F–8197	Sub. Code
	7BIT1C1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2022

First Semester

Information Technology

PRINCIPLES OF INFORMATION TECHNOLOGY

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Central Processing Unit

2. Write the basic components of computer system.

3. What is Software?

4. What is web browser? List some of the examples of web browser.

5. What is Video conferencing?

6. Define Micro Computer

7. What is meant by database?

8. What are the different storage devices available to store the files?

9. What are the languages used in computer generations?

10. Define Software Development.

Part B (5 × 5 = 25)

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

11. (a) List out the six elements of a computer in communication system.

Or

(b) Write short note on revolution in computers from analog to digital age.

12. (a) Write a short note on Spreadsheets.

Or

(b) Elucidate the concept of Database Software and Presentation Graphics Software.

13. (a) What is an online information service? Explain in detail.

Or

(b) Clarify the concept of Work Group Computing.

14. (a) Write brief note on Secondary Storage Devices.

Or

(b) Describe about Compression and Decompression.

15. (a) Write detailed note on six phases of System Analysis and Design.

Or

(b) Clarify the concept of Programming Languages.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Briefly explain the Development in Computer and Communication Technology.

17. Describe in detail about Communications software.

18. Write brief note on ISDN Lines and Cable modems.

19. Elucidate the various types of Database Organization.

20. Discuss about Management Information Systems.

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F–8198	Sub. Code
	7BIT2C1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2022

Second Semester

Information Technology

PROGRAMMING IN C AND DATA STRUCTURES

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. Define variable.
2. What is a macro in C?
3. Mention how strings are represented in C language.
4. What is dynamic memory allocation?
5. How are bit fields stored in memory?
6. Describe the syntax to a data file.
7. Define Infix and Postfix.
8. Give the purpose of a list in C?
9. What is a tree data structure?
10. List the traversal strategies used in the binary tree.

Part B (5 × 5 = 25)

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

11. (a) Explain the operators in C with examples.

Or

(b) What are automatic variables in C? Explicate them.

12. (a) Clarify how to create the strings in C.

Or

(b) Differentiate between single dimensional and multi-dimensional arrays.

13. (a) What is self-referential structure? Give an example.

Or

(b) Describe about the unformatted data file.

14. (a) Illustrate queues in brief with a suitable example.

Or

(b) Explicate functions of Linked Lists in C with sample program.

15. (a) How is binary tree represented in memory? Be brief.

Or

(b) Explain binary tree with an example.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Discuss about the nested control structures with examples.

17. Write a C program to sort the n numbers in an array.

18. Differentiate between Structure and Union with examples.

19. Describe the queues and sequential representation.

20. Illustrate the representation of list in C.

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F– 8199

Sub. Code
7BIT3C1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2022

Third Semester

Information Technology

JAVA PROGRAMMING

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. List out any two Applications of OO programming.
2. What is command line argument?
3. Draw the flowchart of jump in loops.
4. What is Expressions?
5. What is a Final class?
6. Define Abstract class.
7. Define Hiding classes.
8. What do you mean by exceptions in Java?
9. What is Applet?
10. Mention any four Applet Tags.

Part B (5 × 5 = 25)

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

11. (a) Describe various benefits of OOP.

Or

(b) Write a Java program to find the biggest among three numbers.

12. (a) Write a note on operators in Java.

Or

(b) Discuss the concept of mathematical functions in JAVA.

13. (a) Explain the concepts of Method Overriding in Java.

Or

(b) What is an interface? Write the general format of an interface. Explain its use with an example.

14. (a) Explain about packages in java.

Or

(b) List and explain various types errors.

15. (a) How to create an Executable Applet? Explain with an example.

Or

(b) What are the differences between applets and other applications in Java?

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Describe the features of JAVA in detail.

17. Explain: (a) Decision Making and Branching (b) Decision Making and Looping.

18. Discuss the concept of Arrays with an example programs.

19. Describe the complete life cycle of a thread.

20. Explain different drawing methods of the graphics class.

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F– 8200	Sub. Code
	7BIT4C1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2022

Fourth Semester

Information Technology

OPEN SOURCE SOFTWARE

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. Mention any four applications of open source software

2. Define clone process.

3. What are the three fundamental operations that are common to mysql programs?

4. State the categories of sql statements.

5. What is arrays?

6. What is meant by functions? Give example

7. Describe the internal types present in the python programming.

8. How do you update the numbers in python?

9. State any two features of Perl.

10. Define Modules.

Part B (5 × 5 = 25)

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

11. (a) List and explain the important factors that led to the development of open source software.

Or

(b) What is signals? What are the ways signal can be generated?

12. (a) What are the ways of obtaining the connection parameter?

Or

(b) Explain the advantages of copying records from one table to another.

13. (a) Discuss about the scope for variables in PHP.

Or

(b) How can you use the functions to sort an array? Explain.

14. (a) Clarify the concept of lists and tuples in python.

Or

(b) Give a brief account on Functions in python.

15. (a) Clarify the concept of variables in Perl.

Or

(b) What is subroutines? How do you use it in Perl? Explain.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. List and explain the advantages and disadvantages of open source software.

17. What are the various ways in which SELECT statement can be used for record selection technology?

18. Explain the types of operators available in PHP. Explain with examples.

19. Clarify the concept of conditional statements and loops in python programming.

20. How do you manipulate the data in Perl? Explain with examples.

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F– 8201

Sub. Code
7BIT5C1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2022

Fifth Semester

Information Technology

DATABASE MANAGEMENT SYSTEMS

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. What is database system?
2. Write any two E-R design issues.
3. What is normalization?
4. What is functional dependency?
5. Define transactions.
6. State the benefits of distributed transactions.
7. What is Data Integrity?
8. Define View.
9. Write the benefits of Stored procedure.
10. State the uses of Packages.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Describe the semi structured databases in detail.

Or

(b) What is E-R model? Explain its components of it.

12. (a) Write a short note on First Normal form.

Or

(b) Illustrate about the functional dependency theory.

13. (a) Elucidate the Server system architecture in detail.

Or

(b) Briefly discuss about Distributed systems.

14. (a) Explain the procedures to create Indexes with an example.

Or

(b) Illustrate the steps involved in creating Synonyms with an example.

15. (a) How do you create the implicit cursor in SQL? Explain with an example.

Or

(b) Write the features of PL/SQL.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Briefly explain the transaction management.

17. Discuss the 4NF with an example.

18. Give a brief account on parallel databases.

19. Briefly explain the concepts of Data Integrity.

20. Write a PL/SQL program to find the biggest one from given n numbers using functions.

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F– 8202	Sub. Code
	7BIT5C2

B.Sc. DEGREE EXAMINATION, NOVEMBER 2022

Fifth Semester

Information Technology

VISUAL PROGRAMMING

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define MSIL.
2. Write any TWO features of CLR.
3. Define Object.
4. What does Polymorphism mean?
5. Define Windows Applications.
6. What is meant by Picture boxes?
7. Write any TWO uses of ASP.NET.
8. Define ASP.NET web pages.
9. List out any two advantages of SQL.
10. Write a note on ADO.NET.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Give an account on .NET Framework Libraries.

Or

(b) List out various benefits of .NET.

12. (a) Describe the key features of Exceptions.

Or

(b) Write short notes on Strings.

13. (a) Give a brief account on Timer control and Scroll bars.

Or

(b) Explicate the concepts of Rich text boxes.

14. (a) Write a note on Custom controls.

Or

(b) Give a brief account on Collections.

15. (a) Illustrate the features of ADO.NET.

Or

(b) List and Explain Two Types of ADO.Net Architecture with neat diagram.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Elaborate the concept of .NET framework with neat diagram.

17. Elucidate the concept of Inheritance with suitable Program.

18. List and explain various Windows controls in details.

19. Explain the Validation server control and Rich web controls with examples

20. (a) Design a Employee Information Application Form in ASP.Net.

    (b) To Create a Database and Insert, Delete, Select, Clear the Data by using ADO.net model.

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F–8203	Sub. Code
	7BITE1A

B.Sc. DEGREE EXAMINATION, NOVEMBER 2022

Fifth Semester

Information Technology

Elective – DESIGN AND ANALYSIS OF ALGORITHMS

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. Write a short note on Algorithm Design and Analysis of Process.

2. Write any two advantages in using a Stack.

3. List the applications of trees.

4. What is the use of threaded binary tree?

5. Define linked list. Give an example

6. List out the advantages of using a linked list.

7. What is the Aim of Backtracking?

8. Give the advantages and disadvantages in using selection sort algorithm.

9. What is the use of Dijksra's algorithm?

10. What are the labels in Prim's algorithm used for?

Part B (5 × 5 = 25)

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

11. (a) List out the various operations of stack.

Or

(b) Write a short note on Algorithms.

12. (a) List and explain various representations of graph.

Or

(b) List and explain any Five important terms in binary tree.

13. (a) Write a short note on inserting an element in the liked list, with suitable example.

Or

(b) Write an insertion algorithm for linked stack.

14. (a) Explain in detail binary search algorithm.

Or

(b) Compare selection and insertion sort.

15. (a) Discuss the concept of Floyd Warshall Algorithm.

Or

(b) Write a note on Huffman codes.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Discuss the operations on a circular queue.

17. Explain in details about the graph traversal technique with suitable examples.

18. Elaborate the concept of Multi stage graphs.

19. Explain the following: (a) Merge sort (b) Quick sort.

20. Explain: Kruskal's algorithm with suitable examples.

F–8204	Sub. Code
	7BITE1B

B.Sc. DEGREE EXAMINATION, NOVEMBER 2022

Fifth Semester

Information Technology

Elective – COMPUTER GRAPHICS

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

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

Answer **all** the questions.

1. Mention the uses of computer graphics.

2. What are the uses of light pen device?

3. List out the various attributes of characters.

4. What is meant by affine transformations?

5. What is meant by viewport clipping?

6. Differentiate clipping and shielding.

7. What do you mean by composite transformations?

8. Write the functions for translation in three dimensional systems.

9. List the merits of command language.

10. Mention the uses of feedback in user interface design.

Part B (5 × 5 = 25)

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

11. (a) How computer graphics can be used in education and training? Discuss it.

Or

(b) Write a short note on graphics system software.

12. (a) Write short note on 2D transformation principles.

Or

(b) Describe about composite transformations in 2D.

13. (a) Enumerate the concept in window-to-viewport coordinate transformation.

Or

(b) Write short note on suthrlandhodgman algorithm.

14. (a) Write a short note on three-dimensional transformation functions.

Or

(b) Discuss the following: (i) Scaling (ii) Reflection.

15. (a) Write short note on components of user interface.

Or

(b) Discuss about various styles of command language.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Write brief note on procedure to drawing ellipse with an example.

17. Elucidate the matrix representations in a homogeneous co-ordinates with an example.

18. Explain about convex polygon clipping algorithms.

19. Discuss in detail the three dimensional matrix representations.

20. Enumerate the user's model and command language used in user interface design.

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F–8205	Sub. Code
	7BITE2A

B.Sc. DEGREE EXAMINATION, NOVEMBER 2022

Fifth Semester

Information Technology

Elective: COMPUTER NETWORKS

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define computer networks.

2. What is LAN?

3. Expand SLIP.

4. What is fragmentation?

5. What are the uses of Firewalls?

6. Expand RARP.

7. Define multiplexing.

8. Write any two uses of TCP.

9. Define Multimedia.

10. Expand DNS.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write a short note on Telephone Systems.

Or

(b) Expound in short on Communication Satellites.

12. (a) Write short note on HDLC.

Or

(b) Explicate briefly on collision free protocols.

13. (a) Give a note on ATM LANs.

Or

(b) Discuss about Fragmentation.

14. (a) Briefly explain on Crash Recovery.

Or

(b) Illustrate the concept of buffering.

15. (a) Explicate on cryptography.

Or

(b) Write short note on SNMP.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Explain the different layers in OSI reference model.

17. Elaborate the concept of Dlink protocols.

18. Describe any four routing algorithms.

19. Briefly explain the concept of Internet Transport Protocols.

20. Write brief note for the following

    (a) Electronic Mail.

    (b) Electronic Mail Privacy.

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F–8206	Sub. Code
	7BITE2B

B.Sc. DEGREE EXAMINATION, NOVEMBER 2022

Fifth Semester

Information Technology

Elective: SECURITY IN COMPUTING

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Define cryptography

2. Distinguish between symmetric and asymmetric encryption.

3. How to prevent virus infection?

4. State user authentication

5. What is Data correctness?

6. What is meant by sensitive data? Give example.

7. Define VPN.

8. Outline SSH Encryption.

9. State authentication

10. Define Data mining.

Part B (5 × 5 = 25)

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

11. (a) Write a short note on methods of defence.

Or

(b) What is Data encryption standard? Explain briefly

12. (a) Explain various methods of user authentication mechanisms with an example.

Or

(b) What are Targeted Malicious codes? Explain with examples.

13. (a) Discuss the integrity issues in database design with an example.

Or

(b) Why concurrency control is needed? Explain the Concurrency control mechanisms with an example.

14. (a) Write down the difference between symmetric and asymmetric key cryptography.

Or

(b) Give a brief account on Firewalls.

15. (a) Clarify the concept of Privacy principles and policies

Or

(b) Give a brief account on authentication and privacy.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Compare DES with AES Encryption algorithm with example.

17. Describe the various types viruses affected in a computer program. Give examples.

18. Explain the concepts of security requirements of database systems in detail.

19. Clarify the concept of Threats in network security.

20. What is privacy preserving? How do you apply privacy preserving in data mining?

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F–8207	Sub. Code
	7BITE3A

B.Sc. DEGREE EXAMINATION, NOVEMBER 2022

Sixth Semester

Information Technology

Elective: MOBILE COMMUNICATION

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Signal
2. Specify the advantages of multiplexing.
3. What is the use of SDMA?
4. What are the components of UMTS?
5. What are the disadvantages of WLAN?
6. Define piconet.
7. Name the protocol used for agent advertisement message.
8. Define Tunneling.
9. What are the general purposes of a file system?
10. Specify the use of Wireless Application Environment

Part B (5 × 5 = 25)

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

11. (a) Illustrate the various radiation patterns of antennas.

Or

(b) Give a brief note on Cellular systems.

12. (a) Write a brief note on Medium Access Control.

Or

(b) Explain the various earth orbits of satellite system.

13. (a) Write the differences between Infra red and radio transmission.

Or

(b) Describe IEEE 802.11 protocol architecture.

14. (a) Explicate the concepts of IP packet delivery in mobile IP.

Or

(b) Give a brief note on Transaction Oriented TCP.

15. (a) Depict the WAP architecture in detail.

Or

(b) Write a short note on HTML.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Discuss the types of spread spectrum techniques.

17. Describe the GSM architecture along with its entities.

18. Discuss the WATM services in detail

19. Give a brief account on following concepts:

    (a) Snooping TCP (5)

    (b) Indirect TCP (5)

20. Give a brief account on World Wide Web.