A–10094

Sub. Code
4BCE1C1

B.Sc. DEGREE EXAMINATION, APRIL 2021 &

Supplementary/Improvement/Arrear Examinations

First Semester

Computer Science

PROGRAMMING IN C

(CBCS – 2014 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is the difference between & and &&.
2. What is the purpose of math. h file?
3. Why goto statements are discouraged?
4. What is subscripted variable?
5. What are actual and formal agreements?
6. What is the use of strcpy () function?
7. Give any two uses of pointer in C.
8. Define :Union.
9. Name the two types of files.
10. Give the two forms of file inclusion.

Part B (5 × 5 = 25)

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

11. (a) Describe the structure of C program.

Or

(b) What are the ways in which printf () can be used?

12. (a) Compare the switch-case structure with if- else structure. Which is more convenient? Give an example.

Or

(b) Write a program to pick alternate values from array A and store them in reverse order in another array B.

13. (a) Write a program to reverse a given string.

Or

(b) Explain the syntax of function declaration in C language.

14. (a) What is a pointer variable? When pointers are useful?

Or

(b) How structures are defined in C?

15. (a) Describe any three memory allocation functions.

Or

(b) Explain the functions fread () and fwrite()

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. List the various operators that are used in C language and explain.

17. Develop a program that finds and displays the number and sum of all integers greater than 100 less than 200 that are divisible by 7.

18. Write a program to evaluate the services using recursive call:

$$f(x) = 1 - \frac{x^2}{2!} + \frac{x^4}{4!} - \frac{x^6}{6!} + ...$$

19. Using pointers, Write a program to multiply two matrices.

20. What is preprocessor? What are the facilities offered by the preprocessor? Explain them.

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A–10095

Sub. Code
4BCE2C1

B.Sc. DEGREE EXAMINATION, APRIL 2021 &

Supplementary/Improvement/Arrear Examinations

Second Semester

Computer Science

PROGRAMMING IN C++ AND DATA STRUCTURES

(CBCS – 2014 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is the fundamental idea behind object-oriented languages?

2. What do you mean by function overloading?

3. Distinguish between an object and class.

4. Define: Constructor.

5. What are abstract classes?

6. What is "this" pointer?

7. Find the postfix form of infix form A+B/C–D.

8. Write down any two applications of stack.

9. Define the following:

(a) Siblings

(b) Degree of a tree.

10. What is adjacency matrix of a graph?

Part B $(5 \times 5 = 25)$

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

11. (a) Explain the while and do-while statement with examples.

Or

(b) What are inline functions? Discuss its advantages and disadvantages.

12. (a) Write a C++ program to exchange values between two classes. Use Friend function.

Or

(b) Describe the type conversions with examples.

13. (a) Where do we use virtual functions? Give its applications.

Or

(b) What are abstract and virtual base classes? Describe.

14. (a) Write a procedure to evaluate the postfix expression.

Or

(b) What is queue? Explain the various operations performed in queue.

15. (a) Explain the various representations of Binary Tree.

Or

(b) Define any five terminologies related to graphs.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Explain about the basic, derived and user defined data types in C++.

17. Write a C++ program to generate Fibonacci series using recursion with member function.

18. What are the different types of inheritance? Explain.

19. What is a stack? Write an algorithm to insert and delete an element in a stack and explain it.

20. What are the ways to traverse a binary tree? Explain with an example.

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A–10096

Sub. Code
4BCE3C1

B.Sc. DEGREE EXAMINATION, APRIL 2021 &

Supplementary/Improvement/Arrear Examinations

Third Semester

Computer Science

JAVA PROGRAMMING

(CBCS – 2014 onwards)

Time: 3 Hours Maximum: 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. What is a token? List the various types of tokens supported by Java.
2. What is the use of Web Browser?
3. What are the advantages of shorthand assignment operator?
4. Find the value of 14% (– 3).
5. What is a vector? How is it different from an array?
6. How is a method defined?
7. What are the types of error?
8. What is the use of thread priorities?
9. Differentiate between local applet and remote applet.
10. Write the arguments used in the method draw RoundRect( ).

Part B (5 × 5 = 25)

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

11. (a) What is World Wide Web? What is the contribution of Java to the World Wide Web?

Or

(b) Describe the structure of Java Program.

12. (a) What are the different types of if statements available in Java? Illustrate with an example.

Or

(b) Develop a Java program to illustrate the use of ternary operator.

13. (a) What is meant by method overriding? How can we access an overridden method?

Or

(b) How to define a class? How to add methods to classes?

14. (a) Explain with an example how a Java performs thread synchronization.

Or

(b) What is a finally block? When and how is it used? Give a suitable example.

15. (a) How do applets differ from application programs?

Or

(b) Explain the three ways of drawing polygons.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Explain the features of Java.

17. Discuss the three loop constructs in Java with examples.

18. Write a java program, which will read a string and rewrite it in the alphabetical order.

19. What is a package? How to create a package?

20. Describe the different stages in the life cycle of an applet.

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A–10097

Sub. Code
4BCE4C1

B.Sc. DEGREE EXAMINATION, APRIL 2021 &

Supplementary/Improvement/Arrear Examinations

Fourth Semester

Computer Science

WEB DESIGN TECHNOLOGY

(CBCS – 2014 onwards)

Time: 3 Hours Maximum: 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Write the basic tags in HTML.
2. What is meant by unordered list?
3. What is conflicting style?
4. How do you build a dropdown menu?
5. Write the general form of switch statement in Java script.
6. Differentiate break and continue statement.
7. What is meant by recursion?
8. What is meant by document object?
9. What is XML?
10. What are XML vocabularies?

Part B (5 × 5 = 25)

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

11. (a) How do you formatting text?

Or

(b) Write the HTML tag to create a form.

12. (a) Write short notes on inline styles.

Or

(b) Briefly explain media types.

13. (a) Explain about operators in Java script.

Or

(b) Describe the for statement in Java script.

14. (a) Write a note on global functions.

Or

(b) Illustrate on string and window objects.

15. (a) Elucidate on DOM collections.

Or

(b) Describe about XML name spaces.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Design a table and perform formatting by using HTML tags.

17. Explain how do you link external style sheets?

18. Enumerate on while and do…while structure in Java script.

19. Give a note on Java script arrays and explain with an example program.

20. Explain about Java script events.

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A–10098

Sub. Code
4BCE5C1

B.Sc. DEGREE EXAMINATION, APRIL 2021 &

Supplementary/Improvement/Arrear Examinations

Fifth Semester

Computer Science

OPERATING SYSTEM

(CBCS – 2014 onwards)

Time: 3 Hours Maximum: 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Define operating system.
2. What are the services provided by an OS?
3. What is meant by process?
4. How do you perform inter process communication?
5. What is semaphore?.
6. Define deadlock.
7. What is meant by swapping?
8. What is meant by thrashing?
9. What is a file?
10. What are file access methods?

Part B (5 × 5 = 25)

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

11. (a) Differentiate parallel and distributed systems.

Or

(b) Write a note on I/O structure.

12. (a) Write short notes on process scheduling.

Or

(b) Illustrate on thread scheduling.

13. (a) Explain about process synchronization.

Or

(b) Describe the task solutions.

14. (a) Write a note on memory management.

Or

(b) Illustrate on allocation of frames.

15. (a) Elucidate on directory structure.

Or

(b) Describe about free space management.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Describe the operating system general system architecture.

17. Explain any two scheduling algorithms.

18. Enumerate the methods for handling deadlocks.

19. Discuss about virtual memory,

20. Explain about file allocation methods.

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A–10099	Sub. Code
	4BCE5C2

B.Sc. DEGREE EXAMINATION, APRIL 2021 &

Supplementary/Improvement/Arrear Examinations

Fifth Semester

Computer Science

VISUAL BASIC

(CBCS – 2014 onwards)

Time: 3 Hours Maximum: 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What are named arguments?
2. What is use of Exit statement?
3. How will you hide a form in VB?
4. List any six basic properties of Text Box.
5. Define: Twips.
6. How will you fill shapes in VB?
7. What is the use of common dialog control?
8. How MDI differs from SDI?
9. What is ADO data model?
10. How can you validate data?

Part B (5 × 5 = 25)

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

11. (a) Write a note on Functions and Subroutines with examples.

Or

(b) Write a VB Program to convert the given integer value into equivalent binary, octal and Hexadecimal based on users choice of conversion.

12. (a) Describe the method of creating menu in VB with Menu Editor.

Or

(b) Explain the working of Textbox control with an example.

13. (a) How will you draw and fill shapes in VB? Discuss.

Or

(b) Discuss the drawing modes and drawing curves.

14. (a) Write a note on structuring Tree View control.

Or

(b) What is the use of Multiple Document Interface? Explain.

15. (a) Explain the use of data control with an example.

Or

(b) Write a note on data environment.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Explain the working of select….case statement and if….else statement with examples.

17. Describe the working of List Box and Combo Box with examples.

18. Discuss the various graphics methods of VB with examples.

19. Write a detailed note on Common Dialog control usage with an example.

20. Explain the role of ADO connectivity with database in handling data.

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A–10100

Sub. Code
4BCEE1A

B.Sc. DEGREE EXAMINATION, APRIL 2021 &

Supplementary/Improvement/Arrear Examinations

Fifth Semester

Computer Science

Elective- DATA MINING AND DATA WAREHOUSING

(CBCS – 2014 onwards)

Time: 3 Hours Maximum: 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Why data need to be cleaned and checked?
2. What are the operations performed by load manager?
3. What is the responsibility of configuration manager?
4. Define: Metadata.
5. What do you mean by visualization?
6. What is the use of regression?
7. What is dimensional modeling?
8. What are the problems faced from conventional search engine?
9. Define: confidence for an association rule.
10. What is called partioning?

Part B (5 × 5 = 25)

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

11. (a) What are the three major driving factors supported for data warehouse architecture? Explain.

Or

(b) Explain the query management process.

12. (a) What are the three main features required for the management of backup? Describe.

Or

(b) Write a short note on fixed queries and ad hoc queries.

13. (a) What is KDD? Explain the five steps involved in KDD process.

Or

(b) Write a short note on data mining metrics.

14. (a) Explain fuzzy sets and fuzzy logic.

Or

(b) Describe the Bayes theorem with an example.

15. (a) Give an example for Apriori with transactions and explain Apriori–gen algorithm.

Or

(b) What are advanced association rule techniques? Explain.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Discuss about the data warehouse delivery process.

17. What are the three different data warehouse process managers? Describe.

18. Discuss the important implementation issues associated with data mining.

19. What is OLAP? Explain the various types of OLAP operations supported by OLAP tools.

20. Explain parallel and distributed algorithm.

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A–10101

Sub. Code
4BCEE1B

B.Sc. DEGREE EXAMINATION, APRIL 2021 &

Supplementary/Improvement/Arrear Examinations

Fifth Semester

Computer Science

Elective — MULTIMEDIA TECHNOLOGY

(CBCS – 2014 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all the** questions.

1. What is meant by multimedia?
2. Expand CDROM.
3. What is the use of MP3?
4. How do you add sound to multimedia?
5. What is the need of text in MM?
6. What are the text file formats?
7. What is meant by morphing?
8. What are animation file formats?
9. What are multimedia skills?
10. What is the role of multimedia team?

Part B (5 × 5 = 25)

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

11. (a) Write the classifications of multimedia.

Or

(b) Write a note on multimedia hardware.

12. (a) Write short notes on digital audio technology.

Or

(b) Illustrate on audio file formats.

13. (a) Explain about multimedia graphics.

Or

(b) Describe the scanning and digital photography.

14. (a) How video works? Explain.

Or

(b) Illustrate on digital video fundamentals.

15. (a) Elucidate on stages of multimedia project.

Or

(b) Describe about authoring in multimedia.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Describe the applications of multimedia,

17. Discuss the fundamentals of MIDI.

18. Elucidate the digital image fundamentals.

19. Discuss about broadcast video standards.

20. Explain the planning and costing of a multimedia project.

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A–10102

Sub. Code
4BCEE2A

B.Sc. DEGREE EXAMINATION, APRIL 2021 &

Supplementary/Improvement/Arrear Examinations

Fifth Semester

Computer Science

Elective — DATABASE MANAGEMENT SYSTEMS

(CBCS – 2014 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all the** questions.

1. List out the various Database System applications.
2. What do you mean by data Abstraction?
3. What is atomic domain?
4. Define BCNF.
5. Give the merits and demerits of Client-Server systems.
6. What is Interquery Parallelism?
7. What is Integrity Constraint?
8. Define Views.
9. How PL/SQL works?
10. Write the syntax for creating a function.

Part B (5 × 5 = 25)

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

11. (a) Explain the purpose of Database systems.

Or

(b) Describe the issues of E-R design.

12. (a) Discuss the concept of BCNF and Dependency Preservation.

Or

(b) What is Dependency Preservation? Explain.

13. (a) Describe the various types of Networks.

Or

(b) Explain the concept of Distributed Query Processing.

14. (a) Discuss the method of creating a Table in oracle.

Or

(b) Write a note on creating and deleting Sequence with examples.

15. (a) Explain the structure of PL/SQL block with example.

Or

(b) Describe the working of commit and rollback transaction.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Explain the concept of Entity-Relationship Model with an example

17. Describe the Functional-Dependency Theory in detail.

18. Write a detailed note on I/O Parallelism.

19. Discuss the concept of Privilege in detail.

20. Explain the concept of creating a Stored Procedure with an example.

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A–9700

Sub. Code
4BCE6C1

B.Sc. DEGREE EXAMINATION, APRIL 2021 &

Supplementary/Improvement/Arrear Examinations

Sixth Semester

Computer Science

COMPUTER NETWORKS

(CBCS – 2014 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. What do you mean by unicasting?
2. List out the five service primitives of connection oriented service.
3. Give any two uses of fiber optics.
4. What is CDMA?
5. What is Hamming distance?
6. What is Ethernet?
7. Compare Virtual-Circuit and Datagram Subnets.
8. What is transport entity?
9. What is the role of name server?
10. What is URL?

Part B (5 × 5 = 25)

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

11. (a) Write a note on LAN, MAN and WAN with neat diagram.

Or

(b) Explain the concept of Connection-Oriented and Connectionless Services.

12. (a) Discuss the use of Twisted Pair and Coaxial Cable.

Or

(b) Write a short note on Communication Satellites.

13. (a) Describe the concept of Protocol Using Selective Repeat.

Or

(b) Write a note on Carrier Sense Multiple Access Protocols.

14. (a) Explain the working of Hierarchical Routing.

Or

(b) Discuss the Transport Service Primitives.

15. (a) Describe the DNS Name space.

Or

(b) Describe the substitution ciphers with suitable examples.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Describe the TCP/IP reference model in detail.

17. Explain the concept of wireless transmission.

18. Describe the design issues of data link layer.

19. Explain the working of Shortest Path and Distance Vector routing.

20. Discuss in detail about Electronic Mail.

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A–9701

Sub. Code
4BCE6C2

B.Sc. DEGREE EXAMINATION, APRIL 2021 &

Supplementary/Improvement/Arrear Examinations

Sixth Semester

Computer Science

COMPUTER GRAPHICS

(CBCS – 2014 onwards)

Time : Three Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. Define Pixel.
2. What is called vector?
3. What is the use of display control?
4. What is called line style primitive?
5. Define – scaling transformations.
6. How to delete a segment?
7. What is arbitrary line?
8. What is called clipping?
9. Define- hardware
10. What is attribute?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Discuss about the line segment and perpendicular line.

Or

(b) Define-frame buffer and explain about display the frame buffer.

12. (a) Briefly explain about the display devices.

Or

(b) What are all the programming problems faced in graphics?

13. (a) Write short notes on sin and cos rotation.

Or

(b) How to create a segment table? Give an example.

14. (a) Describe the method of viewing transformation.

Or

(b) Describe the Sutherland – Hodgman algorithm.

15. (a) Briefly explain about the sampled devices.

Or

(b) Write short notes on event handling.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Discuss the bresenham's algorithmic with an example.

17. Write the polygon filling procedure and explain with an example.

18. Explain the scaling transformation procedure in detail.

19. Describe the Cohen Sutherland procedure.

20. Discuss about the interactive techniques that are used in computer graphics.

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A–9702

Sub. Code
4BCE6C3

B.Sc. DEGREE EXAMINATION, APRIL 2021 &

Supplementary/Improvement/Arrear Examinations

Sixth Semester

Computer Science

SOFTWARE ENGINEERING

(CBCS – 2014 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. Define - software engineering.
2. List out the size factors of software engineering.
3. Write about the software requirements.
4. What is the use of cost estimation technique?
5. Why we need test plan of software engineering?
6. Write the hierarchy of bottom up approach.
7. What is the use of testing process?
8. What is white box testing?
9. What do you mean by metrics?
10. What are all the managerial aspects of software engineering?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Explain the planning of software development process.

Or

(b) Discuss about the quality and productivity factors of software engineering.

12. (a) What are all the formal specification techniques used in software engineering?

Or

(b) Describe the software requirements of SE.

13. (a) Explain the software design guidelines.

Or

(b) Write short notes on the modules and modularization criteria.

14. (a) Explain verification and validation activities.

Or

(b) Write the guidelines that are to be followed to have a good coding style.

15. (a) Write short notes about the managerial aspects of software engineering.

Or

(b) Briefly explain the source code matrices.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Discuss the distribution of effort in the software life cycle.

17. Explain COCOMO estimation model with its calculation.

18. Explain Jackson structured programming concepts with an example.

19. Compare and analysis contrast functional testing with system testing.

20. Discuss about the configuration management of software engineering.

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A–9703

Sub. Code
4BCEE3A

B.Sc. DEGREE EXAMINATION, APRIL 2021 &

Supplementary/Improvement/Arrear Examinations

Sixth Semester

Computer Science

Elective-MOBILE COMMUNICATION

(CBCS – 2014 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. List any two mobile and wireless devices.
2. What is Line-of-sight?
3. Define Hidden Terminal problem.
4. Write the three services offered by GSM.
5. Distinguish between infrared and radio waves in wireless communication.
6. What is wireless ATM?
7. State the use of DHCP.
8. Mention the goal of M-TCP.
9. Expand
   (a) HTTP
   (b) WAP
10. Why do we need WCMP?

Part B $(5 \times 5 = 25)$

Answer **all** questions.

11. (a) Explain shortterm and longterm fading.

Or

(b) Describe the three basic digital modulation techniques.

12. (a) Define the motivation for a specialized MAC.

Or

(b) Discuss TDMA.

13. (a) What are the reasons that led to the development of WATM? Explain.

Or

(b) Write a note on Bluetooth, protocol stack.

14. (a) What are the requirements accompanied the development of mobile IP's standard?

Or

(b) Write about "Tunneling".

15. (a) Describe WWW.

Or

(b) What are the approaches that might help wireless access?

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Explain signals.

17. Elaborate the need and important of satellite systems.

18. Discuss HIPERLAN.

19. Explain mobile transport layer with necessary diagrams.

20. What is WAP? Explain.

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A–9704	Sub. Code
	4BCEE3B

B.Sc., DEGREE EXAMINATION, APRIL 2021 &

Supplementary/Improvement/Arrear Examinations

Sixth Semester

Computer science

Elective – C# .NET PROGRAMMING

(CBCS – 2014 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. State any two most important highlights of C# language.
2. "C# is a freeform language": Comment.
3. What is the purpose of a constructor in a structure?
4. What is unboxing?
5. Write the general form of switch statement.
6. What is the purpose of using a finally block?
7. How to set simple breakpoints?
8. Define the term "Security".
9. What is the use of creating a window based application?
10. What is numeric formatting?

Part B (5 × 5 = 25)

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

11. (a) What is .NET technology? Explain briefly its origin.

Or

(b) Explain the structure of C# program.

12. (a) Distinguish between classes and structs.

Or

(b) What is enumeration? How is it useful in C# programming?

13. (a) Write a C# program to find the factorial of a given number.

Or

(b) Compare while and do while statements in C#.

14. (a) How to invoke the platform in C#? Explain.

Or

(b) What is component? Explain.

15. (a) What is a thread? Explain the concept of multithreading?

Or

(b) Enumerate the steps involved in creating and using a delegate.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Discuss the various components of .NET platform.

17. Design a class named Date with the following members:

    Date members day, month and year.

    A Constructor to provide values to the date members

    A method to display the date in the format day/month/year.

    Write a C# program to implement the class Date.

18. What are the various forms of if statement and write their specific uses.

19. Explain the documentation and comments in XML.

20. Describe the tasks involved in handling exceptions.

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A–10175	Sub. Code
	4BCESA1

UG. DEGREE EXAMINATION, APRIL 2021 &

Supplementary/Improvement/Arrear Examinations

Computer Science

Allied - DIGITAL ELECTRONICS AND COMPUTER ARCHITECTURE

(CBCS – 2014 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define nibble.
2. What is the binary number for decimal 20?
3. Differentiate between Halfadder and full adder.
4. How PAL is differ from a PROM?
5. Define flip flop.
6. What is meant by circulating register?
7. Define zero adderss instruction.
8. What are the major characteristics of a RISC processor?
9. What is the difference between Random Access memory and read only memory?
10. Define hit ratio.

Part B (5 × 5 = 25)

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

11. (a) How to convert decimal 1993 to a binary number?

Or

(b) Write short notes about Boolean algebra and its applications.

12. (a) Draw and explain a binary halfadder. Find out its sum and carry bit outputs.

Or

(b) Define decoder. Draw and explain the working of a 1 to 16 line decoder.

13. (a) Draw and explain the working of a JK flip flop. Also Explain the race around problem

Or

(b) Write short notes on ring counter.

14. (a) What is reverse polish notation? How to evaluate arithmetic expression using reverse polish notation?

Or

(b) Write short notes of three address instruction.

15. (a) Explain about RAM chips with neat diagram and its function table.

Or

(b) Write short notes on (i) magnetic tape (ii) magnetic disk.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Minimize the Boolean function $f(A,B,C) = \overline{A}\ \overline{B}\,\overline{C} + \overline{A}\ B\,\overline{C} + \overline{A}\ B\,C$ using karnaugh map

17. What is PLA? How does a PLA differ from PLA? Explain with neat diagram.

18. Define flip flop. Explain about the basic four flip flop types with neat sketch.

19. Explain about data manipulation instructions and its types with examples.

20. What is meant by virtual memory? Explain about the concept of address space and memory space with diagram.

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A–10176	Sub. Code
	4BCESA2

U.G. DEGREE EXAMINATION, APRIL 2021 &

Supplementary/Improvement/Arrear Examinations

Computer Science

Allied — MICROPROCESSORS AND INTERFACING

(CBCS – 2014 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What are the two modes of operations present is 8086?

2. What is the data and address size is 8086?

3. Mention the use LEA instruction with an example.

4. What is subroutine?

5. State the function of MIN/MAX pin in 8086.

6. What is USART?

7. What do you understand by ‘ peripheral’?

8. What is the function of a CRT controller?

9. How physical address is calculated in 8086?

10. Differentiate 80286 and 80386 descriptions.

Part B (5 × 5 = 25)

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

11. (a) What are the different flags in 8086? Explain.

Or

(b) What is the purpose of segment registers in 8086? Discuss.

12. (a) List and explain the I/O instructions of 8086.

Or

(b) Discuss the shift and rotational instructions of 8086 with illustrations.

13. (a) Explain the working of programmable interval timer 8253.

Or

(b) Why an interrupt controller is required? Explain the interrupt controller of 8259.

14. (a) Explain the function of a keyboard in a computer.

Or

(b) Briefly explain the different types of printers.

15. (a) Distinguish multilevel tasks and multiple tasks with reference to 80386.

Or

(b) Discuss briefly about the 80286 protection mechanism.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Describe the internal architecture of 8086.

17. What are the addressing modes used in 8086? Explain.

18. With a neat block diagram, explain the internal architecture of 8255 and its registers.

19. Explain the working principle of a CRT display unit in detail.

20. With a neat diagram explain the internal architecture of 80286.

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A–10177	Sub. Code
	4BCESA3

U.G. DEGREE EXAMINATION, APRIL 2021 &

Supplementary / Improvement / Arrear Examinations

Computer Science

Allied – RESOURCE MANAGEMENT TECHNIQUES

(CBCS – 2014 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is Operations Research?

2. What are the steps involve in Operation Research?

3. State the purpose of Artificial variable.

4. Define : unbounded solution.

5. Give ant two applications of Assignment Problem.

6. When an assignment problem is said to be unbalanced?

7. What are the common methods available to obtain a feasible solution for a Transportation Problem?

8. What is degeneracy in transportation problem?

9. Define : Dummy Activity.

10. How can you compute expected time and variance in PERT Network?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write the features of OR.

Or

(b) Describe the symbolic models with suitable example.

12. (a) Write the standard and canonical form of an LPP.

Or

(b) Use graphical method to solve :

Max $Z = 3x_1 + 2x_2$

Subject to constraints

$$-2x_1 + x_2 \leq 1$$
$$x_1 \leq 2$$
$$x_1 + x_2 \leq 3$$
$$x_1, x_2 \geq 0 .$$

13. (a) Describe the Hungarian Assignment method.

Or

(b) Solve the following Assignment Problem :

		Job			
		a	b	c	d
Person	1	1	4	6	3
	2	9	7	10	9
	3	4	5	11	7
	4	8	7	8	5

14. (a) Explain the North-West corner rule.

Or

(b) Use Vogel's Approximation method to obtain an initial basic feasible solution of the transportation problem:

	D	E	F	G	Available
A	11	13	17	14	250
B	16	18	14	10	300
C	21	24	13	10	400
Demand	200	225	275	250	

15. (a) Compare PERT with CPM.

Or

(b) Draw the network for the project :

$A < B$; $B < E$; $C < G$; $D < C, F, A$; $E < I$; $F < H$; $G < B$.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Describe the different phases of Operations Research.

17. Use Two-Phase simplex method to solve

Min $Z = x_1 + x_2$

Subject to the constraints

$2x_1 + x_2 \geq 4$

$x_1 + 7x_2 \geq 7$

$x_1, x_2 \geq 0$.

18. Solve the following travelling salesman problem given the following data :

$C_{12} = 20$, $C_{13} = 4$, $C_{14} = 10$, $C_{23} = 5$, $C_{34} = 6$, $C_{25} = 10$, $C_{35} = 6$, $C_{45} = 20$ where $C_{ij} = C_{ji}$ and there is no route between city i and j if the value of C_{ij} is not shown above.

19. Obtain the optimal solution for the following transportation problems :

					Availability
	19	30	50	10	7
	70	30	40	60	9
	40	8	70	20	18
Requirements	5	8	7	14	

20. Draw a graph to represent the sequence of tasks with these constraints :

$A < D, E$; $B, D < F$; $C < G, H$; $F, G < I$

Find the minimum time of completion of the project when the time of completion of each task is as follows:

Task:	A	B	C	D	E	F	G	H	I
Time (days):	8	10	8	10	16	17	18	14	9

A–10178	Sub. Code
	4BCEA3

U.G. DEGREE EXAMINATION, APRIL 2021 &

Supplementary/Improvement/Arrear Examinations

Computer Science

Allied — PROGRAMMING IN C

(CBCS – 2014 onwards)

Time : 3 Hours Maximum : 60 Marks

Part A (10 × 1 ½ = 15)

Answer **all** questions.

1. List out any five characteristics of computer.

2. Mention the five data types and its size.

3. Differentiate between array and pointers.

4. How the strings are represented in 'C'?

5. What are the two possible ways by which parameters can be passed into a function?

6. How can you initialise structure?

7. What is a pointer? How a variable is declared to the pointer?

8. What are '*' and '&' operators?

9. What are the file handling operations?

10. How to Open a file?

Part B (5 × 3 = 15)

Answer **all** questions.

11. (a) Write a C program to sort the given numbers in ascending order.

Or

(b) Write a C program that reads a number and displays whether the number is prime or not.

12. (a) Explain about various string handling functions.

Or

(b) Write short notes on One dimensional array.

13. (a) What is a recursive function? Write a recursive procedure for N!.

Or

(b) Explain about structures with structures.

14. (a) Write a C program to perform string operations using pointers.

Or

(b) Discuss about pointer expressions.

15. (a) Explain about preprocessor directives.

Or

(b) Summarize on command line arguments.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Discuss about structure of C program. Also give an example program.

17. Write a C program to get a matrix as input and perform the following operations.

(a) Find the transpose of a given matrix.

(b) Add the diagonal elements.

18. Summarize on classification of function.

19. Write a C program to perform to sort the given set of names using pointers.

20. Discuss about macro substitutions and file inclusion.

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A–10179

Sub. Code
4BCESA4

U.G. DEGREE EXAMINATION, APRIL 2021 &

Supplementary / Improvement / Arrear Examinations

Computer Science

Allied : COMPUTER ORIENTED NUMERICAL METHODS

(CBCS – 2014 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. State the formula to find a root of the equation $f(x)=0$ which hits between $x=a$ and $x=b$ of Regula-Falsi method.

2. What is the condition for convergence of Gauss-Jacobi method of iteration?

3. Write down the normal equations to fit a quadratic curve by least square method.

4. Write the normal equations to fit a line $y=ax+b$ under the least square method.

5. What are the advantages of central differences interpolation formulae?

6. State Lagrange's Interpolation formula.

7. Write the formula for dy/dx at $x=x_0$ using forward difference operator.

8. How the accuracy can be increased in trapezoidal rule of evaluating a given definite integral?

9. Write the demerits of the Taylor method of solution.

10. Write down the Runge-Kutta formula of fourth order to $dy/dx = f(x, y)$ with $y(x_0) = y_0$.

Part B $(5 \times 5 = 25)$

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

11. (a) Solve by Gauss Elimination method

$$2x + y + 4z = 12$$
$$8x - 3y + 2z = 20$$
$$4x + 11y - z = 33$$

Or

(b) Find a real root of the equation $\cos x = 3x - 1$ correct to three decimal places by using iteration method.

12. (a) Use the method of least squares to fit a straight line to the following data:

x :	0	5	10	15	20
y :	7	11	16	20	26

Estimate the value of y when $x = 25$

Or

(b) Explain the evaluation of the constants by the method of group averages.

13. (a) Find the first and second forward differences of

$3x^4 + 8x^3 + 3x^2 - 27x + 9$

Or

(b) Apply Lagrange's formula to find f (5) and f (6) given that f (1) = 2, f (2) = 4, f (3) = 8, f (4) = 16 and f (7) = 128.

14. (a) Using the following data, find $f'(5)$

x :	0	2	3	4	7	9
$f(x)$:	4	26	58	112	466	922

Or

(b) Explain briefly about the Gaussian Quadrative formula.

15. (a) By Euler's method, solve the differential equation $dy/dx = x + y$ in the interval $0 < x <= 0.5$ with $h = 0.1$ if $y = 1$ when $y = 0$.

Or

(b) Apply Runge Kutta method of fourth order to find an approximate value of y when x = 0.2 given that $y' = 3x + 0.5y$, $y(0) = 1$.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Using Crout's method, solve the system of equations

$2x - 6y + 8z = 24$
$5x + 4y - 3z = 2$
$3x + y + 2z = 16$

17. Find a straight line fit of the form $y = a + bx$ by the method of group averages for the following data:

x :	0	5	10	15	20	25
y :	12	15	17	22	24	30

18. Given the values

x :	14	17	31	35
y :	68.7	64.0	44.0	39.1

Find the value of $f(x)$ corresponding to $x = 27$.

19. Dividing the range into 10 equal parts, find the approximate value of $\int_0^{\pi} \sin x \, dx$ by

(a) Trapezoidal

(b) Simpson s one third rule.

20. Solve numerically, using Milne method:

$y' = 1(x + y), y(0) = 2.$ Take the starting values $y(0.2) = 2.0933$, $y(0.4) = 2.1755$, $y(0.6) = 2.2493$. Find the values of $y(0.8)$ and $y(1.0)$.

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A–10180	Sub. Code
	4BCEA4

U.G. DEGREE EXAMINATION, APRIL 2021 &

Supplementary/Improvement/Arrear Examinations

Computer Science — Allied

PROGRAMMING IN C++

(CBCS – 2014 onwards)

Time : 3 Hours Maximum : 60 Marks

Part A (10 × 1½ = 15)

Answer **all** questions.

1. What is the use of cast operator?

2. What is the difference between break and continue statement?

3. When constructor is required?

4. Define : Object.

5. Give an example for Multi-level inheritance.

6. What are the two types of polymorphism in C++?

7. Mention the methods of detecting and of files.

8. What do you mean by template?

9. How can you use a class object as an exception?

10. State the purpose of abort( ) function.

Part B (5 × 3 = 15)

Answer **all** questions.

11. (a) Give any three special features of C++ over C.

Or

(b) Explain the if statement with an example.

12. (a) Define a member function and explain.

Or

(b) What is copy constructor? Give an example.

13. (a) Illustrate Nesting of Classes.

Or

(b) List the unformatted I/O operations and explain.

14. (a) Describe the various file mode options available in C++.

Or

(b) Define a Swap function template for swapping two objects of the same type.

15. (a) What is exception handling? Mention its uses.

Or

(b) How destructors are used in exception handling?

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Describe the loop structures available in C++.

17. Create a class MAT of size $m \times n$. Define all possible matrix operations for MAT type objects.

18. What is virtual function? Why do we need a virtual function? Explain.

19. Write a program to copy the contents of one file into another.

20. Write a program to display error message when a number is divided by zero using exception.

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A–9862	Sub. Code
	4BCEA1

U.G. DEGREE EXAMINATION, APRIL 2021 &

Supplementary/Improvement/Arrear Examinations

Computer Science

Allied – OFFICE AUTOMATION

(CBCS – 2014 onwards)

Time : 3 Hours Maximum : 60 Marks

Part A (10 × 1½ = 15)

Answer **all** questions.

1. What are the parts of Word Window?
2. Write down any four keys to move the keyboard through the document.
3. How to change the case of text?
4. What are the options to printing document?
5. Give any four toolbars and their icons.
6. What is meant by Word Art?
7. Write down the steps to select a range using the mouse.
8. Define Workbook.
9. Write down the extensions of World documents and Excel.
10. How to move a Worksheet with in a Workbook?

Part B (5 × 3 = 15)

Answer **all** questions.

11. (a) What are the ways to edit a word document and explain.

Or

(b) Explain about quickly opening recently used files and copying tent to another file.

12. (a) How to create Bulleted and Numbering list?

Or

(b) How to create different footers or headers for odd and even pages?

13. (a) Explain the different methods to create a table in a Word document.

Or

(b) Draw and explain about Toolbars.

14. (a) Discuss the various commands in Ms-Excel.

Or

(b) How do you align data in cells using Excel?

15. (a) How can you use the mouse to copy data in Worksheet?

Or

(b) Write the steps to print the reports in Access.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. How to move the cursor to a specific page in a document? Explain.

17. Explain about indenting paragraph, changing case of text and indenting tent with table.

18. Explain

    (a) Auto correct

    (b) Auto format

    (c) Auto Tent

    (d) To use stored Auto Text

19. Explain with an example, how can you use and enter a formula in Excel.

20. How can you create and run a slide show in PowerPoint?

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A–9863	Sub. Code
	4BCEA2

U.G. DEGREE EXAMINATION, APRIL 2021 &

Supplementary/Improvement/Arrear Examinations

Computer Science

Allied – PRINCIPLES OF INFORMATION TECHNOLOGY

(CBCS – 2014 onwards)

Time : 3 Hours Maximum : 60 Marks

Part A (10 × 1½ = 15)

Answer **all** questions.

1. What are Computers?
2. Write the developments in Communication Technology.
3. What is an Electronic Spread Sheet?
4. What is Browser? How does it work?
5. What is Internet?
6. What do you mean by Electronic Data Interchange?
7. List out the various criteria for Rating Secondary storage devices.
8. What are Optical disk?
9. What do you understand by the term MIS?
10. What is Object Oriented Programming?

Part B (5 × 3 = 15)

Answer **all** questions.

11. (a) Explain about the Revolution of Computer and Communication System.

Or

(b) Discuss on Ethics of Information Technology.

12. (a) What is application software? What are the four types of application software? Discuss.

Or

(b) Discuss on Desktop accessories.

13. (a) What is ISDN? How is it important?

Or

(b) Explain the Practical uses of Communications.

14. (a) Describe the Construction and working principle of Hard disks.

Or

(b) Discuss on File Management Systems.

15. (a) What are the six phases of system analysis and design? Explain.

Or

(b) Write a short note on Internet Programming.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Explain the various elements of a Computer and Communication System.

17. Describe in detail about the ethics and intellectual property rights.

18. Explain in detail about

    (a) Telephone Communication Services

    (b) Modems and Data Communication Software

19. What is DBMS? Explain about the database organization in detail.

20. What is a Programming Language? Explain the five generations of languages in detail.

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