F–2637

Sub. Code
7BIT1C1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2019

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. What are the elements of a Computer?
2. Specify the uses of Communication Technology.
3. What do you mean by application software?
4. Why do need web browsers?
5. What is video conferencing'?
6. Define ISDN.
7. List any two examples for Optical disks.
8. What is DBMS?
9. What is Management information System?
10. Define Internet Programming.

Part B (5 × 5 = 25)

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

11. (a) Describe the recent developments in Computer Technology.

Or

(b) Differentiate between Connectivity and Interactivity.

12. (a) Write the features of Word Processing software.

Or

(b) Explain any two communication software in detail.

13. (a) List and explicate any two online information services.

Or

(b) Distinguish between Digital and Analog signal.

14. (a) Illustrate the functions of any two secondary storage devices.

Or

(b) Elaborate the concepts of File Management Systems.

15. (a) Explain the various steps involved in programming.

Or

(b) Write the features of an Object Oriented programming.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Describe the ethics of Information Technology in detail.

17. Explain the following :

    (a) Spreadsheets

    (b) Database software.

18. Briefly discuss about Virtual Office.

19. Discuss the various types of database organization.

20. Illustrate the five generations of Programming languages.

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Sub. Code
7BIT2C1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2019

Second Semester

Information Technology

PROGRAMMING IN C AND DATA STRUCTURES

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is variable?
2. Define Macro.
3. How to declare an array?
4. Mention the use of pointers.
5. What is Structure?
6. What is meant by command line parameters?
7. Define Stack.
8. What is sequential representation?
9. How to represent a list?
10. Specify any two applications of Binary Tree.

Part B (5 × 5 = 25)

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

11. (a) Briefly explain the keywords available in C.

Or

(b) Illuminate various storage classes available in C.

12. (a) Write a C program to create a pointer to a variable.

Or

(b) Give a brief note on array of pointers in C.

13. (a) Differentiate between Structure and Union.

Or

(b) How to create an unformatted data file in C?

14. (a) List and explain the applications of Stack.

Or

(b) How to create an queue using array? Give a sample C program.

15. (a) Illustrate the characteristics of Binary Tree.

Or

(b) Elaborate, how to represent Binary Tree.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Write the differences between 'while' and 'do-while' statements.

17. List and explain the operations on pointers.

18. How to pass structures to functions in C? Explain with sample program.

19. Write a C program to implement infix and postfix operations using stack.

20. How to represent list? Give sample program.

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7BIT3C1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2019

Third Semester

Information Technology

JAVA PROGRAMMING

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Class and Object.
2. What are the data types available in Java Programming?
3. What is Type Conversion?
4. Write the syntax for 'if... .else' statement.
5. How to create an object?
6. Define Interface.
7. State the uses of packages.
8. Name any two exceptions.
9. Mention the purpose of paint method in Applet.
10. Why do need <applet> tag?

Part B (5 × 5 = 25)

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

11. (a) Describe the features of Java.

Or

(b) Write a short note on JVM.

12. (a) Discuss on Operator Precedence.

Or

(b) Illustrate various mathematical functions in Java.

13. (a) What are the salient features of constructor? Write a Java program to show these features.

Or

(b) What is the role of interface while implementing multiple inheritance in Java.

14. (a) Write a short note on Importing Package.

Or

(b) What is an exception? How is it different from an error? Explain.

15. (a) What is a Java applet? How is an applet different from an application? Clarify.

Or

(b) Give a brief account on Graphics Class.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Describe the basic concepts of OOP.

17. Explain Decision Making and Branching statements in Java.

18. How to implement Two-Dimensional arrays? Explicate with an suitable program.

19. Write a Java program to implement Multithreading.

20. How to add an applet to an HTML file? Discuss with an example.

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Sub. Code
7BIT4C1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2019

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. List the advantages of open source software.
2. Define kernel mode.
3. How to terminate a MySQL program?
4. What is Metadata?
5. List the different data types in PHP.
6. What is Regular Expression in PHP?
7. How to provide numbers in Python?
8. What is tuple?
9. Write any two features of Perl.
10. How do you declare the variable in Perl?

Part B (5 × 5 = 25)

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

11. (a) Explain the advantages of Open Source software.

Or

(b) Write a short note on Scheduling in Linux.

12. (a) How do you create meta data in MySQL? Give example.

Or

(b) List and explain any five string functions in MySQL with examples.

13. (a) Illustrate the procedures to send and receive e-mails using PHP.

Or

(b) How does security provided in PHP? Explicate them.

14. (a) Elaborate the concepts of lists and tuples in Python.

Or

(b) How are exceptions handled in Python? Give example.

15. (a) Describe the control structures in Perl.

Or

(b) How packages are created in Perl? Write the procedures.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Describe the applications of Open Sources.

17. How does MySQL used in Web? Give justification.

18. How do you connect SQL database in PHP? Illustrate its procedures.

19. List and explain the various objects in Python.

20. How data is manipulated in Perl. Discuss its procedures.

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F–2641

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7BIT5C1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2019

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 is Database Management System?
2. Write the purpose of Database Systems.
3. Why do need Decomposition?
4. Specify the purpose of Normal Forms.
5. Draw the limitations of Client/Server model.
6. Give any two examples for Heterogeneous Databases.
7. Define Schema.
8. What is Data Integrity?
9. What is meant by transactions?
10. Define Stored Procedures.

Part B (5 × 5 = 25)

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

11. (a) List and explain any two Database Languages.

Or

(b) Write the features of extended E-R model.

12. (a) Elaborate the concepts of Atomic domains and First Normal form.

Or

(b) How to model the temporal data? Explain its procedures.

13. (a) Differentiate Centralized and Client/Server Architectures with diagrams.

Or

(b) Discuss on Distributed Query Processing.

14. (a) What do you mean by Indexes? Explain with examples.

Or

(b) Explain the various user privileges and roles.

15. (a) Write the features of PL/SQL in DBMS.

Or

(b) Write a brief note on Cursor.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Give a brief account on Relational Databases.

17. What are the various processes of database design? Explicate them.

18. Discuss on Types of Distributed Databases.

19. What are Synonyms? How do you create a Synonym in SQL? Give an example.

20. Discuss on PL/SQL Transactions.

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F–2642

Sub. Code
7BIT5C2

B.Sc. DEGREE EXAMINATION, NOVEMBER 2019

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 the .NET framework?

2. What is the difference between .NET and .NET framework?

3. How to construct constructor in VB.NET.

4. Specify the purpose of delegates in VB.NET.

5. Why do need windows applications?

6. What are the different types of dialog boxes?

7. What is the difference between .NET and ASP.NET?

8. How do you create custom control in ASP.NET?

9. What is the purpose of ADO.NET?

10. Write any two features of SQL server.

Part B (5 × 5 = 25)

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

11. (a) Explain the execution model of the .NET framework.

Or

(b) Describe the benefits of .NET.

12. (a) Elaborate the fundamental concepts of VB.NET.

Or

(b) What are the exceptions supported by VB.NET? Explain them.

13. (a) How to create radio buttons in windows applications? Illustrate with an example.

Or

(b) Illustrate the concepts of Calendar and Timer controls.

14. (a) Write the features of ASP.NET

Or

(b) Compare ASP with ASP.NET.

15. (a) How to implement SQL server with VB. NET? Clarify with an example.

Or

(b) Compare the architecture of ADO with ADO.NET.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Describe the components of the .NET framework and explain them.

17. Explain the various branching statements in VB.NET with examples.

18. How to create text boxes in windows applications? Explicate with examples.

19. What are the validation server controls available in ASP.NET? Illustrate them.

20. Discuss on ADO.NET features.

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Sub. Code
7BITE1A

B.Sc. DEGREE EXAMINATION, NOVEMBER 2019

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** questions.

1. Define Queue.
2. What is Stack and where it can be used?
3. Define Tree.
4. Differentiate Tree and Graph.
5. What is Linked List?
6. How to find the Shortest Path?
7. What do you mean by topological sort?
8. Write the merits of Quick sort.
9. Compare Prim and Kruskal Algorithms.
10. Why do need Huffman codes?

Part B (5 × 5 = 25)

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

11. (a) How to specify an algorithm? Give an example.

Or

(b) Elaborate the procedures of performance analysis on Algorithms.

12. (a) Explain the basic terminology of binary tree.

Or

(b) How to represent a Graph? Explain its s Terminology.

13. (a) Enumerate the procedures to implement Doubly Linked List.

Or

(b) Clarify the concepts of Dynamic Programming.

14. (a) What are steps involved in Breadth First Search? Explain with an example.

Or

(b) Discuss on Merge Sort with suitable example.

15. (a) Enumerate the procedures of Prim's algorithm.

Or

(b) How to multiply the Matrices? Illustrate its procedures.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. How to implement a Stack? Explicate with an example.

17. Illustrate the steps involved in Binary Tree Traversal.

18. Discuss on Travelling Salesman Problem.

19. Elaborate the concepts of Quick Sort with an example.

20. Give a brief account on Dijkstra's algorithm.

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Sub. Code
7BITE1B

B.Sc. DEGREE EXAMINATION, NOVEMBER 2019

Fifth Semester

Information Technology

Elective : COMPUTER GRAPHICS

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Computer Graphics.
2. Give any two examples of Graphics System Software.
3. Define Matrix
4. What is Composite Transformations?
5. Why do need point clipping?
6. What is meant by Shielding?
7. What is Translation?
8. What is Rotation?
9. Why do need User Interface?
10. What do you mean by Command Language?

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

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

11. (a) Describe Circle Generation Algorithms in detail.

Or

(b) Discuss on Input and Output devices.

12. (a) Elaborate the Transformation principles.

Or

(b) Illustrate the concepts of Matrix Representation.

13. (a) Write a short note on viewing Transformations.

Or

(b) Clarify the concepts of Line Segment Clipping.

14. (a) Discuss on Matrix Representation with examples.

Or

(b) Explicate the concepts of Mirror Reflection with examples.

15. (a) What is an User Interface? Illustrate the components of User Interface.

Or

(b) What are the general guidelines of User Interface design? Elaborate them.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Illustrate the Line Draw Algorithms.

17. Give a brief account on Basic Transformations.

18. Discuss on Convex Polygon Clipping.

19. Briefly enumerate the Composite Transformation in 3D.

20. Clarify the concepts of User's Model for User Interface.

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F–2645

Sub. Code
7BITE2A

B.Sc. DEGREE EXAMINATION, NOVEMBER 2019

Fifth Semester

Information Technology

Elective – COMPUTER NETWORKS

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Why do need Computer Networks?
2. Differentiate Broadband and Narrowband.
3. Give any two protocols used in Data Link layer.
4. Expand ALOHA
5. Define Fragmentation.
6. What is Tunneling?
7. What is Addressing?
8. Specify the advantages of UDP.
9. Differentiate private and public keys.
10. Why do need Data Compression?

Part B (5 × 5 = 25)

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

11. (a) Describe the various types of Transmission Media.

Or

(b) Write a short note on Communication Satellites.

12. (a) Elaborate the concepts of Sliding Window Protocol

Or

(b) Explain the Petri net models with neat diagrams.

13. (a) Enumerate any two Routing Algorithms.

Or

(b) Give a brief note on ATM's LANs.

14. (a) Clarify the concepts of Floe Control and Buffering.

Or

(b) Explicate any two Internet Transport Protocols.

15. (a) What are the functions of Application layer discuss it.

Or

(b) List and explain any two Public Key Algorithms.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Explicate the various functions of ISO/OSI Reference Model.

17. Discuss on Media Access Sub Layer.

18. Elaborate the concepts of any two Congestion Control Algorithms.

19. How to measure the network performance? Illustrate its procedures.

20. Give a brief account on Cryptography.

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Sub. Code
7BITE2B

B.Sc. DEGREE EXAMINATION, NOVEMBER 2019

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. Why do need Security?
2. Specify the limitations of AES algorithm.
3. Define Virus.
4. What is User Authentication?
5. Give any two examples for Trusted Operating System.
6. What is Data Integrity?
7. Name any two Security Threats.
8. Name any two Network Security threats?
9. What is Privacy?
10. How to secure E-Mail?

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

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

11. (a) Describe the characteristics of Computer Intrusion.

Or

(b) Write short note on Transpositions.

12. (a) Explain the various types of Security flaws.

Or

(b) How to protect memory and its address? Clarify.

13. (a) Write a short note on Reliability and Integrity.

Or

(b) Enumerate the various Security Policies for Trusted System.

14. (a) What are the controls available for Network Security? Explain them.

Or

(b) Give a brief account on Intrusion Detection Systems.

15. (a) List and explain various privacy principles.

Or

(b) How to provide Authentication? Explicate its concepts.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Elaborate the concepts of Public Key Encryption with an example.

17. What are the controls available against program threats? Explain them.

18. Describe various Security models in detail.

19. What is the role of Firewall in Network Security? Justify.

20. How to preserve privacy in Data Mining? Discuss.

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