

<b>AFC-7624</b>
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<b>1BITA1/ 1BIT1A2</b>
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**U.G. DEGREE EXAMINATION, NOVEMBER 2015**

**Information Technology**

***Allied* — OFFICE AUTOMATION**

**(CBCS – 2011 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** the questions.

1. What is the use of F2 and Alt+F4 keys in Windows?
2. List the two accessories which are used for calculation and typing text.
3. What is the need of Document in MS Word?
4. What is the purpose of the short cut keys Shift+F3 and Shift+F7?
5. Define Worksheet.
6. List any four most often used Functions in Excel.
7. What is the use of a Primary Key?
8. How to create a table in Access?
9. What are the advantages of PowerPoint?
10. Write the purpose of Dialog Box.

**Part B****(5 × 5 = 25)**

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

11. (a) Explain the various kinds of Bars available in Windows?

Or

- (b) How to create, save, name, close, delete a Document? Explain.

12. (a) What are the Formatting options available in MS Word? Explain with examples.

Or

- (b) How to create and align a table in MS Word Document? Explain with an example.

13. (a) List and explain any five Statistical Functions available in Excel.

Or

- (b) What are the different types of charts created in Excel? Explain.

14. (a) What is a Form? How to create it in Access? Explain with an example.

Or

- (b) How to create and print Reports in Access? Explain with an example.

15. (a) Explain the steps in creating Slides with examples.

Or

- (b) How to start Outlook? Explain its Menus in detail.

**Part C**

(3 × 10 = 30)

Answer any **three** questions.

16. What is a Window? Describe its advantages in detail.
  17. With neat diagram, illustrate the environment of MS Word.
  18. Enumerate the tools used for formatting the text and numbers in Excel.
  19. What is a Database in Access? Discuss its concept in detail with an example.
  20. PowerPoint is a Presentation Tool — Give your comments and explain.
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<b>AFC-7481</b>
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<b>1BIT2C1</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2015**

**Second Semester**

**Information Technology**

**PROGRAMMING IN C AND DATA STRUCTURES**

**(CBCS – 2011 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Define variable.
2. Write the syntax of printf ( ) function.
3. How to define an array?
4. What is meant by pointer?
5. Define bit field.
6. How to define a structure?
7. What is FIFO?
8. How are stacks implemented?
9. Define binary tree.
10. What is leaf?

**Part B**

(5 × 5 = 25)

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

11. (a) What are the different types of looping statements? Explain them.

Or

- (b) Explain the various storage class specifications in C.

12. (a) Write a C program to calculate the average of n numbers using array.

Or

- (b) Describe dynamic memory allocation.

13. (a) Write a detailed notes on Structures and Pointers.

Or

- (b) Write a note on union. Give an example.

14. (a) Explain the various queue operations with neat diagram.

Or

- (b) How to represent the stacks in C? Explain.

15. (a) Write a function in C to count the number of nodes in a binary tree.

Or

- (b) What are the two types of balanced tree? Explain with the help of an illustration.

**Part C**

(3 × 10 = 30)

Answer any **three** questions.

16. Describe the different types of operators in C with suitable example.
  17. Explain the following
    - (a) Passing on array to functions (5)
    - (b) Arrays of pointers (5)
  18. (a) What are the file type specifications? Explain them. (5)  
  
(b) Write a C program to read a line of text from a data file and display it on the screen. (5)
  19. Give a detailed account on linked list with suitable example.
  20. Elucidate on binary tree traversal with example.
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2015**

**Third Semester**

**Information Technology**

**PROGRAMMING IN C++ AND ALGORITHMS**

**(CBCS – 2011 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Define Tokens.
2. What is the use of Static data member?
3. Which symbol is used to create destructor?
4. Why do we need copy constructor?
5. Define type conversion.
6. List out types of inheritance.
7. Define topological sort.
8. Write time complexity of the Binary sort.
9. What is Houffman code?
10. Define Kruskal's algorithm.

**Part B****(5 × 5 = 25)**

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

11. (a) Explain about Control statements with an example.

Or

- (b) Discuss about Nesting of member functions.

12. (a) Specify about dynamic constructor with an example.

Or

- (b) Briefly explain about copy constructor with suitable example.

13. (a) Specify about Hierarchical inheritance with an example.

Or

- (b) Explain about Pointers to objects.

14. (a) Elucidate binary sort with suitable example.

Or

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

15. (a) State the Prim's algorithm.

Or

- (b) Briefly explain about Knapsack problem.



**Part C**

(3 × 10 = 30)

Answer any **three** questions.

16. Explain about Friend function with suitable example.
  17. Discuss in detail about multiple constructor in a class.
  18. Hybrid inheritance with suitable example, explain in detail.
  19. Specify about Quick sort with an example.
  20. Illustrate about Longest common subsequence problem with an algorithm.
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<b>1BIT4C1</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2015**

**Fourth Semester**

**Information Technology**

**JAVA PROGRAMMING**

**(CBCS – 2011 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. What is JVM?
2. What are the basic data types in Java?
3. What do you mean by labelled loops?
4. Why do we need mathematical functions in Java.
5. What is a final class?
6. What is an abstract class?
7. What are Java API packages?
8. What do you mean by exceptions?
9. How do you add applet to HTML file?
10. Write the steps for drawing bar charts.

**Part B****(5 × 5 = 25)**

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

11. (a) Write short note on world wide web (WWW).

Or

- (b) Write a Java program to read some personal data and print it.

12. (a) Write a Java program to find the biggest of three numbers using ternary (?:) operator.

Or

- (b) Write a short note for various looping statements in Java.

13. (a) Write short note on multiple inheritance in Java.

Or

- (b) Write a Java program to read 'n' student information and store them in an array.

14. (a) Write a Java program to implement packages.

Or

- (b) Write a Java program to print the numbers from 1 to 100 by using thread methods.

15. (a) Write the life cycle of applet.

Or

- (b) Write a applet program to read input from the user and display it in neat format.

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

Answer any **three** questions.

16. Discuss the various benefits of OOP.
  17. Write a Java program to print a character is vowel or not.
  18. Discuss the following:
    - (a) Visibility control
    - (b) Method overloading.
  19. Explain in detail the multiple catch statements for throwing an exception.
  20. Write an applet program to draw a human face using graphics class.
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<b>AFC-7484</b>
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<b>1BIT5C1</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2015**

**Fifth Semester**

**Information Technology**

**DATABASE MANAGEMENT SYSTEMS**

**(CBCS – 2011 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. What is a relation?
2. How is the E-R data model useful?
3. What is Temporal Data?
4. What is Normalization?
5. What is a server?
6. Give two examples of Network Types.
7. What are entities?
8. What are indexes?
9. What is the purpose of a Package?
10. Expand PL/SQL.

**Part B**

(5 × 5 = 25)

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

11. (a) Give a short note on Object based and semi structured based databases.

Or

- (b) What is the purpose of Database Systems? Explain.

12. (a) Give a brief account on Functional dependency.

Or

- (b) Explain how to perform decomposition using Multivalued dependencies.

13. (a) Give a short note on Intraquery parallelism.

Or

- (b) Give a short note on Distributed transactions.

14. (a) Give a short note on Views.

Or

- (b) What are Synonyms? Explain.

15. (a) List and explain the different types of cursors with examples.

Or

- (b) Write a program to create a stored procedure to find the total of a column of a given table.

**Part C**

(3 × 10 = 30)

Answer any **three** questions.

16. Explain in detail about the Database Users and Architectures.
17. Give short notes on Funtional Dependencies and Multivalued Dependencies with suitable examples.

18. Explain in detail about Parallel databases.
  19. Elaborate on User Privileges and Roles.
  20. Give a detailed account on Packages in PL/SQL with an example.
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2015**

**Fifth Semester**

**Information Technology**

**VISUAL PROGRAMMING**

**(CBCS – 2011 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Section A**

(10 × 2 = 20)

Answer **all** questions.

1. What are variables?
2. What are loop statements?
3. Define Hiding and Controlling
4. What is a control?
5. What is a Dialog box?
6. What is an MDI?
7. What are the advantages of OLEDB?
8. What is a socket?
9. Expand MFC.
10. What is a bitmap?



**Section B**

(5 × 5 = 25)

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

11. (a) What are the difference between Subroutines and Functions?

Or

- (b) What are arguments? Explain on using optional arguments.

12. (a) Give a short note on how to capture keystrokes.

Or

- (b) How to manipulate menus at Runtime?

13. (a) Give a brief account of the Common Dialogs Control.

Or

- (b) Give short notes on Multiple File Selection.

14. (a) Elaborate on ADO.

Or

- (b) Explain about DAO.

15. (a) Give short notes on MFC fundamentals.

Or

- (b) Explain C Archive.

**Section C**

(3 × 10 = 30)

Answer any **three** questions.

16. List and explain the various control and loop statements
  17. Explain indexing with the Listbox and how to search a Sorted list?
  18. List and explain the Text Manipulation Properties.
  19. Elaborate in detail about ODBC.
  20. Explain in detail bitmaps loading in an application with a sample program.
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2015**

**Fifth Semester**

**Information Technology**

**Elective — XML AND WEB SERVICES**

**(CBCS – 2011 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Define web services.
2. What do you mean by web applications?
3. What is XML schema?
4. Write any two applications of XML.
5. What is actor in SOAP?
6. Write the SOAP message structure.
7. What is UDDI?
8. What are covers in UDDI?
9. Why do we need a web services conversation language?
10. Expand WSCL and WSDL.

**Part B**

(5 × 5 = 25)

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

11. (a) List out the importance of web services.

Or

- (b) Differentiate distributed computing environment and web services.

12. (a) How do you implement the XML schema types?

Or

- (b) Differentiate global and local type declarations in XML.

13. (a) Write short note on SOAP protocol.

Or

- (b) Describe on design patterns and faults in SOAP.

14. (a) Describe about UDDI.

Or

- (b) How do you accessing UDDI? Discuss it.

15. (a) Write the relationships between WSCL and WSDL.

Or

- (b) Explain WSDL interface components.

**Part C**

(3 × 10 = 30)

Answer any **three** questions.

16. Explain in detail about the web services and enterprises.
  17. Discuss the following :
    - (a) Inheriting namespaces
    - (b) Managing schemas.
  18. Describe about HTTP and RPC.
  19. Explain in detail the UDDI business registries.
  20. Discuss in detail the bar scenario conversations.
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<b>1BITE2A</b>
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**B.Sc. (IT) DEGREE EXAMINATION, NOVEMBER 2015**

**Fifth Semester**

**Information Technology**

**Elective : COMPUTER NETWORKS**

**(CBCS – 2011 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. What is meant by layer?
2. Write any two advantages of ISDN lines.
3. Mention the features of PPP.
4. List any two collision free protocols.
5. What do you mean by fragmentation?
6. Describe the cell format used in ATM networks.
7. What are the services supported by Transport layer?
8. Expand ICMP and RARP.
9. Specify the purpose of SNMP.
10. What do you mean by Cryptography?

**Part B****(5 × 5 = 25)**

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

11. (a) Compare broadband and narrowband ISDN in detail.

Or

- (b) Give a brief note on Network standardization.

12. (a) Briefly Explain the Finite State models.

Or

- (b) Explain the basic characteristics of ALOHA protocol.

13. (a) Explicate how tunnel process is implemented in Internetworking.

Or

- (b) What is Internet multicasting? Explain its concepts.

14. (a) List and explain the performance issues in Transport layer.

Or

- (b) How do you measure the network performance? Discuss.

15. (a) Explain the following:

- (i) DNS
- (ii) SNMP

Or

- (b) Discuss any two data compression standards.

**Part C**

(3 × 10 = 30)

Answer any **three** questions.

16. Explain the OSI reference model in detail.
  17. What are the elementary protocols used in data link layer? Discuss.
  18. Describe the functionalities of Firewall.
  19. Explicate any two Internet Transport Protocols.
  20. Give a brief account on Network Security.
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<b>1BITE2B</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2015**

**Fifth Semester**

**Information Technology**

***Elective* — COMPUTER GRAPHICS**

**(CBCS – 2011 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. How does an Interactive Graphics display work?
2. What are the good characteristics they are expected from computer generated lines?
3. What are Graphic primitives? Give two examples.
4. Define Transformation.
5. What is reflection?
6. Define Aspect Ratio?
7. What is point in the computer graphics system?
8. Define translation?
9. What is scaling?
10. What is JCL?

**Part B****(5 × 5 = 25)**

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

11. (a) What are the five important questions about interactive computer graphics? Explain.

Or

- (b) Explain the Simple DDA Algorithm to draw a straight line.

12. (a) What are the two aspects of transformation principles?

Or

- (b) Explain the concatenation of matrix representation.

13. (a) Discuss the viewing transformation.

Or

- (b) Explain the point clipping?

14. (a) Describe the transformation in modeling

Or

- (b) Explain the perspective transformation.

15. (a) Explain the user model.

Or

- (b) Write a note on the command language.

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

Answer any **three** questions.

16. Elicit the Line drawing Algorithm.
  17. Explain the Two Dimensional transformation with examples and the matrix representation.
  18. State and Explain the Sutherland Hodgeman Algorithm.
  19. Explain the 3D Transformation and Perspective.
  20. Discuss the styles of command language.
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<b>AFC-7489</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2015**

**Sixth Semester**

**Information Technology**

**SOFTWARE ENGINEERING**

**(CBCS – 2011 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. What is System Engineering?
2. What are the key challenges facing software engineering?
3. Define software requirement.
4. Differentiate top-down and bottom-up software cost estimation approaches.
5. What are the different types of Cohesion?
6. List the various elements of data design.
7. State the main use of automated testing tools.
8. Differentiate black box and white box testing.
9. Define software quality.
10. State the reasons to require software quality standards.

**Part B**

(5 × 5 = 25)

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

11. (a) Explain various size categories of software projects.

Or

- (b) Describe the software productivity factors.

12. (a) Write a short note on estimating software maintenance costs.

Or

- (b) Explain the types of requirements and their characteristics in detail.

13. (a) Illustrate architectural design with appropriate pictorial depictions.

Or

- (b) Elaborate any two structured coding techniques.

14. (a) What are the different types of system testing? Discuss them.

Or

- (b) Explicate software faults and failures in detail.

15. (a) Elucidate the roles of a software quality assurance group.

Or

- (b) What is Statistical Software Quality Assurance? Explain with suitable example.

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

Answer any **three** questions.

16. Briefly discuss the various activities of software project planning.
  17. Explain the need for formal technical review and the processes involved in conducting such reviews.
  18. Illustrate the fundamental concepts of software design.
  19. Brief the Software Configuration Management and its process.
  20. State the goals of software quality assurance. Discuss them.
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<b>AFC-7490</b>
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<b>Sub. Code</b>
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<b>1BIT6C2</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2015**

**Sixth Semester**

**Information Technology**

**MOBILE COMMUNICATION**

**(CBCS – 2011 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** the questions.

1. Define frequency.
2. Specify the advantages of spread spectrum.
3. What do you mean by hand off?
4. What are the components of UMTS?
5. Differentiate Infra red and radio transmission.
6. Expand LLC and PLCP.
7. What is the use of L2CAP?
8. Define Tunneling.
9. Mention the general purposes of a file system.
10. Write down any two applications of HTML.

**Part B****(5 × 5 = 25)**

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

11. (a) Describe the applications of mobile communication.

Or

- (b) Explain the following terms: Reflection and Refraction.

12. (a) Define the protocol architecture of DECT.

Or

- (b) Differentiate DAB and DVB.

13. (a) Elaborate the concepts of IEEE 802.11 Architecture.

Or

- (b) Write a short note on WATM services.

14. (a) Explain in detail about traditional TCP.

Or

- (b) Discuss the concepts of Snooping TCP.

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

Or

- (b) Describe the applications WWW.



**Part C**

(3 × 10 = 30)

Answer any **three** questions.

16. Discuss the various types of modulation techniques.
  17. With suitable block diagram explain the GSM system.
  18. What are the security services adopted in Bluetooth? Discuss.
  19. Elucidate the concepts of IP packet delivery in mobile IP.
  20. Design a web page for Hospital using HTML tags.
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**AFC-7491****Sub. Code****1BIT6C3****B.Sc. DEGREE EXAMINATION, NOVEMBER 2015****Sixth Semester****Information Technology****WEB DESIGN TECHNOLOGY****(CBCS – 2011 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A****(10 × 2 = 20)**Answer **all** questions.

1. What is HTML?
2. What is a Frame?
3. Define script.
4. What is an algorithm?
5. Define Function.
6. Define Arrays.
7. What is Dynamic HTML?
8. What is wave filter?
9. What is TDC?
10. Expand MIDI?

**Part B**

(5 × 5 = 25)

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

11. (a) Write a HTML code for Header elements?

Or

- (b) Create an HTML document that marks up your resume.

12. (a) Write a simple java script program to printing a line of text in a webpage.

Or

- (b) Write a short note on control structures in java script.

13. (a) Discusses the different types of Java script global function.

Or

- (b) Write a sample program to declaring and allocating array using java script.

14. (a) Write a short note on collections all and children in DHTML object model.

Or

- (b) Write a sample program triggering an onclick () event in DHTML.

15. (a) Write a program to sorting data in a table in DHTML.

Or

- (b) What are the properties are available in BGSOUND element?

**Part C**

(3 × 10 = 30)

Answer any **three** questions.

16. Write a code for nested list and unordered list using HTML.
  17. Explain the following structure:
    - (a) For structure
    - (b) Switch multiple selection structure.
  18. Elicit with example for properties of math object.
  19. Explain the following filters:
    - (a) Flipv and fliph
    - (b) Chroma Filter.
  20. Discusses the various types of mouse events and external source files.
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<b>1BITE3A</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2015**

**Sixth Semester**

**Information Technology**

***Elective* — DISTRIBUTED COMPUTING**

**(CBCS – 2011 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. What is Internet?
2. What is Ethernet?
3. Explain Remote Procedural Call.
4. What is a protocol?
5. What is thread?
6. What is cryptography?
7. Explain physical clocks.
8. What is a name service?
9. What is nested transaction?
10. What is replication?

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

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

11. (a) Explain the internet protocol

Or

- (b) Explain the architectural system model.

12. (a) Explain the procedure to invoke Remote Object

Or

- (b) Discuss the client server architecture.

13. (a) Explain the file service architecture.

Or

- (b) Discuss about the various security techniques

14. (a) Write a note on Multicast communication

Or

- (b) Explain the directory services.

15. (a) Explain Timestamp?

Or

- (b) Discuss atomic commit protocol.

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

Answer any **three** questions.

16. Discuss the different types of networking

17. Write a note on group communication.

18. Explain the operating system architecture.
  19. Explain clocks, events and process states.
  20. Discuss the distributed deadlocks.
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**AFC-7493****Sub. Code****1BITE3B****B.Sc. DEGREE EXAMINATION, NOVEMBER 2015****Sixth Semester****Information Technology****Elective – DIGITAL IMAGE PROCESSING****(CBCS – 2011 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. What is meant by digitizer?
2. What are the kinds of digital storage for image processing?
3. Define contrast stretching.
4. What is meant by histogram of a digital image?
5. What is Low-Pass Filtering?
6. What is meant by diagonalization of circulant matrices?
7. What is Thresholding?
8. State the two basic properties of intensity values used for Segmentation
9. What is eight directional chain code?
10. What is Non-Separable class ?



**Part B****(5 × 5 = 25)**

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

11. (a) What are the various elements of a digital image processing?

Or

- (b) List out the characteristics of film and explain.

12. (a) Explain the Fourier transformation.

Or

- (b) Explain the Hotelling transforms in detail.

13. (a) Give an account on Color image processing.

Or

- (b) Explain the Spatial transformation in detail.

14. (a) Briefly explain the image compression standards.

Or

- (b) Explain the region oriented segmentation in detail.

15. (a) Explain the texture based approach for regional descriptors.

Or

- (b) How do you apply boundary extraction? Explain it with an example.

**Part C** (3 × 10 = 30)

Answer any **three** questions.

16. Briefly explain the various elements of visual perception.
  17. Illustrate the Discrete Fourier Transforms.
  18. Elucidate the algebraic approach to Restoration.
  19. Explain the techniques used for edge detection.
  20. Explain any two representation scheme in detail.
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**AFC-7620****Sub. Code****1BITS A1/  
1BIT1A1****U.G. DEGREE EXAMINATION, NOVEMBER 2015****Information Technology****Allied – DISCRETE MATHEMATICS****(CBCS – 2011 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A****(10 × 2 = 20)**Answer **all** questions.

1. Define if statement with an example.
2. Mention any two compound statements.
3. What is meant by conjunctive normal form?
4. Define Quantifier. Give an example.
5. What is path?
6. Define degree.
7. What is graph with an example?
8. Draw the two different spanning trees.
9. Define Lattice.
10. What is Boolean algebra?

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

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

11. (a) Explain the following with suitable truth table.
- (i) Conjunction (2½)
- (ii) Disjunction (2½)

Or

- (b) Verify whether  $(P \vee Q) \rightarrow P$  is a tautology.
12. (a) What are the procedures to obtain a disjunctive normal form?

Or

- (b) Show that  $R \rightarrow S$  can be derived from the premises  $P \rightarrow (Q \rightarrow S)$ ,  $\neg R \vee P$  and  $Q$
13. (a) Explain Isomorphic graph and Non-Isomorphic graph with neat diagram.

Or

- (b) Prove that, A simple graph with  $n$  vertices and  $k$  components can have at most  $(n-k)(n-k+1)/2$  edges.
14. (a) Explicate Eulerian graph with suitable example.

Or

- (b) Elucidate Prim's algorithm with neat diagram.
15. (a) Explain special lattices with suitable examples.

Or

- (b) Write a note on Hasse diagram. Give an example with neat diagram.

**Part C** $(3 \times 10 = 30)$ Answer any **three** questions.

16. (a) Explain conditional and bi-conditional statements with truth tables. (5)
- (b) Construct the truth table of the formula:  
 $(\neg P \vee Q) \wedge (\neg Q \vee P)$  (5)
17. (a) Find a disjunctive normal form of  
 $(q \vee (p \wedge r)) \vee \neg((p \vee r) \wedge q)$  (5)
- (b) Verify the validity of the following argument: (5)  
 Lions are dangerous animals. There are lions.  
 Therefore there are dangerous animals.
18. Explain the following, with neat diagram.
- (a) Complete graph (5)
- (b) Bipartite graph (5)
19. Explain Kruskal's algorithm with suitable example.
20. Describe various properties in Boolean algebra.

<b>AFC-7621</b>
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<b>Sub. Code</b>
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<b>1BITSA2</b>
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**U.G. DEGREE EXAMINATION, NOVEMBER 2015**

**Information Technology**

**Allied – OPERATION RESEARCH**

**(CBCS – 2011 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. What is an operation research?
2. Mention any two disadvantages of a model.
3. Define optimal solution.
4. What are the two methods of artificial variable techniques?
5. Distinguish between dual and primal.
6. What is IPP?
7. Define cost matrix.
8. List out the methods of integer programming.
9. What do you mean by unbalanced transportation problem?
10. Define degenerate basic feasible solution.

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

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

11. (a) Explain main phases of operation research.

Or

- (b) Explicate various classifications of models.
12. (a) A firm produces three products. These products are processed on three different machines. The time required to manufacture one unit of each of the three products and the daily capacity of the three machines are given in the table below:

Machine	Time per unit (minutes)			Machine capacity (Minutes/Day)
	Product 1	Product 2	Product 3	
M1	2	3	2	440
M2	4	–	3	470
M3	2	5	–	430

It is required to determine the number of units to be manufactured for each product daily. The profit per unit for product 1, 2 and 3 is Rs. 4, Rs. 3 and Rs.6 respectively. It is assumed that all the amounts produced are consumed in the market. Formulate the mathematical model for the problem.

Or

- (b) Solve the following LPP by the graphical method.

$$\text{Max } Z = 3x_1 + 2x_2$$

$$\text{Subject to } -2x_1 + x_2 \leq 1$$

$$x_1 \leq 2$$

$$x_1 + x_2 \leq 3$$

$$\text{and } x_1, x_2 \geq 0$$

13. (a) Find the dual of the LPP.

$$\text{Min } F = 4x_1 + 6x_2 + 18x_3$$

$$\text{Subject to } x_1 + 3x_2 \geq 3$$

$$x_2 + 2x_3 \geq 5$$

$$\text{and } x_1, x_2, x_3 \geq 0$$

Or

- (b) Explain the working procedures of Gomory's cutting plane method.

14. (a) What are differences between transportation problem and the assignment problem?

Or

- (b) Explain travelling salesman problem.

15. (a) Write a note on Vogel's approximation method.

Or

- (b) Explain degeneracy in transportation problem.

**Part C**

(3 × 10 = 30)

Answer any **three** questions.

16. Explain various tools and techniques of operation research.

17. Solve the following LPP by simplex method.

$$\text{Maximize } Z = 3y_1 + 2y_2 + 5y_3$$

$$\text{Subject to } y_1 + 4y_2 \leq 420$$

$$3y_1 + 2y_3 \leq 460$$

$$y_1 + 2y_2 + y_3 \leq 430$$

$$\text{and } y_1, y_2, y_3 \geq 0$$



18. Use dual simplex method to solve the LPP.

Maximize  $W = -3x_1 - 2x_2$

Subject to  $x_1 + x_2 \geq 1$

$x_1 + 2x_2 \leq 7$

$x_1 + 2x_2 \geq 10$

$x_2 \leq 3$

and  $x_1, x_2 \geq 0$

19. The processing times in hours for the jobs when allocated to the different machines are indicated below. Assign the machines for the jobs so that the total processing time is minimum:

	Machine					
		M <sub>1</sub>	M <sub>2</sub>	M <sub>3</sub>	M <sub>4</sub>	M <sub>5</sub>
Jobs	J <sub>1</sub>	9	22	58	11	19
	J <sub>2</sub>	43	78	72	50	63
	J <sub>3</sub>	41	28	91	37	45
	J <sub>4</sub>	74	42	27	49	39
	J <sub>5</sub>	36	11	57	22	25

20. Solve the following transportation problem.

	A	B	C	a <sub>i</sub>
F <sub>1</sub>	10	9	8	8
F <sub>2</sub>	10	7	10	7
F <sub>3</sub>	11	9	7	9
F <sub>4</sub>	12	14	10	4
b <sub>j</sub>	10	10	8	

<b>AFC-7622</b>
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<b>Sub. Code</b>
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<b>1BITSA3</b>
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**U.G. DEGREE EXAMINATION, NOVEMBER 2015**

**Information Technology**

***Allied* — ACCOUNTING PRINCIPLES AND COMPUTER APPLICATIONS**

**(CBCS – 2011 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Section A**

(10 × 2 = 20)

Answer **all** questions.

Answer in One or Two sentences:

1. What is accounting? Write its main functions.
2. Write the difference between Final Accounts with Adjustment and without Adjustment.
3. List out the advantages of Trail Balance.
4. Capital + Liabilities = \_\_\_\_\_
5. What are the steps involved in Accounting Cycles?
6. Define “Balance Sheet”.
7. What is the difference between sales and sales return book?
8. List the different types of Subsidiary Books.
9. Define the term “Favourable Balances”.
10. What is called Bank Reconciliation Statement?

**Section B**

(5 × 5 = 25)

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

11. (a) From the following balances extracted from the books of a Trader at the close of the accounting year ending 31st December 2000, prepare Profit and Loss Account.

Trail Balance as on 31<sup>st</sup> December 2000

Particulars	Rs.	Particulars	Rs.
Gross Profit	1,53,000	Apprenticeship Premium	5,000
Salaries	46,500	Dividend Received	12,000
Rent (Office)	12,300	Interest Received	8,000
Fire Insurance Premium	2,700	Rent Received	5,000
Discount Allowed	1,500		
Carriage Outward	7,500		
Bad Debts	6,300		
Printing and Stationary	750		
Selling Expenses	21,500		
Rent, Rates and Taxes	1,050		
Loss by Fire (not covered by Insurance)	8,000		
Legal Charges	2,000		
Goodown Rent			
Depreciation on Office	12,700		

Equipment	5,500
Repairs and Maintenance	4,800
Bank Charges	1,200

Salaries due but not paid Rs. 2,500. Fire Insurance Premium has been in advance to the extent of Rs. 300. Rent, rates and Tax outstanding Rs. 150.

Or

(b) Explain the Accounting Concepts and Conventions.

12. (a) Difference between Journal and Ledger.

Or

(b) Journalise the following transactions and post them to the ledger accounts concerned:

1991

Jan. 1	Purchased goods for cash	2,000
Jan. 3	Sold goods to Karim	500
Jan. 10	Received from Karim	500
Jan. 15	Purchased machinery for cash	1,000
Jan. 20	Cash sales	300
Jan. 25	Sold goods to Rahim & Sons	600
Jan. 28	Received from Rahim & Sons	590
	Discount allowed	10
Jan. 30	Paid Rent	50
Jan. 31	Paid Salaries	100

13. (a) Prepare a petty cash book on the imprest system from the following:

2005		Rs.
March 1	Received	Rs. 1000
		for petty cash
March 2	Paid bus fare	10
March 3	Paid Cartage	25
March 4	Paid for postage and telegram	50
March 5	Paid for stationary	40
March 6	Paid for postage and telegram	50
March 7	Paid for sundry exp.	40

Or

- (b) Enter the following transactions in simple Cash Book.

2006		Rs.
Jan 1	Cash in hand	12000
Jan 5	Received from Ramesh	3000
Jan 7	Paid Rent	3000
Jan 8	Sold goods	7000
Jan 10	Paid Sohan	2000

14. (a) From the following balances extracted from the books of X & Co., prepare a trading and profit and loss account and balance sheet on 31st December, 1991.

	Rs.		Rs.
Stock on 1 <sup>st</sup> January	11,000	Returns outwards	500
Bills receivables	4,500	Trade expenses	200
Purchases	39,000	Office fixtures	1,000
Wages	2,800	Cash in hand	500
Insurance	700	Cash at bank	4,750
Sundry debtors	30,000	Tent and taxes	1,100
Carriage inwards	800	Carriage outwards	1,450
Commission (Dr.)	800	Sales	60,000
Interest on capital	700	Bills payable	3,000
Stationary	450	Creditors	19,650
Returns inwards	1,300	Capital	17,900

The stock on 21st December, 1991 was valued at \$25,000.

Or

- (b) From the following information of Johnson's Ltd. on 31st March, 2003 you are required to prepare the Trading, Profit and Loss A/c and Balance Sheet:

	Rs.		Rs.
Opening Stock	5,000	Capital	89,500
Bills Receivable	22,500	Commission (Cr.)	2,000
Purchases	1,95,000	Return Outward	2,500
Wages	14,000	Trade Expenses	1,000
Insurance	5,500	Office Fixtures	5,000
Sundry Debtors	1,50,000	Cash in Hand	2,500
Carriage Inward	4,000	Cash at Bank	23,750
Commission (Dr.)	4,000	Rent & Rates	5,500
Interest on Capital	3,500	Carriage Outward	7,250
Stationery	2,250	Sales	2,50,000
Return Inward	6,500	Bills Payable	15,000
Creditors	98,250		
Closing Stock	12,500		

15. (a) Explain the causes for the differences in two balances.

Or

- (b) From the following particulars of M/s Ananaya Industries, prepare bank reconciliation statement as on December 31, 2006.

- (i) Bank balance as per cash book Rs.32,500  
(ii) Cheques deposited into bank but not credited upto December 31, 2006 Rs.8,900.

- (iii) Cheques issued but not presented for payment  
Rs. 12,500.
- (iv) Bank credited Rs.5,000 for receiving dividend  
through Electronic Clearing System.
- (v) Bank charges debited by Bank Rs.400.

**Section C**

(3 × 10 = 30)

Answer any **three** questions.

16. Mr. Ramu has the following transactions in the month of July. Record them into the journal and show postings in the ledger and balance the accounts.

July 1st: Ramu started business with a capital of  
Rs. 75,000

1st: Purchased goods from Manu on credit Rs. 25,000

2nd: Sold goods to Sonu Rs.20,000

3rd: Purchased goods from Meenu for cash Rs. 15,000

4th: Sold goods to Tanu for cash Rs. 16,000

5th: Goods returned to Manu Rs. 2,000

6th: Bought furniture for Rs. 15,000

7th: Bought goods from Zenu Rs. 12,000

8th: Cash paid to Manu Rs. 10,000

9th: Sold goods to Jane Rs. 13,500

10th: Goods returned from Sonu Rs. 3,000

11th: Cash received from Jane Rs. 5,500

12th: Goods taken by Ramu for domestic use Rs. 3,000

13th: Returned Goods to Zenu Rs. 1,000

14th: Cash received from Sonu Rs. 12,000

15th: Bought machinery for Rs. 18,000

16th: Sold part of the furniture for Rs. 1,000

17th: Cash paid for the purchase of bicycle for Ramu's son  
Rs. 1,500

19th: Cash sales Rs. 15,000

20th: Cash purchases Rs.13,500

17. A Government Organization receives Grant in Aid amounting to Rs. 10,00,000 on 1.4.2007. Against this grant the organization spends the following amount during the period ended on 31.03.2008.

Sl. No.	Date	Particulars	Amount (In Rs.)
1.	01.04.2007	Opened Bank Account by depositing Cheque of Grant in Aid	10,00,000
2.	05.04.2007	Withdrawn Cash	60,000
3.	06.04.2007	Purchase of Table & Chairs From Indian Store	1,05,000
4.	06.04.2007	Purchase of Computer From M/s Excel Enterprises	1,50,000
5.	10.04.2007	Cash Purchases of 2 Ceiling Fan	8,000
6.	10.05.2007	Travelling Advance to A	5,000
7.	11.06.2007	Printing Expenses	2,000
8.	12.06.2007	A submit the claim for expenses of	2,000
9.	15.07.2007	Medical Advance to B by Cheque	10,000
10.	24.07.2007	A submit the claim for expenses of	1,000
11.	30.07.2007	Salaries paid by bank	15,000
12.	15.08.2007	A submit the claim for expenses of	1,000
13.	25.08.2007	B, Submitted the Medical Expenses and Balance Amount returned to office	5,000



14.	30.08.2007	Salary paid by bank	15,000
15.	30.09.2007	Salary Paid by Bank	15,000
16.	12.10.2007	Loan Given to C by cheque	12,000
17.	30.10.2007	Salary paid by bank	15,000
18.	1.11.2007	A submit the claim for expenses of	1,000
19.	05.12.2007	Further Advance to A	10,000
20.	25.12.2007	Cash Withdrawn	15,000
21.	30.12.2007	Salary paid by Cash	15,000
22.	15.01.2008	Loan Received from C	12,000
23.	25.01.2008	Printing Expenses	5,000
24.	30.01.2008	Salary paid by bank	15,000
25.	15.02.2008	Salary paid by bank	13,500
	15.02.2008	Salary accrued but not yet paid to D	1,500
26.	15.02.2008	Miscellaneous Expenses	12,000
27.	17.02.2008	Salary Paid to 'D' in Cash	1,500
28.	27.02.2008	Salary paid by Bank	15,000
29.	5.03 .2008	Printing Expenses	3,000
30.	11.03.2008	Telephone Expenses By Cheque	15,000
31.	15.03.2008	Advance to Mr. Verma (Employee)	8,000
32.	31.03.2008	Payment to Indian Stores by Cheque	50,000
33.	31.03.2008	Payment to M/s Excel Enterprises	72,500

Prepare Trial Balance, Income and Expenditure Account and Balance Sheet as on 31.03.2008.

18. Rakesh commenced business on 1-1-05 with Rs. 15,000 cash. Prepare two column cash book taking into consideration the following:

2005 Jan

3	Paid cash to Suresh	Rs. 800
	Allowed discount	Rs. 10
5.	Received from Mohan	Rs.900
	Allowed him discount	Rs. 15
7.	purchased goods for cash	Rs.6,000
10.	Sold goods for cash	Rs.4,000
12.	purchased goods for cash	Rs.3,000
15.	Sold goods for cash	Rs.2,000
17.	Amount of Rs. 600 was payable to Suresh which has been paid after deducting 2% discount.	
20.	Goods purchased for cash	Rs. 4,410
25.	Deposited in bank	Rs. 500
28.	Received from Dinesh	Rs. 2,000
	Allowed him discount	Rs. 30
29.	Paid Rs. 340 to Mahesh in full settlement of his account of	Rs. 400
29.	Withdrew for personal use	Rs. 150
30.	purchased goods for cash	Rs. 9,600
31.	purchased goods from Dinesh for cash	Rs. 588
31.	Sold goods to Mohan for cash	Rs. 2,850

19. From the following Trial Balance of Gurdeep Singh as at 31<sup>st</sup> December, 2007, prepare Trading and Profit and Loss Account and Balance Sheet:

Dr. Balances	Rs.	Cr. Balances	Rs.
Opening Stock	15,500	Capital	60,000
Land and Building	35,000	Loan from Mrs. Gurdeep Singh @ 9%	30,000
Machinery	50,000		9,600
Furniture & Fixtures	5,000 1,06,000	Sundry Creditors	2,100
Purchases	11,000	Purchase Returns	2,07,300
Salaries	2,500	Sales	1,200
General Expenses	3,000	Discount	
Rent	1,400		
Postage and Telegrams	1,300 26,000		
Stationery	2,800		
Wages	4,000		
Freight on Purchases	4,500 30,000		
Carriage on Sales	600		

Repairs	100	
Sundry Debtors	6,400	
Bad Debts	5,100	
Cash in Hand		
Cash at Bank		
Sales Returns		
	<u>3,10,200</u>	<u>3,10,200</u>

The following further information was given:

- (a) Wages for December, 2007 amounting to Rs. 2,100 have not yet been paid.
- (b) Included in General Expenses is Insurance Premium Rs. 600, paid for the year ending 31<sup>st</sup> March, 2008.
- (c) A provision for doubtful debts @5% on debtors is necessary.
- (d) Depreciation is to be charged as follows:  
Land and Building 2%, Machinery 10% and Furniture and Fixtures 15%.
- (e) The loan from Mrs. Gurdeep Singh was taken on 1st July, 2007. Interest has not been paid yet.
- (f) The value of stock on hand on 31<sup>st</sup> December, 2007 was Rs. 14,900.

20. (a) From the following particulars, prepare Bank Reconciliation statement as on December 31, 2006.

- (i) Balance as per Cash Book Rs.4,200
- (ii) Cheques issued but not presented for payment Rs.2,000
- (iii) Cheques deposited but not collected Rs.3,000
- (iv) Bank charges debited by the bank Rs.250.

(b) From the following particulars of Neha and Co. prepare Bank Reconciliation Statement on March 3, 2006

	Rs.
Overdraft as per pass book	16,500
Interest on overdraft	1,600
Insurance premium paid by the bank	800
Cheques deposited but not yet credited	5,500
Cheques issued but not present for payment	6,000
Wrongly credit to firm account by the bank	1,000

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**AFC-7623****Sub. Code****1BITS4****U.G. DEGREE EXAMINATION, NOVEMBER 2015****Information Technology****Allied – E-COMMERCE****(CBCS – 2011 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. What are the personal communication services?
2. Write the expansion for I-way and its uses.
3. Specify the use of Biometric systems.
4. What are the risks involved in the operation of the payment systems?
5. Mention the purpose of EDI envelops.
6. What is the role of EDI coordinator in EDI implementation?
7. Why does commercial advertising on Internet needed?
8. Define E-commercc catalogs.
9. What is meant by Edutainment?
10. State the two types of software agents.

**Part B**

(5 × 5 = 25)

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

11. (a) Describe the consumer information access devices.

Or

- (b) Elaborate the concepts of Supply Chain Management.

12. (a) Explain the role of firewalls in network security.

Or

- (b) Write down the problems occurred in designing the Electronic Payment Systems.

13. (a) Briefly describe the layered architecture of EDI.

Or

- (b) Explicate the role of EDI in an International Trade.

14. (a) State the two types of push-based advertising? Discuss.

Or

- (b) What are the processes described by an information filtering system? Explain.

15. (a) Differentiate on-line education and virtual class rooms.

Or

- (b) Explain any four categories of digital copyright wording in on-line databases.

**Part C**

(3 × 10 = 30)

Answer any **three** questions.

16. Explain any two of E-commerce organization applications in detail.
17. Briefly describe the different electronic payment schemes.
18. How does EDI work? Explain its processes.
19. Discuss the various process of Interactive Marking on the Internet.
20. Elucidate the components of education on-demand.

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<b>AFC-7480</b>
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<b>Sub. Code</b>
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<b>1BIT1C1</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2015**

**First Semester**

**Information Technology**

**PRINCIPLES OF INFORMATION TECHNOLOGY**

**(CBCS – 2011 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** the questions.

1. Define Digital signal.
2. Write any two Ethics of Information Technology.
3. List the advantages of Internet.
4. Define Groupware.
5. What is Intranet?
6. Specify the uses of Cable modems.
7. What do you mean by Workgroup computing?
8. What is Database?
9. Give any two examples for visual programming languages.
10. Mention the uses of Internet programming.

**Part B****(5 × 5 = 25)**

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

11. (a) Explain the six elements of Computer and Communication System.

Or

- (b) Describe the revolution of Communication Technology.

12. (a) Write a note on Intellectual Property Rights in IT.

Or

- (b) Explicate the functions of Internet Web Browsers.

13. (a) List out the practical uses of Communications.

Or

- (b) How to share the resources? Explain its procedures.

14. (a) What is Database Management System? Discuss the concepts of DBMS.

Or

- (b) Describe the various types of database organization.

15. (a) What is MIS? Elaborate its features.

Or

- (b) Illustrate the different phases of SAD.

**Part C**

(3 × 10 = 30)

Answer any **three** questions.

16. Explain the various applications of Computer and Communication Technology.
  17. Discuss the following: (a) Database Software (b) User Interface
  18. Write a brief note on Tele-computing and Virtual offices.
  19. Describe the functions of Hard Disks and Optical Disks in detail.
  20. Explain the five steps used in programming languages.
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