A–10349	Sub. Code
	4BIT1C1

B.Sc. DEGREE EXAMINATION, APRIL 2021 &
Supplementary/Improvement/Arrear Examinations

First Semester

Information Technology

PRINCIPLES OF INFORMATION TECHNOLOGY

AND OS

(CBCS – 2014 onwards)

Time : Three Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Define Digital Computer.
2. Name any two secondary storage devices.
3. Mention any two uses of spreadsheets.
4. Give the purpose of Wel Browsers.
5. How internet differs from infranet?
6. What is a modem?
7. Name any two operating systems?
8. What is the need for Batch System?
9. How process differ from processes?
10. Mention any two benefits from threads.

Part B (5 × 5 = 25)

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

11. (a) Discuss the developments in communication technology.

Or

(b) How Hard disks works as a secondary storage device?

12. (a) Explain on any two types of application software.

Or

(b) Mention the role of personal information managers.

13. (a) Discuss on the telephone related communication services.

Or

(b) Explain the role of cable modems.

14. (a) Mention the merits of parallel systems.

Or

(b) What is the need for virtual machines?

15. (a) List the concepts of process.

Or

(b) Discuss on kernel threads.

Part C

$(3 \times 10 = 30)$

Answer any **THREE** questions.

16. Discuss on the following database organization

    (a) Sequential Access

    (b) Random Access

17. Explain the special features of word processing software.

18. How to perform video conferencing explain?

19. Discuss the following

    (a) System calls

    (b) System programs

20. Explain the concepts involved in CPU scheduling.

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A–10087

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4BIT2C1

B.Sc. DEGREE EXAMINATION, APRIL 2021 &

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Second Semester

Information Technology

PROGRAMMING IN C AND DATA STRUCTURES

(CBCS – 2014 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. List the C Character Sets.
2. Define Function.
3. What is Array?
4. List the advantages of Dynamic Memory Allocation.
5. Write a note on Union.
6. What is Bit Field? With Examples.
7. What is Stack?
8. Write about Circular Queue.
9. Define Binary Tree.
10. List the applications of Tree.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Differentiate between While and do–while 1oops with Examples.

Or

(b) Write a program to perform Factorial number using Recursion function.

12. (a) Write a program to sort the numbers using array.

Or

(b) Discuss about Dynamic Memory Allocation with example.

13. (a) Explain array of structures with suitable example.

Or

(b) Write a C program to read and display a text from the file.

14. (a) Explain the operations performed on queue.

Or

(b) Explain how an infix expression is converted to a postfix expression with example.

15. (a) Discuss about the Binary Tree Representation in detail.

Or

(b) Explain in detail about the applications of trees with example.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Explain in detail about function with example.

17. Discuss in detail about pointer with example.

18. Explain structure declaration in C.

19. Explain in detail about stack implementation using arrays.

20. Write a suitable program to implement Single linked list.

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	4BIT3C1

B.Sc. DEGREE EXAMINATION, APRIL 2021 &

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Third Semester

Information Technology

PROGRAMMING IN C++ AND ALGORITHMS

(CBCS – 2014 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is the use of void data in C++?
2. What do you meant by cin and cout?
3. What do you meant by access specifiers?
4. Discuss the rules to declare a constructor in a class.
5. Discuss the use of new and delete operators.
6. Difference between Unary and Binary Operators.
7. Give the time complexity of Quick sort Algorithm.
8. Discuss the process of depth first search.
9. Discuss the general method of backtracking.
10. What is meant by Huffman code?

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Distinguish between call by reference and call by value.

Or

(b) Discuss about Private, Public & protected access specifiers. Explain with the help of a class inventory and show how can we access the private member?

12. (a) What is meant by constructors? How it differ from member function?

Or

(b) Define parameterized Constructors.

13. (a) Define pointers with Example.

Or

(b) Describe the syntax of multiple inheritance. Explain with suitable example.

14. (a) Discuss on quick sort algorithm with example.

Or

(b) Explain about Binary tree Traversal technique with neat diagram.

15. (a) Write an algorithm for Single source shortest path.

Or

(b) Define spanning tree. Describe the Kruskal's algorithm for finding the minimum cost spanning tree with suitable example.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. What are various kinds of loop statements supported by C++? Explain with Examples.

17. Explain the concept of two dimensional array with example.

18. Define Virtual Function. Explain the difference between Virtual function and Pure virtual function with suitable examples.

19. What is meant by Backtracking technique? Explain its algorithm with suitable example.

20. Describe the Warshall's algorithm for Shortest path.

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A–10089	Sub. Code
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B.Sc. DEGREE EXAMINATION, APRIL 2021 &

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Fourth Semester

Information Technology

JAVA PROGRAMMING

(CBCS – 2014 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. List the benefits of OOP.
2. Define JVM.
3. Write the syntax of Nested if.
4. List the Arithmetic Operators.
5. Define a class with syntax.
6. What is the use of Object?
7. List the types of Errors.
8. Define Thread.
9. What is Applet?
10. Write a note on Graphic Class.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write about the Basic concepts of OOP in detail.

Or

(b) Write a program to display the Fibonacci Series using Loop concept.

12. (a) Discuss in detail about the bitwise Operators with example.

Or

(b) Write a program to find the Palindrome Number using Switch Statement in Java.

13. (a) Write a program to display Student details using Class & Object in Java.

Or

(b) Discuss about the Method Overloading with suitable Program.

14. (a) Write a program to calculate area of shape using package in Java.

Or

(b) Explain about the Thread Class and the Implementing Runnable Interface with examples.

15. (a) Discuss how to Pass Parameters in Applet.

Or

(b) Demonstrate the Lines and Rectangles using Applet in Java.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Explain the Java Program Structure with a suitable example.

17. Describe in detail about various Branching Statement with Syntax and Examples.

18. Explain how to implement interfaces in java with example.

19. Explain about the Life Cycle of Thread in detail.

20. Explain how to design Web page using Applet.

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A–10090	Sub. Code
	4BIT5C1

B.Sc. DEGREE EXAMINATION, APRIL 2021 &

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Fifth Semester

Information Technology

DATABASE MANAGEMENT SYSTEMS

(CBCS – 2014 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all the** questions.

1. Write any three Database-System Applications
2. What is data abstraction?
3. What is schema?
4. Explain Axioms.
5. What is multiuser system?
6. Define data transactions.
7. What is data integrity and why is it important in database?
8. What is data view?
9. Write the three section of PL/SQL block.
10. Write the types of triggers.

Part B (5 × 5 = 25)

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

11. (a) Briefly explain the purpose of database systems.

Or

(b) Explain the Database design with different phases.

12. (a) Decomposition using functional dependencies.

Or

(b) Explain Boyce -Codd normal form.

13. (a) Simply explain the server system architecture with pictorial representation.

Or

(b) Explain distributed database system with local and global transactions.

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

Or

(b) Explain sequences and views in database systems.

15. (a) Explain stored procedure with syntax and sample program.

Or

(b) Explain the use of package in PL/SQL and write the sample program.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Discuss the different types of database languages with examples

17. Describe the functional dependency theory with Closure of Attribute Sets, Canonical Cover and Dependency Preservation.

18. Explain the distributed data storage and data transactions.

19. Illustrate the steps to create and maintain the table with suitable examples

20. Elaboratly explain the cursor uses and type with suitable example program

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B.Sc. DEGREE EXAMINATION, APRIL 2021 &

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Fifth Semester

Information Technology

VISUAL PROGRAMMING

(CBCS – 2014 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all the** questions.

1. What do you mean by IDE?
2. Write any four features of Visual Basic.
3. State any four advantages of creating ActiveX control.
4. Difference between text box and combo box control.
5. Define Common dialog Box.
6. What is file open?
7. What are the features of ADO data control?
8. Write different types of Record set.
9. What are the advantages of MFC library?
10. Define C file.

Part B (5 × 5 = 25)

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

11. (a) Write short notes on string functions with example.

Or

(b) Explain argument passing mechanisms with example.

12. (a) Explain any four form properties with example.

Or

(b) Explain textbox controls in visual basic.

13. (a) Write short notes on Rich text Box control.

Or

(b) Explain MDI Properties of Visual Basic.

14. (a) Explain the open method for a record set.

Or

(b) Explain DAO Data Access Object with example.

15. (a) Explain how a window is creating using MFC.

Or

(b) Explain detail about AFX functions.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Discuss about control flow statements in visual basic.

17. What is Menu? Explain the steps of creating a menu with a suitable example?

18. Explain the common dialog control in Visual Basic?

19. Discuss the open method for an ADO connection.

20. Briefly explain in detail about MFC class hierarchy.

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B.Sc. DEGREE EXAMINATION, APRIL 2021 &

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Fifth Semester

Information Technology

***Elective* — GRAPHICS AND MULTIMEDIA**

(CBCS – 2014 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. State the difference between interactive and non-interactive graphics.

2. What are the two categories of flat-panel displays?

3. Why translation is called as rigid-body transformation?

4. State the equation for general fined-point scaling.

5. What is viewing transformation?

6. What is a clip window?

7. Write any two advantages of multimedia in education.

8. What is hypermedia?

9. What is bitmap graphics?

10. What is computer animation?

Part B (5 × 5 = 25)

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

11. (a) Explain the basic design and operations of a cathode-ray-tube.

Or

(b) Explain the graphics functions of a general-purpose graphics package.

12. (a) Explain the efficient matrix representations of two-dimensional transformations.

Or

(b) Explain about two successive translations and rotations of two-dimensional composite transformations.

13. (a) What do you mean by polygon clipping? Explain.

Or

(b) Generate a three-dimensional transformation of rotation for an object.

14. (a) Write down the objectives of multimedia.

Or

(b) How do you animate text? Explain with an example.

15. (a) Compare scanned images with video images.

Or

(b) Write down the characteristics of sound and digital audio.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Explain the DDA algorithm for line drawing.

17. Describe the two-dimensional basic transformations in detail.

18. Explain the Cohen-Sutherland line clipping procedure.

19. Enumerate the design and usage of Type fonts, font style and size of text usage in multimedia.

20. Explain the capture and playback in multimedia digital video.

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B.Sc. DEGREE EXAMINATION, APRIL 2021 &

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Fifth Semester

Information Technology

Elective – COMPUTER NETWORKS

(CBCS – 2014 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define LAN, WAN and MAN.
2. What are the two interface provided in protocols?
3. What are the issues in Data Link Layer?
4. What is the use of two dimensional parity in error detection?
5. What do you mean by ARP and RARP.
6. What is the need of internet layer?
7. What is multicasting?
8. Compare connectionsless and connection oriented service.
9. What is SMTP?
10. Name four aspects of security.

Part B (5 × 5 = 25)

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

11. (a) Describe the different types of transmission used in network.

Or

(b) Describe the criticism of OSI model.

12. (a) Describe the simplex stop an wait protocol.

Or

(b) Compare Datagram and virtual circuit subnet.

13. (a) Explain the importance of transport protocol.

Or

(b) What are the advantages and disadvantages of WWW?

14. (a) Write a comparison on fiber option and copper wire.

Or

(b) Explain Microwave transmission.

15. (a) What are the design issues in Network layer? Explain.

Or

(b) Write Dijktra algorithm to compute the shortest path.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Discuss the critiques of OSI model and protocols.

17. What are the physical media used for transmission? Explain.

18. Explain the protocol using Go-Back-N.

19. Explain shortest path routing algorithm with an example.

20. Describe the wireless Application protocol.

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A–10428

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B.Sc. DEGREE EXAMINATION, APRIL 2021 &

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Fifth Semester

Information Technology

Elective – CLIENT SERVER COMPUTING

(CBCS – 2014 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is Client/Server computing?
2. What is meant by connectivity?
3. What is the role of a client?
4. Write a note on server OS.
5. What is meant by Ethernet?
6. What is the use of hub?
7. Write the definition for architecture.
8. What is meant by CASE?
9. What is meant by remote system management?
10. How do you perform end user training?

Part B (5 × 5 = 25)

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

11. (a) Write short notes on downsizing and Client/Server computing.

Or

(b) Explain about mainframe centric Client/Server computing.

12. (a) Describe about services provided by a client.

Or

(b) Write the advantages of network operating system.

13. (a) Write a brief note on fiber distributed data interface.

Or

(b) Illustrate on inter process communication.

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

Or

(b) Explain the productivity measures.

15. (a) Explain the training advantages of GUI applications.

Or

(b) Illustrate on training delivery technology.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Discuss about the advantages of Client/Server computing.

17. Explain the components of Client/Server applications.

18. Enumerate the concept of Simple Mail Transfer Protocol.

19. Describe the Client/Server system development with respect to hardware.

20. Explain the following.

    (a) System administrator training

    (b) Database administrator training.

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A–9696

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B.Sc DEGREE EXAMINATION, APRIL 2021 &

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Sixth Semester

Information Technology

SOFTWARE ENGINEERING

(CBCS – 2014 onwards)

Time : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. List out the types of activities involved in software maintenance.

2. Define democratic team.

3. What is Delphi Cost Estimation?

4. What do you mean by Recurrence Relations?

5. Define modularity.

6. What are the guidelines to be followed for making good coding style?

7. Distinguish between Verification and Validation.

8. Write the formula to calculate the program length using Halstead's method.

9. Define Quality.

10. Write the formula to calculate the error index in software engineering process.

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

Answer **all** questions.

11. (a) Explain the various categories of software project size.

Or

(b) Discuss about the programming team structure.

12. (a) Explain how to estimate the software maintenance cost.

Or

(b) Discuss the Axiomatic Specification of the LIFO.

13. (a) Describe about Structural Flowcharts and Structural English.

Or

(b) Write about Data encapsulation.

14. (a) Discuss the strategic issues of software testing.

Or

(b) Describe about Configuration Management

15. (a) Briefly explain about SQA.

Or

(b) Write about ISO 9001 Standard.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Describe the phased model of the software life cycle.

17. Explain in detail about software requirements specification.

18. Illustrate the following with an example:

    (a) Single entry, Single exit constructs

    (b) Violations of Single Entry, Single Exit

19. Explain in detail about integration testing.

20. Describe in detail about Formal Technical Review.

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A–9697

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4BIT6C2

B.Sc DEGREE EXAMINATION, APRIL 2021 &

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Sixth Semester

Information Technology

CLOUD COMPUTING

(CBCS – 2014 onwards)

Time : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. Define Cloud Computing.
2. Name some Web Services.
3. What are services provided by cloud?
4. Mention the Elasticity In Cloud Services.
5. Illustrate the Issues In Clouds.
6. State the Challenges in Cloud Storage.
7. Name few Cloud Storage.
8. Define Map Reduce.
9. How does the open source differ from closed source?
10. Explain the Cloud Deployment Tool.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Explain the Benefits Of Cloud computing.

Or

(b) Brief Note On Evolution Of Cloud Computing.

12. (a) Briefly Explain PaaS.

Or

(b) Neat sketch on three layers of Cloud Architecture.

13. (a) Discuss about the limitations of Cloud computing.

Or

(b) What is meant by Federation in Cloud?

14. (a) Illustrate Hadoop with examples

Or

(b) Give a keynote on Cloud File System.

15. (a) Compare and Contrast The Open Source And Closed Source.

Or

(b) What is EUCALYPTUS?

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Define Virtualization and its types.

17. Explain the Software as a Service in detail.

18. Discuss about the Federation In Cloud and its Level Of Abstraction.

19. Write about the Overview Of Cloud Storage.

20. What is Open Nibula?

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	4BIT6C3

B.Sc. DEGREE EXAMINATION, APRIL 2021 &

Supplementary/Improvement/Arrear Examinations

Sixth Semester

Information Technology

WEB PROGRAMMING

(CBCS – 2014 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is HTML frame?
2. State the use of increment and decrement operator.
3. How will you declare an array in JavaScript?
4. Write any two examples of Math object.
5. State the use of navigation object.
6. What is Wave filter in DHTML?
7. How to embed PHP in HTML?
8. What is regular expression?
9. Write the use of sequence in python.
10. Define Exception handling.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) With an example, explain HTML Table and its attributes.

Or

(b) Explain the variants of if control structures in JavaScript.

12. (a) Explain how to define functions in JavaScript.

Or

(b) Write a Javascript to search the given element in an array.

13. (a) Explain about Form processing in DHTML with an example.

Or

(b) How to handle error in DHTML?

14. (a) How will you create and invoke a function in PHP?

Or

(b) Explain how to send and receive e-mail in PHP.

15. (a) Explain the different types of list in python.

Or

(b) Write about OOPs in Python.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Explain the tags associated with ordered and unordered list.

17. Illustrate about String object in JavaScript with an example.

18. Explain the following:

    (a) chroma filter

    (b) miscellaneous image filters

19. Describe in detail about various string manipulations with examples.

20. Explain about Input and output statements in Python.

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A–9699	Sub. Code
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B.Sc. DEGREE EXAMINATION, APRIL 2021 &

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Sixth Semester

Information Technology

Elective: MOBILE COMMUNICATION

(CBCS – 2014 onwards)

Time : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. Write the examples of mobile and wireless devices graded by increasing performance.

2. What is signal?

3. List out the functions of radio network subsystems.

4. Give the major difference between DECT and GSM.

5. How data is encrypted and decrypted in HIPERLAN MAC?

6. Write the motivation for WATM.

7. Define reverse tunnelling.

8. What are the advantages of Transmission / Time-out freezing?

9. Define Ficus.

10. What is WMLScript?

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

Answer **all** questions.

11. (a) Explain briefly about Antennas.

Or

(b) Briefly explain about direct sequence spread spectrum.

12. (a) Compare S/T/F/CDMA of MAC scheme.

Or

(b) Briefly describe about Digital Video broadcasting.

13. (a) Write short notes on Bluetooth.

Or

(b) Explain about BRAN.

14. (a) Explain the Dynamic Host configuration protocol with suitable diagram.

Or

(b) Discuss in detail about Indirect TCP.

15. (a) Explain about HTTP.

Or

(b) Explain about Wireless Datagram protocol.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Illustrate about multiplexing and its types.

17. Describe in detail about DECT.

18. Discuss the handovers reference model in WATM environment.

19. Explain in detail about agent advertisement and discovery.

20. Explain in detail about Wireless Telephony Application.

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A–10172

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U.G. DEGREE EXAMINATION, APRIL 2021 &

Supplementary / Improvement / Arrear Examinations

Information Technology

Allied : DISCRETE MATHEMATICS

(CBCS – 2014 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define: Proposition.

2. Write the following statement in symbolic form:

   If it is raining, then we will not meet today.

3. Define: (a) Elementary product (b) Elementary sum.

4. What is Universal quantifier?

5. Define: Null Graph. Give an example.

6. What is simple digraph?

7. Draw all trees with four vertices.

8. What is cut-set?

9. Find all partitions of the set $A = \{a, b, c\}$.

10. What is partial ordering?

Part B (5 × 5 = 25)

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

11. (a) Define: Conditional statement and draw its truth table.

Or

(b) What is well-formed formula? Give examples.

12. (a) Obtain a conjunctive normal form of

$$P \to \left((P \to Q) \wedge \neg\left(\neg Q \vee \neg P\right)\right)$$

Or

(b) Verify the validity of the following argument:

Lions are dangerous animals. There are lions. Therefore there are dangerous animals.

13. (a) Define Tournament graph and give an example of tournament with six vertices.

Or

(b) Prove that, in any graph, the number of vertices of odd degree is even number.

14. (a) Show that a connected graph with n vertices and n-1 edges is a tree.

Or

(b) Write the Kruskal's algorithm to find the minimum spanning tree.

15. (a) Prove that the relation "congruence module m" over the set of positive integers is an equivalence relation.

Or

(b) Show that every chain is a distributive lattice.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Construct the truth table of the following formulas:

(a) $\left(\neg P \vee Q\right) \wedge \left(\neg Q \vee P\right)$

(b) $(P \wedge Q) \vee \left(\neg P \wedge Q\right) \vee \left(P \wedge \neg Q\right) \vee \left(\neg P \wedge \neg Q\right)$

17. Obtain the principal conjunctive normal form of the formula

$\left(\neg P \to R\right) \wedge (Q \rightleftarrows \text{P})$

18. Prove that a simple graph with n vertices and k components can have at most $(n-k)(n-k+1)/2$ edges.

19. Explain the Dijkstra' s algorithm to find the shortest path problem.

20. In a Boolean algebra, show that

(a) $a \vee (a' \wedge b) = a \vee b$

(b) $a \wedge (a' \vee b) = a \wedge b$.

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A–10173	Sub. Code
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U.G. DEGREE EXAMINATION, APRIL 2021 &

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Information Technology

Allied – OPERATION RESEARCH

(CBCS – 2014 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define OR.

2. What is the Scope of OR?

3. Define Slack Variable.

4. What are the phases of the two-phase method of solving a LPP?

5. Write the dual of the LPP:

   Minimize $Z = 2x_1 - 3x_2$

   Subject to :

   $x_1 + x_2 \geq 3$

   $2x_1 - 3x_2 \geq 1$

   $x_1, x_2 <= 0$.

6. What is the use of Branch and Bound Method?

7. When do you say an assignment problem is balanced?

8. State the Travelling Salesman Problem.

9. What is degeneracy in a Transportation Problem?

10. State any two methods used to obtain the IBFS of a Transportation Problem.

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

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

11. (a) Discuss the main phases of OR.

Or

(b) What is modeling? Explain in the context of OR.

12. (a) Obtain the graphical solution to the following LPP:

Maximize $z = 4x_1 + x_2$

Subject to

$$x_1 + x_2 \leq 50$$
$$3x_1 + x_2 \leq 90$$
$$x_1, x_2 \geq 0 .$$

Or

(b) Write the steps for solving an LPP using the artificial variable technique.

13. (a) Use Dual Simplex method to solve the LPP:

Minimize $z = 2x_1 + 3x_2$

Subject to

$$2x_1 - x_2 - x_3 \geq 3$$
$$x_1 - x_2 + x_3 \geq 2$$
$$x_1, x_2, x_3 \geq 0 .$$

Or

(b) Write the steps of the Branch and Bound Method.

14. (a) What are the methods to solve an assignment problem? Explain any one.

Or

(b) Solve the following Assignment problem:

	J1	J2	J3	J4
W1	82	83	69	92
W2	77	37	49	92
W3	11	69	5	86
W4	8	9	98	23

15. (a) What is an unbalanced transportation problem? Give an example.

Or

(b) Obtain the IBFS of the following Transportation Problem:

Source/To	D	E	F	Supply
A	5	8	4	50
B	6	6	3	40
C	3	9	6	60
Demand	20	95	35	150

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

Answer any **three** questions.

16. Discuss the tools, techniques, and methods of OR.

17. Use the Big-M Method for the LPP:
Maximize $z = 3x_1 + 2x_2$
Subject to :

$2x_1 + x_2 \leq 2$

$3x_1 + 4x_2 \geq 12$

$x_1, x_2 \geq 0$.

18. Explain Gomory's cutting plane method with an example.

19. Use Hungarian method to solve the following Assignment Problem:

	I	II	III	IV
A	8	26	17	11
B	13	28	4	26
C	38	19	18	15
D	19	26	24	10

20. Obtain the optimal solution for the following Transportation Problem:

A trucking company has a contract to move 115 truckloads of sand per week between three sand washing plants W, X, and Y, and three destinations A, B, and C. Cost and volume information is given below. Compute the optimal transportation cost.

To / From	Project A	Project B	Project C	Supply
Plant W	5	10	10	35
Plant X	20	30	20	40
Plant Y	5	8	12	40
Demand	45	50	20	

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U.G. DEGREE EXAMINATION, APRIL 2021 &

Supplementary / Improvement / Arrear Examinations

Information Technology

ACCOUNTING PRINCIPLES AND COMPUTER APPLICATIONS

(CBCS – 2014 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is real account? Explain its rule.
2. What is business entity concept?
3. Define Ledger.
4. What do you mean by Trail Balance?
5. What are subsidiary books?
6. What is cash Book? -
7. What do you understand by Accounting cycles?
8. What is Balance sheet?
9. What is Bank Reconciliation statement?
10. Define overdraft.

Part B (5 × 5 = 25)

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

11. (a) State the various features of Double Entry System.

Or

(b) Journalise the following transactions:

			Rs.
February	1.	Bought goods from Senthil for cash	730
	2.	Bought machinery	6,700
	3.	Paid for stationery	120
	4.	Bought goods from Arumugam	875
	5.	Received five chairs from Godraj Co.	225
	6.	Bought packing material from Umanath and Co.	175

12. (a) Explain the objects for preparing a Trail Balance.

Or

(b) From the under mentioned balances extracted from the books of a Trader, prepare a Trial Balance, as on 31st March 2018:

	Rs.		Rs.
Cash in hand	2,400	Plant and machinery	1,20,000
Capital	2,00,000	Sales	4,00,400
Purchases	2,40,000	Furniture and fittings	30,000

	Rs.		Rs.
Bills payable	44,000	Bad debts Reserve	2,000
Stock (opening)	70,000	Bills receivable	40,000
Sundry Debtors	1,00,000	Rent and taxes	20,000
Sundry Creditors	48,000	Salaries	40,000
Wages	32,000		

13. (a) Describe about various subsidiary books prepared by a business concern.

Or

(b) Enter the following transaction in proper subsidiary books

2018		Rs.
March 1.	Bought goods from A. Albert	2,000
2.	Sold goods to B. Brown	1,000
7.	C. Charles sold goods to us	1,000
8.	D. David bought goods from us	700
10.	Received goods returned by B. Brown	80
12.	We returned goods to A. Albert	50

14. (a) What are final accounts? Explain.

Or

(b) From the following particulars extracted from the books of Mr.Alavayan Prepare the Trading Account for the year ended March 31, 2018.

	Rs.
Stock on 1-4-2017	8,000
Purchases	70,000
Wages	15,800

	Rs.
Sales	1, 25,000
Carriage Inwards	800
Gas	2,200
Purchases Returns	2,000
Sales Returns	1,500
Value of closing stock	10, 000

15. (a) State the need for preparing Bank Reconciliation statement.

Or

(b) From the following particulars, ascertain the Bank Balance as per Pass book on March 31, 2018:

(i) The bank balance as per cash book on that date was Rs. 11,500.

(ii) Cheques issued but not cashed before that date amounted to Rs. 1,750.

(iii) Cheques paid into bank, but not cleared before March 31, 2018 amounted to Rs. 2,150.

(iv) Interest on investments collected by the bank but entered in the cash book amounted to Rs. 275.

(v) Bank charges debited in the pass book Rs. 25.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. What are the various accounting concepts? Explain.

17. Journalise the following transactions in Mukunda's books:

2018

August 8. Sold good to Mohan on credit Rs.1, 300.
9. Bought goods for cash from Saman Rs.300
10. Met travelling expenses Rs. 300
11. Received an amount of Rs. 8,000 from Krishna as loan.
12. Returned damaged goods to Parameswaran Rs. 80
13. Paid Insurance premium Rs. 800
15. Paid wages to workers Rs.300.

18. Enter the following transaction in Gopalan's columnar Cash Book:

2018

Jan.1 Opening balance: Cash Rs. 830: Bank 12,700
2. Sold goods for cash Rs. 1,300
3. Paid dues to Rama Rs. 1,000 by cheque
5. Paid Rs. 1,000 to bank
8. Received Rs. 800 from kesav in full settlement of his debt for Rs.820
10. Paid wages Rs. 50 in cash
11. Withdraw Rs. 5,000 from bank and paid salaries Rs. 3,800 and Advertising charges Rs. 500.
12. Settled a debt of Rs. 1,000 at 2% discount, by issuing cheque.

19. From the following Trail Balance, prepare the Trading and Profit and Loss Account for the Year ended March 31, 2018 and a Balance Sheet as at that date.

Trading Balance of C. Naiker on March, 31. 2018

	Dr.	Cr.
	Rs.	Rs.
Capital		40,000
Sales		25,000
Purchases	15,000	
Salaries	2,000	
Rent	1,500	
Insurance	300	
Drawings	5,000	
Machinery	28,000	
Bank	4,500	
Cash	2,000	
Stock	5,200	
Debtors	2,500	
Creditors		1,000
	66,000	66,000

Adjustment required:

(a) Stock on hand at December 31, 2018 Rs.4, 900

(b) Salaries owing Rs. 300

(c) Rent paid in advance Rs.200.

(d) Insurance paid on advance Rs. 90

(e) Depreciate machinery by 10 per cent.

20. From the following particular ascertain the balance that would appear in the cash book of Mr. M. Ranganathan as on 31st December, 2018:

(a) Overdraft balance as per pass book Rs. 24,240.

(b) Cheque amounting to Rs. 8,200 were paid into the bank on 28th December of which only Rs. 600 was credited by the bank in the pass book till 31st December

(c) Cheque for Rs. 5,400 were issued on 28th December 2018 out of which only one cheque for Rs.800 was presented for payment

(d) There is a debit of Rs. 200 for interest and Rs. 50 for bank charges in the pass book which have not been entered in the cash book.

(e) Rs. 400 debited to bank account in the cash book has been omitted to be banked

(f) There was a wrong debit of Rs. 600 in the pass book.

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A–10174	Sub. Code
	4BITSA4

U.G. DEGREE EXAMINATION, APRIL 2021 &

Supplementary/Improvement/Arrear Examinations

Information Technology

Allied - E-COMMERCE

(CBCS – 2014 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all the** questions.

1. What is e-commerce?
2. Define Encryption.
3. Define Cipher.
4. Define the term Digital Signature.
5. What is digital signature currencies?
6. Define Secure Electronic Signature.
7. Define Cyber Crash.
8. What is Virtual internet payment system?
9. Write the uses of smart cards.
10. What is EDI envelope?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Explain scope of B2C over the mobile phone.

Or

(b) Explain major issues of Internet.

12. (a) What is digital signature? Explain it with a diagram.

Or

(b) Discuss the security issues and solutions related to e-commerce.

13. (a) Explain different types of e-businesses.

Or

(b) How to provide security to web servers.

14. (a) Compare digital and virtual internet payment system.

Or

(b) Describe the benefits of online commerce.

15. (a) Explain ecash client software.

Or

(b) Why do we need smart card?

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Explain Message integrity in detail.

17. Explain different network security problems with solutions.

18. Discuss the various electronic payment systems.

19. Describe the cyber cash model and its security systems.

20. Explain the various challenges of E-commerce.

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