F–5257	Sub. Code
	7BITE2B

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Fifth Semester

Information Technology

Elective: SECURITY IN COMPUTING

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is a Vulnerability?
2. Define Encryption.
3. What does Viruses do?
4. List any two types of Flaws.
5. What is Data Mining?
6. Mention the use of Operating System.
7. List any two Network Concepts?
8. What is a Threat?
9. Mention the purpose of Privacy.
10. Give the features of Authentication.

Part B (5 × 5 = 25)

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

11. (a) List and explain the types of Computer Criminals.

Or

(b) What are the Methods of Defence? Be Brief.

12. (a) Mention the ways to Fix Faults in the system.

Or

(b) Give a short note on Malicious Code.

13. (a) Write a shot note on Trusted Operating System.

Or

(b) Mention the need for Databases and Data Mining in a short note.

14. (a) Elucidate a brief note on Network Concepts.

Or

(b) What is a Firewall? Justify its usage.

15. (a) How to secure E-mail communications? Explain with steps.

Or

(b) Illustrate Privacy policies with a neat diagram.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Describe about Cryptography in detail.

17. List and explain the various types of Malicious Software.

18. Explicate about Reliability and Integrity.

19. Mention the working of Intrusion Detection System in Detail.

20. Elucidate in detail about Privacy on the Web and Authentication.

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F–6104	Sub. Code
	7BIT1C1

B.SC DEGREE EXAMINATION, NOVEMBER 2021.

First Semester

Information Technology

PRINCIPLES OF INFORMATION TECHNOLOGY

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. Define Information Technology.
2. Mention the features of connectivity.
3. What do you mean by User Interface?
4. What are the features of web browsers?
5. Specify any two online information services.
6. State the purpose of local networks.
7. Why does compression technology important for computing?
8. Define file management.
9. What is program?
10. Write any two features of OOP.

Part B (5 × 5 = 25)

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

11. (a) Describe the latest developments in Communication Technology.

Or

(b) Write the elements of digital age compared to analog.

12. (a) What are thinking tools? Describe in brief.

Or

(b) Explicate any two examples for Presentation Graphics Software.

13. (a) Elaborate the Telephone related Communication Services.

Or

(b) Distinguish between electronic data interchange and intranets.

14. (a) Illuminate the Compression and Decompression techniques with examples.

Or

(b) Elucidate the storage mechanisms in Optical Disks.

15. (a) Write a short note on Management Information Systems.

Or

(b) Describe the five generations of programming languages.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Briefly explain the Communication in Information Technology.

17. With neat illustrations give a detailed account on any two Web browsers.

18. Discuss about the Internet-Shared resources.

19. Elaborate the concepts of Storage and Database.

20. Give an exhaustive study on five steps in programming.

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F–6105	Sub. Code
	7BIT2C1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021.

Second Semester

Information Technology

PROGRAMMING IN C AND DATA STRUCTURE

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is meant by identifiers?

2. Write the uses of user defined functions.

3. What are the operations on pointers?

4. How do you declare the multidimensional arrays?

5. What do you mean by self referential structures?

6. Write the syntax for open and close a file.

7. List out the operations of stack.

8. What is Lists? Mention its applications.

9. Define Binary Tree.

10. How do you delete a node in Binary Tree?

Part B (5 × 5 = 25)

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

11. (a) Write a C program to find smallest of two numbers using ternary operator.

Or

(b) Write a short note on C preprocessors.

12. (a) How do you passing pointers to functions? Explain with suitable example.

Or

(b) Write a short note on dynamic memory allocations in C.

13. (a) Write a short note on command line arguments with an example.

Or

(b) Describe different file opening modes in detail.

14. (a) How do you delete an element in a stack?

Or

(b) Write a short note on Linked List and its usage.

15. (a) What are the applications of trees? Give an example.

Or

(b) Draw a binary tree for the expression: 5 + 7*9/1**6-2.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Explain the various looping statements in C with examples.

17. Write a C program to read two $n \times n$ matrices and add them.

18. Write the procedures to create and process the data file in C.

19. Describe about infix, prefix, postfix notations with their importance.

20. How do you represent and implement Binary Trees.

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F–6106	Sub. Code
	7BIT3C1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021.

Third Semester

Information Technology

JAVA PROGRAMMING

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Write any four features of Java.
2. What is meant by variables in Java?
3. Write the syntax of while statement.
4. Draw the flowchart of jump in loops.
5. How to define a class?
6. How can you declare an arrays?
7. What do you mean by event handling?
8. What are thread class priority?
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) Explain the general structure of a Java program.

Or

(b) What are the Applications of OOP?

12. (a) List and explain five Mathematical Function in JAVA.

Or

(b) Write a note on operators in Java.

13. (a) Explain constructors with an example program.

Or

(b) Write a note on Wrapper Classes

14. (a) Explain Java API Package.

Or

(b) Elucidate different types of errors.

15. (a) Write a note on Line graphs

Or

(b) Write an applet program to draw the polygons.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Enlighten the various principles of Object Oriented Programming.

17. Describe various decision-making and branching statements.

18. Elaborate the concept of inheritance with suitable example.

19. Explicate Life Cycle of Threads with suitable examples.

20. Explain the concept of Applet Life cycle.

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F–6107	Sub. Code
	7BIT4C1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021.

Fourth Semester

Information Technology

OPEN SOURCE SOFTWARE

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Mention the need for Open Source

2. Give two advantages of Open Source

3. Expand MySQL.

4. What is Metadata?

5. What is an array?

6. List two OOP concepts.

7. What is a module?

8. What are classes?

9. List any two packages available in PERL.

10. Define Packages.

Part B (5 × 5 = 25)

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

11. (a) Give an account on Open Source Operating Systems.

Or

(b) What is the Advantage of Open Source Software?

12. (a) Create a MySQL query to create a student table.

Or

(b) Write a brief note on Metadata.

13. (a) Mention the procedure of creating variables and constants in PHP.

Or

(b) Briefly explain about Error Handling in PHP.

14. (a) Give a short note on Sequences in python.

Or

(b) Elucidate Dictionaries in brief with an example.

15. (a) Describe Subroutines in detail.

Or

(b) Discuss about Data Manipulation in PERL

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Write about the Need for Open Sources and Application of Open Sources in detail.

17. Elucidate about working with strings using MySQL in detail.

18. Write a PHP script to send and receive emails.

19. Illustrate with examples the different loops in Python.

20. Explain in detail about working with files in PERL.

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F–6108

Sub. Code
7BIT5C1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Fifth Semester

Information Technology

DATABASE MANAGEMENT SYSTEMS

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. What are the benefits of DBMS?

2. List out the components of ER diagram.

3. What is atomic transaction in DBMS?

4. Define 2NF.

5. Write the benefits of distributed databases.

6. State the purpose of homogeneous database.

7. What is an index in SQL?

8. How do you create a sequence?

9. Write any two applications of PL/SQL.

10. What cursor is used in SQL?

Part B (5 × 5 = 25)

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

11. (a) Illustrate the concepts of data storage and querying.

Or

(b) Write a short note on extended ER features.

12. (a) What is functional dependency? Explain its types.

Or

(b) What is normalization? Explicate with an example.

13. (a) Describe Server system architecture in detail.

Or

(b) Explicate the concepts of distributed data storage.

14. (a) What is Referential integrity? Illustrate with suitable example.

Or

(b) What are roles and privileges in SQL? Explain.

15. (a) Give a brief note on features of PL/SQL.

Or

(b) How to create a package in SQL? Elaborate its procedures.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Describe relational database model in detail.

17. Illustrate the database design process with suitable examples.

18. Explain the following :

    (a) Network database

    (b) Heterogeneous database.

19. How to increment the values using sequence in SQL? Discuss.

20. Illustrate the concepts of SQL database transactions.

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F–6109	Sub. Code
	7BIT5C2

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021.

Fifth Semester

Information Technology

VISUAL PROGRAMMING

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. What is .NET framework class library?

2. Define CLR.

3. Outline the term objects.

4. What is interfaces?

5. Define calendar control.

6. What is link labels?

7. Define Web server controls.

8. Define ASP.NET web pages.

9. List out the validation controls of ASP.NET.

10. List out any two features of ADO.NET.

Part B (5 × 5 = 25)

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

11. (a) List out the benefits of .NET.

Or

(b) Write a short note on Visual studio integrated development environment.

12. (a) Describe the key features of Delegates and events.

Or

(b) How to use the Polymorphism? Explain with example.

13. (a) Explicate the concepts of Panels and Group boxes.

Or

(b) Give a brief account on Handling Checked List boxes.

14. (a) Explicate the necessary features of ASP.NET.

Or

(b) Explain the concept of ASP.NET Page Directives.

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

Or

(b) List out the steps involved in ADO.NET SQL server connection.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Describe the Features of CLR.

17. Give a brief notes on looping statements.

18. Give a brief account on Handling dialog boxes with examples.

19. Briefly explain the concepts of Rich web controls.

20. How do you use the SQL server with VB .NET with an example?

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F–6110	Sub. Code
	7BITE1B

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021.

Fifth Semester

Information Technology

Elective — COMPUTER GRAPHICS

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Section A (10 × 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 segment files?

6. List out the uses of windowing algorithms.

7. What is meant by composite transformations?

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

9. What is meant by viewport clipping?

10. Mention the uses of depth-buffer method.

Section 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 software.

12. (a) Write short note on area fill attributes.

Or

(b) Describe about raster methods for transformations.

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

Or

(b) Why do we need multiple workstations in segments? Discuss it.

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

Or

(b) Discuss the following :

(i) Shear

(ii) Reflection.

15. (a) Write short note on perspective projections.

Or

(b) Discuss about scan-line method in three dimensional viewing.

Section C (3 × 10 = 30)

Answer any **three** questions.

16. Write brief note on Bresenham's line drawing algorithm with an example.

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

18. Explain about Sitherland Hodgman algorithm.

19. Discuss in detail the three dimensional display methods.

20. Enumerate the viewing coordinates in three dimensional viewing.

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F–6111	Sub. Code
	7BITE2A

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021.

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. List out the uses of network hardware.
2. What are the uses of communication satellites?
3. Define Petre net models.
4. What is fragmentation?
5. What are the uses of firewalls?
6. Expand the term RARP.
7. Define multiplexing.
8. Write any two performance issues in transport layer.
9. Define multimedia.
10. Expand SNMP.

Part B (5 × 5 = 25)

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

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

Or

(b) Differentiate broadband and narrowband ISDN.

12. (a) Write short note on ALOHA.

Or

(b) Enumerate the finite state models in network protocols.

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

Or

(b) Discuss about design issues in network layer.

14. (a) Briefly explain on Crash Recovery.

Or

(b) Illustrate the concept of addressing and buffering.

15. (a) Explicate on cryptography.

Or

(b) Write short note on DNS and its uses.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Explain the different layers in OSI reference model.

17. Elaborate the concept of Carrier sense multiple access protocols.

18. Describe the following:

    (a) Subnets

    (b) IP

19. Explain in detail the concept of Internet Transport Protocols.

20. Write brief note on electronic Mail and its Privacy.

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F–6458	Sub. Code
	7BITE1A

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021.

Fifth Semester

Information Technology

Elective — DESIGN AND ANALYSIS OF ALGORITHMS

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Define a Queue.
2. What are the types of Queues?
3. Delineate complete Binary Tree
4. What do you meant by shortest path?
5. List out the applications of Linked List?
6. List out the basic operations carried out in a Linked List
7. What are the two strategies used in traversing the graph?
8. Define Sorting
9. Name two algorithms to find minimum spanning tree
10. Explain the term Huffman Coding.

Part B (5 × 5 = 25)

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

11. (a) How do you analyse the Algorithm?

Or

(b) Describe about performance analysis of an Algorithm.

12. (a) What is Binary Tree? Explain with example.

Or

(b) Explain the basic terminologies of Graphs.

13. (a) Describe about Singly Linked List.

Or

(b) Neatly sketch the concept of Multistage Graphs.

14. (a) Clarify the concept of Backtracking in detail.

Or

(b) Explain about Strassen's matrix product algorithm.

15. (a) Designate the concept of computing Fibonacci number.

Or

(b) Neatly sketch the Prim's algorithm.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Elucidate the concept of Evaluation of Expressions.

17. List out and explain the three ways to traverse a tree.

18. Explain the Travelling Salesman Problem in detail.

19. Briefly explain about Depth First Search Algorithm.

20. Neatly sketch the Kruskal's algorithm.

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