about Expression Trees with example.

14. (a) What is meant by Performance Analysis of an Algorithm?

Or

- (b) Discuss the working of Quick Sort with an example.

15. (a) Write a note on Job Sequencing problem.

Or

- (b) State and Explain Travelling Salesman Problem.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. What is called Doubly Linked List? Explain it in detail.
 17. Write a note on operations of array based linked list with an example.
 18. Discuss about Threaded Tree in detail.
 19. What is called sorting? Explain its types.
 20. Illustrate the working of Prim's Algorithm.
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Sub. Code

7BCE4C1

B.Sc. DEGREE EXAMINATION, APRIL 2022

Fourth Semester

Computer Science

JAVA PROGRAMMING

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What is web browsers?
2. What is type casting?
3. What is the purpose of Bitwise operators?
4. Write any four mathematical functions.
5. How are strings handled in Java?
6. What is the purpose of keyword 'final'?
7. What is the need for package?
8. How to access a package?
9. Write methods to draw lines and rectangles.
10. How to pass parameters to the Applet?

Part B

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Explain structure of a Java program.

Or

- (b) Discuss “How Java is platform independent”.

12. (a) Discuss operator precedence of Arithmetic, relational and logical operators.

Or

- (b) Compare if... elseif with switch statement.

13. (a) Write a Java program to illustrate method overloading.

Or

- (b) Explain about abstract class.

14. (a) How are exception handled in Java?

Or

- (b) How to throw an exception?

15. (a) Explain methods used to draw polygons and line graph.

Or

- (b) How to use control Loops in Applets?

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Explain features of Java.

17. Write a Java program to arrange given Ten names in alphabetical order.

18. Write a Java program to illustrate defining and implementing interface.
 19. Explain life cycle of a thread.
 20. Explain Applet life cycle.
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7BCE5C1

B.Sc. DEGREE EXAMINATION, APRIL 2022

Fifth Semester

Computer Science

OPERATING SYSTEM

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What are the goals of operation system?
2. List the two components of an operating systems.
3. What is critical section problem?
4. List the disadvantages of Petersons solution.
5. List two preemptive scheduling algorithms
6. Define Deadlock.
7. What is external fragmentation?
8. What is virtual memory?
9. Why we need disk scheduling?
10. What is mounting?

Part B

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Explain the goals of an Operating System.

Or

- (b) Describe shared memory concept in Inter process communication.

12. (a) What are all the criteria that solution to critical section problem should satisfy? Explain.

Or

- (b) What is semaphores? How semaphores can be operated? Give code using semaphore how it manages the critical section?

13. (a) Explain the bankers algorithm in detail.

Or

- (b) Explain what will happen if the time quantum of the round robin scheduling is very large? Give example wherever necessary.

14. (a) What is Belady's anomaly? Where does it occur? Give your own example and show the occurrence of this anomaly.

Or

- (b) Explain segmentation in detail with diagram.

15. (a) Write a short note on file access control.

Or

- (b) Explain about rotational optimization in brief.

Part C

(3 × 10 = 30)

Answer any **three** questions.

- 16. Discuss the components of the operating system in detail.
- 17. Explain semaphore and its types in detail.
- 18. Consider the following set of processes, with the length of the CPU-burst time given in milliseconds:

Process	Burst Time	Priority
P ₁	10	3
P ₂	1	1
P ₃	2	3
P ₄	1	4
P ₅	5	2

The processes are assumed to have arrived in the order P₁ P₂, P₃, P₄, P₅ all at time 0. Draw Gantt charts illustrating the execution of these processes using FCFS, SJF and round robin scheduling algorithm with time quantum as 1.

- 19. Explain all the page replacement algorithms in detail.
- 20. Explain the various disk scheduling algorithm in detail.

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7BCE5C2

B.Sc. DEGREE EXAMINATION, APRIL 2022

Fifth Semester

Computer Science

RELATIONAL DATABASE MANAGEMENT SYSTEMS

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What are the components of storage manager?
2. Define strong and weak entity sets.
3. What is normalization?
4. What are multivalued dependencies?
5. List the network types.
6. What are parallel databases?
7. Write the use of index.
8. Define view.
9. Differentiate between %ROWTYPE and TYPE RECORD.
10. Write the basic parts of a trigger.

Part B

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Describe the different views of data.

Or

- (b) What are the different types of database end users? Discuss the main activities of each.

12. (a) Describe the use of functional dependency in normalization of database.

Or

- (b) Write a note on modeling temporal data.

13. (a) Discuss the components of client server model.

Or

- (b) Briefly explain distributed data storage.

14. (a) What are data integrity constraints? Explain.

Or

- (b) Discuss the use of synonyms with example.

15. (a) What is a cursor? Why is it required?

Or

- (b) Compare functions and procedures in PL/SQL.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Explain Entity Relationship model with example diagram.
 17. Describe the different normal forms of databases.
 18. Write a detailed note on distributed transaction
 19. Explain about creating and maintaining tables with examples.
 20. What is PL/SQL package? Explain in detail.
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Sub. Code

7BCEE1B

B.Sc. DEGREE EXAMINATION, APRIL 2022

Fifth Semester

Computer Science

Elective – WEB DESIGN

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What is HTML?
2. What are the types of list supported by HTML?
3. Mention the need for Cascading Style Sheets.
4. What are external style sheets?
5. List some features of Javascript.
6. How to use external javascript file?
7. What is global function?
8. What is the use of Boolean object in JavaScript?
9. What is DOM?
10. Define Namespace.

Part B

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Give the overview and structure of HTML documents.

Or

- (b) Explain the importance of Frame tag in HTML.

12. (a) Write a note on embedded stylesheets?

Or

- (b) Discuss about positioning elements in stylesheet.

13. (a) Compare while and do while with example.

Or

- (b) What are logical operators? Give example.

14. (a) How to create programmer defined functions in JavaScript?

Or

- (b) Demonstrate Date object with example.

15. (a) Write a note on DOM collections and dynamic styles.

Or

- (b) Explain about event object.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. What are HTML form elements? Develop an Student registration form using HTML Form elements.
17. Write a detailed note on CSS.
18. Explain various control structures in JavaScript with example.
19. Write a javascript program to sort n numbers.
20. Explain XSLT in detail with example.

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Sub. Code

7BCEE2A

B.Sc. DEGREE EXAMINATION, APRIL 2022

Fifth Semester

Computer Science

**Elective – DIGITAL PRINCIPLES AND COMPUTER
ORGANIZATION**

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. List the types of Number Systems.
2. Write the Truth Table of NAND Gate.
3. Define Karnaugh Map.
4. What is called Parity Bit?
5. Give an example for Binary Substraction.
6. Find the Two's complement of 11010101_2 .
7. Define Bus.
8. What is called Cache Memory?
9. State any two functions of CPU.
10. What is called Peripheral Devices?

Part B

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Distinguish ASCII code from Gray Code.

Or

- (b) Discuss the functionality of Digital Logic Gates.

12. (a) State and Prove Associative Law.

Or

- (b) Discuss the properties of BCD decoders.

13. (a) What is meant by Arithmetic Circuits? Explain it with an example.

Or

- (b) Discuss the working of 2's complement with an example.

14. (a) What is called Stored Program Organization? Brief it.

Or

- (b) Describe the working of Symbolic micro program.

15. (a) What is called Register Organization? Give an example for it.

Or

- (b) Describe about Pipeline processing with an example.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. What is Logic gate? Explain its types with a neat diagram.
 17. Solve $F(P, Q, R, S) = \sum(0, 2, 5, 7, 8, 10, 13, 15)$ using K-MAP.
 18. Explain the functionality of Arithmetic Building Blocks.
 19. Explain Control Memory Organization with a neat illustration.
 20. Discuss Memory Hierarchy with an example.
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Sub. Code

7BCE6C1

B.Sc. DEGREE EXAMINATION, APRIL 2022.

Sixth Semester

Computer Science

COMPUTER NETWORKS

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Define bandwidth and latency.
2. State the layers in a TCP/IP protocol suite.
3. What is synchronization?
4. List some guided transmission media used in a network.
5. What is framing?
6. Define checksum.
7. What are the responsibilities of network layer in internet model?
8. What is segmentation?
9. List any two application layer protocols and their functionalities.
10. What is a cipher?

Part B

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) List and explain briefly the computer network software components.

Or

- (b) List and explain the network connecting devices.

12. (a) Compare and contrast circuit switching and packet switching networks.

Or

- (b) Explain Public Switched Telephone Network briefly.

13. (a) Explain sliding window protocol using Go Back-N technique.

Or

- (b) Explain CDMA and TDMA briefly.

14. (a) Explain briefly Internet protocol(IP).

Or

- (b) Explain the features of TCP. Compare it with UDP.

15. (a) Discuss the architecture of WWW.

Or

- (b) Explain the importance of securing a network and explain how cryptography can secure a network.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Explain the various network topologies in detail.

17. Write notes on communication satellites.

18. Explain error detection and error correction codes in detail.
 19. Discuss about the various elements of transport protocols.
 20. Explain DNS in detail.
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Sub. Code

7BCE6C2

B.Sc. DEGREE EXAMINATION, APRIL 2022.

Sixth Semester

Computer Science

COMPUTER GRAPHICS

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What is frame buffer?
2. Define antialiasing.
3. What is polygon filling? Name two algorithms for polygon filling.
4. What does display file contain?
5. What happens after rotation about an arbitrary point?
6. What is segment table?
7. Define clipping.
8. What is view port?
9. What is meant by event handling?
10. Name four input devices and state their role in computer graphics applications.

Part B

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Describe character generation.

Or

- (b) Explain vector generation.

12. (a) Describe display file structure and interpreter.

Or

- (b) Explain line style primitives.

13. (a) Describe the functions for creating, closing, deleting and renaming segments.

Or

- (b) Explain inverse transformation.

14. (a) Describe viewing transformation.

Or

- (b) Explain the procedure for polygon clipping.

15. (a) Explain locator.

Or

- (b) Describe echoing.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Explain Bresenham's Line drawing algorithm.

17. Describe polygon filling algorithm and inside-outside tests.

18. Explain the transformations with necessary mathematical equations.
 19. Explain Cohen Sutherland algorithm.
 20. Describe the interaction modes for input devices.
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Sub. Code

7BCE6C3

B.Sc. DEGREE EXAMINATION, APRIL 2022.

Sixth Semester

Computer Science

SOFTWARE ENGINEERING

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What is meant by organizational structure?
2. Define software engineering.
3. What are recurrence relations? Give an example for recurrence relation.
4. State the problems in using LOC for soft cost estimation.
5. What is modularization?
6. What are milestones in software development life cycle?
7. State the differences between verification and validation.
8. What are walkthroughs?
9. Define software maintenance. -
10. What is the need for source code metrics?

Part B

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Discuss the factors that affect productivity.

Or

- (b) Explain the various activities in planning.

12. (a) Describe the components of software requirements specification.

Or

- (b) Explain any three formal specification techniques.

13. (a) Describe the salient features of Jackson structured programming.

Or

- (b) Explain stepwise refinement.

14. (a) Describe the approaches for debugging.

Or

- (b) Explain the coding standards.

15. (a) Explain the strategies for enhancing maintainability.

Or

- (b) Write a note on maintenance tools.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Describe the process of planning a software project.

17. Explain the various software cost estimation techniques.

18. Explain the design notations and techniques.
 19. Explain the methods for unit testing.
 20. Describe the software configuration management process.
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Sub. Code

7BCEE3A

B.Sc. DEGREE EXAMINATION, APRIL 2022.

Sixth Semester

Computer Science

Elective : VB.NET AND ASP.NET PROGRAMMING

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What is VB.NET?
2. How to create a constant in VB.NET?
3. What is the purpose of VB.NET RadioButton control?
4. State the need of Tree View control.
5. What is a stream in VB.NET?
6. Explain usage of FileInfo class.
7. What is the difference between Server.Transfer and Response.Redirect?
8. Define ViewState.
9. What is meant by Data Source Control?
10. Define Data Binding.

Part B

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Discuss various TypeConversion functions in VB.Net.

Or

- (b) Explain “Function Returning Value” with suitable example.

12. (a) Elucidate the importance of TextBox and Label control with examples.

Or

- (b) Confer the usage of Tree and List Views

13. (a) Discuss “Multiple Inheritance” with a program example.

Or

- (b) Elucidate the importance of “FileStream” class with example.

14. (a) Discuss the properties of “Server Control”.

Or

- (b) Explain “RangeValidator” control.

15. (a) Illustrate the design of ADO.Net object model and its data organization.

Or

- (b) Explain the SQL Insert, Delete and Update Statements with suitable examples.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Confer the phrase “Exception Classes” in VB.Net
 17. Discuss “MDI” with a program example
 18. Explain Stream Reader and Stream Writer Class with suitable examples
 19. Elucidate any two RichControls of ASP with examples
 20. Enlighten the architecture ADO.Net with its approach of handling the data.
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Sub. Code

7BCEE3B

B.Sc. DEGREE EXAMINATION, APRIL 2022.

Sixth Semester

Computer Science

**Elective – PROGRAMMING WITH LINUX, APACHE,
MYSQL, AND PHP (LAMP)**

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Define Loops.
2. Define Code blocks.
3. Define Returning values in PHP.
4. Define Static statement in PHP.
5. What is File Uploads?
6. What is User Define Arrays?
7. Define Appending.
8. Define Popen().
9. Define Commands in MySQL.
10. Define Table creation in MySQL.

Part B

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Write short notes on Data types of PHP.

Or

- (b) Explain the Switching flow of PHP?

12. (a) How to use Dates and Times concept in PHP?

Or

- (b) Explain the Strings of PHP.

13. (a) Discuss the Destroying Sessions and Un-setting Variables in detail.

Or

- (b) Discuss the Passing Session IDs in the Query String.

14. (a) Explain the Drawing a New Image.

Or

- (b) Discuss about the Executing System Commands.

15. (a) Discuss about the connection between MySQL with PHP.

Or

- (b) Explain about the primary keys in MySQL?

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Explain the Installing and Configuring Procedure of MySQL in Windows Platforms detail?
 17. Discuss the String formatting, investigating and manipulating with PHP.
 18. Discuss the Sending Mail on form Submission in detail.
 19. Discuss the Getting fancy with pie charts.
 20. Explain about the inserting and retrieving data from PHP in detail.
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