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

 $(10 \times 2 = 20)$

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 $(5 \times 5 = 25)$

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()

 $\mathbf{2}$

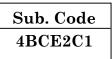
Part C
$$(3 \times 10 = 30)$$

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:

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

- 19. Using pointers, Write a program to multiply two matrices.
- 20. What is preprocessor? What are the facilities offered by the preprocessor? Explain them.



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 $(10 \times 2 = 20)$

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 × 5 = 25)

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

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

 \mathbf{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.

 \mathbf{Or}

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

 $\mathbf{2}$

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

Or

(b) Define any five terminologies related to graphs.

Part C $(3 \times 10 = 30)$

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.

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

 $(10 \times 2 = 20)$

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.

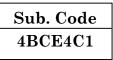
 $\mathbf{2}$

Part C (3 × 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.

3



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

 $(10 \times 2 = 20)$

Part A

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

 $(5 \times 5 = 25)$

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** $(3 \times 10 = 30)$

Answer any three questions.

- 16. Design a table and perform formatting by using HTML tags.
- 17. Explain how do you link external style sheets?

 $\mathbf{2}$

- 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.

3

Sub. Code 4BCE5C1

B.Sc. DEGREE EXAMINATION, APRIL 2021 &

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Fifth Semester

Computer Science

OPERATING SYSTEM

(CBCS - 2014 onwards)

Time: 3 Hours

Maximum: 75 Marks

 $(10 \times 2 = 20)$

Part A

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

 $(5 \times 5 = 25)$

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** $(3 \times 10 = 30)$

Answer any three questions.

- 16. Describe the operating system general system architecture.
- 17. Explain any two scheduling algorithms.

 $\mathbf{2}$

- 18. Enumerate the methods for handling deadlocks.
- 19. Discuss about virtual memory,
- 20. Explain about file allocation methods.

3

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

 $(10 \times 2 = 20)$

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 $(5 \times 5 = 25)$

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

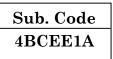
(b) Write a note on data environment.

 $\mathbf{2}$

Part C $(3 \times 10 = 30)$

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.



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

 $(10 \times 2 = 20)$

Part A

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 $(5 \times 5 = 25)$

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

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

 \mathbf{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.

 \mathbf{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.

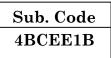
 $\mathbf{2}$

Part C $(3 \times 10 = 30)$

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.

3



B.Sc. DEGREE EXAMINATION, APRIL 2021 &

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Fifth Semester

Computer Science

Elective — MULTIMEDIA TECHNOLOGY

(CBCS - 2014 onwards)

Time: 3 Hours

Maximum : 75 Marks

Part A

 $(10 \times 2 = 20)$

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

 $(5 \times 5 = 25)$

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.

 \mathbf{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

 $(3 \times 10 = 30)$

Answer any three questions.

- 16. Describe the applications of multimedia,
- 17. Discuss the fundamentals of MIDI.
- 18. Elucidate the digital image fundamentals.

 $\mathbf{2}$

- 19. Discuss about broadcast video standards.
- 20. Explain the planning and costing of a multimedia project.

3

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 $(10 \times 2 = 20)$

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.

 \mathbf{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.

 $\mathbf{2}$

Part C $(3 \times 10 = 30)$

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.

B.Sc. DEGREE EXAMINATION, APRIL 2021 &

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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.

 \mathbf{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.

 $\mathbf{2}$

Part C (3 × 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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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

 $(10 \times 2 = 20)$

Part A

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 $(5 \times 5 = 25)$

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.

 $\mathbf{2}$

Part C (3 × 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.

3

B.Sc. DEGREE EXAMINATION, APRIL 2021 &

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Sixth Semester

Computer Science

SOFTWARE ENGINEERING

(CBCS - 2014 onwards)

Time: 3 Hours

Maximum : 75 Marks

 $(10 \times 2 = 20)$

Part A

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?

 \mathbf{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.

 $\mathbf{2}$

Part C (3 × 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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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

 $(10 \times 2 = 20)$

- 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.

 \mathbf{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?

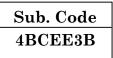
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Part C (3 × 10 = 30)

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.

3



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 $(10 \times 2 = 20)$

- 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 $(5 \times 5 = 25)$

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

2

(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:

 $Date \ members \ day, \ month \ and \ year.$

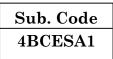
A Constructor to provide values to the date members

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.

3



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 $(10 \times 2 = 20)$

- 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.

 \mathbf{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

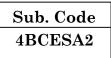
(b) Write short notes on (i) magnetic tape (ii) magnetic disk.

 $\mathbf{2}$

Part C $(3 \times 10 = 30)$

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.



U.G. DEGREE EXAMINATION, APRIL 2021 &

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Computer Science

Allied — MICROPROCESSORS AND INTERFACING

(CBCS – 2014 onwards)

Time : 3 Hours

Maximum : 75 Marks

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

- 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 $(5 \times 5 = 25)$

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.

 \mathbf{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.

 \mathbf{Or}

(b) Discuss briefly about the 80286 protection mechanism.

 $\mathbf{2}$

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.

3



U.G. DEGREE EXAMINATION, APRIL 2021 &

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Computer Science

Allied – RESOURCE MANAGEMENT TECHNIQUES

(CBCS – 2014 onwards)

Time : 3 Hours

Maximum : 75 Marks

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

- 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

$$\begin{array}{l} -2x_{1}+x_{2} \leq 1 \\ x_{1} \leq 2 \\ x_{1}+x_{2} \leq 3 \\ x_{1},x_{2} \geq 0 \,. \end{array}$$

13. (a) Describe the Hungarian Assignment method.

Or

(b) Solve the following Assignment Problem :

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:

					Available
А	(11	13	17	14	$\begin{array}{c} 250 \\ 300 \\ 400 \end{array}$
В	16	18	14	10	300
С	$\lfloor 21$	24	13	10	400
Demand					

15. (a) Compare PERT with CPM.

Or

(b) Draw the network for the project :

 $\begin{array}{lll} A < B \; ; & B < E \; ; & C < G \; ; & D < C, F, A \; ; & E < I \; ; \\ F < H \; ; \; G < B \; . \end{array}$

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

$$2x_1 + x_2 \ge 4 x_1 + 7x_2 \ge 7 x_1, x_2 \ge 0.$$

3

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 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 :

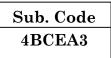
A < D, E; B, D < F; C < G, H; F, G < I

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

4



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 $(10 \times 1 \frac{1}{2} = 15)$

- 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 $(5 \times 3 = 15)$

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 $(3 \times 10 = 30)$

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.

 $\mathbf{2}$

- 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.

3

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 $(10 \times 2 = 20)$

- 1. State the formula to find a root of the equation f(x) = 0which 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 × 5 = 25)

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

11. (a) Solve by Gauss Elimination method

2x + y + 4z = 128x - 3y + 2z = 204x + 11y - z = 33

 \mathbf{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:

Estimate the value of *y* when x = 25

Or

 $\mathbf{2}$

(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)

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 $(3 \times 10 = 30)$

Answer any three questions.

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

2x - 6y + 8z = 245x + 4y - 3z = 23x + y + 2z = 16

3

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

18. Given the values

x:	14	17	31	35
<i>y</i> :	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).

4

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 $(10 \times 1\frac{1}{2} = 15)$

- 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

 $(5 \times 3 = 15)$

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

 $(3 \times 10 = 30)$

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.

3

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 $(10 \times 1\frac{1}{2} = 15)$

- 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.

 \mathbf{Or}

- (b) Explain about quickly opening recently used files and copying tent to another file.
- 12. (a) How to create Bulleted and Numbering list?

 \mathbf{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.

 $\mathbf{2}$

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?

3

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 $(10 \times 1 \frac{1}{2} = 15)$

- 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.

 \mathbf{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.

 $\mathbf{2}$

Part C $(3 \times 10 = 30)$

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.

3