D–5054	Sub. Code
	31311

DISTANCE EDUCATION

M.Sc.(IT) DEGREE EXAMINATION, DEC 2020.

First Semester

COMPUTER ORGANIZATION AND ARCHITECTURE

(CBCS 2018–19 Academic Year onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. Define gates.

2. What is Flip-flop?

3. What is Decoder?

4. What is multiplexer?

5. Convert the number $(2)_{10}$ to octal number and then to binary.

6. Define bus.

7. Define circular shift.

8. What do you mean by 9's complement? Give example.

9. What is cache memory?

10. Define hit ratio.

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions.

11. (a) Draw the logic diagram of Half-Adder circuit and explain.

Or

(b) Describe the working principle of D-Flip flop with circuit diagram.

12. (a) Write short notes on different types of complements with examples.

Or

(b) Explain how the floating-point representations are carried out.

13. (a) Explain about instruction codes.

Or

(b) What are memory reference instructions? Explain.

14. (a) Describe the strobe control method of asynchronous data transfer.

Or

(b) Briefly explain about input-output interface.

15. (a) Write short notes on auxiliary memories.

Or

(b) Discuss shortly about memory hierarchy.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain the K-map method of simplification steps in detail.

17. Explain the arithmetic micro operations in detail.

18. Discuss about stack organization in detail.

19. Explain the various data transfer and manipulation technique.

20. Explain the concept of memory mapping.

———————

D–5055	Sub. Code
	31312

DISTANCE EDUCATION

M.Sc.(Information Technology) DEGREE EXAMINATION,
DEC 2020.

First Semester

OBJECT ORIENTED PROGRAMMING AND JAVA

(CBCS 2018–19 Academic Year onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. Point out the features of java.

2. What are the data types in java?

3. What is meant by constructors?

4. State about wrapper classes.

5. Define the functions of threads.

6. What is synchronization?

7. Define the significance of control loops.

8. Point out significance of bar charts.

9. Mention the role of byte stream class.

10. What is meant by interactive I/O?

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions choosing either (a) or (b)

11. (a) What are java tokens? Explain.

Or

(b) Discuss about precedence of arithmetic operators in java.

12. (a) What do you mean by method overloading? Explain.

Or

(b) Write short notes on interfaces.

13. (a) Explain the life cycle of threads in java.

Or

(b) Describe stopping and blocking of a thread.

14. (a) Explain the procedure for drawing polygons.

Or

(b) Elucidate about passing parameters to applets.

15. (a) Write notes on byte stream class.

Or

(b) Discuss the random access files in Java.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Illustrate about the branching and decision making statements.

17. Elucidate about multiple inheritance.

18. What are exceptions? How exceptions are handled in Java? Discuss.

19. Write a java program to print the reverse of a given string using recursion.

20. What are the I/O classes in java? Explain.

———————

D–5056

Sub. Code
31313

DISTANCE EDUCATION

M.Sc.(Information Technology) DEGREE EXAMINATION,
DEC 2020.

First Semester

DATA STRUCTURES AND ALGORITHMS

(CBCS 2018–19 Academic Year onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. Define data structure.

2. State the difference between array and linked list.

3. What are common operations that can be performed on a data structure?

4. Convert the following expression into postfix notation. A * (B + C) / D.

5. What is stack and where it can be used?

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

7. What is time and space complexity of searching algorithms?

8. Define hashing.

9. What is the average and worst case complexity of bubble sort?

10. What is radix sort?

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions choosing either (a) or (b)

11. (a) Write a short note on : Time complexity of algorithms.

Or

(b) Discuss about asymptotic notations.

12. (a) What is recursion? Explain recursive algorithm for finding a factorial of given number.

Or

(b) Write an algorithm to insert and delete a node in singly linked list.

13. (a) Briefly explain about binary tree in-order traversal with suitable example.

Or

(b) Write a short note on Hashing techniques.

14. (a) Briefly explain linear search algorithm with example.

Or

(b) How searching differs from sorting of elements? Explain. Give example.

15. (a) Write insertion soft algorithm. Explain it with the following example numbers.

Or

(b) Briefly explain about tree sort with example.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. How will you represent multi-dimensional arrays? Explain with example. What are its operations?

17. What is Queue? Why it is known as FIFO? Write an algorithm to insert and delete an element from a queue.

18. Write an algorithm to create, insert and deleting Binary tree and explain with neat diagram.

19. What is searching? Write an algorithm to explain binary search technique with example.

20. Write an algorithm to explain quick sort technique with the following data.

–5, 10, 25, 12, 47, 8

———————

D–5057	Sub. Code
	31321

DISTANCE EDUCATION

M.Sc.(Information Technology) DEGREE EXAMINATION,
DEC 2020.

Second Semester

DATA MINING AND WAREHOUSING

(CBCS 2018–19 Academic Year onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. State the significance of data warehousing.

2. Expand the terms OLTP and OLAP.

3. What is association rule mining?

4. Define Bayesian classification.

5. Mention the role of K-means algorithm.

6. State about ROCK algorithm.

7. What is meant by text clustering?

8. Define temporal mining.

9. How does big data differ from traditional data?

10. Write down the features of Hadoop.

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions.

11. (a) Describe the different forms of knowledge.

Or

(b) What is data visualization? Illustrate.

12. (a) Explain the logic of pincher search algorithm.

Or

(b) Describe the decision tree classification method.

13. (a) Write notes on K-mediod algorithm.

Or

(b) What is machine learning? Explain briefly different types of learning methods.

14. (a) Illustrate the role of web content mining.

Or

(b) Explain about knowledge mining.

15. (a) Discuss about characteristics of big data.

Or

(b) What are the components of Hadoop? Explain.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain various data mining techniques.

17. Discuss in detail about apriori algorithm.

18. What are the categorical clustering algorithms? Explain any one.

19. Explain the importance of various data mining software tools.

20. Describe about physical architecture of Hadoop.

———————

D–5058	Sub. Code
	31322

DISTANCE EDUCATION

M.Sc. (Information Technology) DEGREE EXAMINATION, DEC 2020.

Second Semester

RELATIONAL DATABASE MANAGEMENT SYSTEMS (RDBMS)

(CBCS 2018–19 Academic Year onwards)

Time : Three hours Maximum : 75marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is RDBMS?

2. Define data independence.

3. Write the TRC query form.

4. What is key constraint?

5. Define functional dependency.

6. List out the five types of aggregate operators.

7. What do you mean by atomicity?

8. What are the two types of errors in transaction failure?

9. Define the term data entry.

10. What are the features of ISAM?

PART B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Explain different types data base users.

Or

(b) What is E-R diagram? Describe the additional features of E-R diagram.

12. (a) What is relational database query? Explain with suitable example.

Or

(b) Discuss the set operations available in relational algebra.

13. (a) Explain the problems related to decomposition.

Or

(b) Write short notes on normalization.

14. (a) Explain the role of timestamp-ordering protocol.

Or

(b) Discuss about log-record buffering.

15. (a) What are the different file organizations? Compare.

Or

(b) Discuss about primary and secondary indexes.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Describe the purpose of the query processor.

17. Explain the following :

(a) Domain relational calculus

(b) Expressive power of algebra and calculus.

18. Explain about dependency-preserving decomposition.

19. Illustrate the architecture of remote backup system.

20. How the performance are tuned in the storage? Discuss about B+ trees.

———————

D–5059	Sub. Code
	31323

DISTANCE EDUCATION

M.Sc.(Information Technology) DEGREE EXAMINATION, DEC 2020.

Second Semester

VISUAL PROGRAMMING WITH .NET

(CBCS 2018–19 Academic Year onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define solution explorer.

2. What is the meaning of "Context Sensitive"?

3. What is an Enum?

4. Define Snippets.

5. What are events?

6. What is the purpose of generics?

7. How break points are used?

8. What do you mean by "Run to Cursor" step operation?

9. What is Grid layout?

10. Define Stack Panel layout.

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions.

11. (a) Describe about docking windows.

Or

(b) What are windows projects? Discuss.

12. (a) What are primitive data types? Discuss any five C# and VB data types and their description.

Or

(b) What are loop statements? Explain and write their syntax.

13. (a) How do you declare a double dimensional array in VB with suitable program?

Or

(b) Discuss about solution explorer.

14. (a) Discuss any five step operations and their meaning.

Or

(b) Describe the features of call stack window.

15. (a) What are the different ways to connect to a data source in visual studio? Discuss any one suitable example.

Or

(b) Discuss any four ComboBox properties for data binding and their explanation.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain about visual studio – 2000 IDE and its features.

17. Describe declaring and using fields in C# with suitable program.

18. Explain briefly about the managing compilation settings in C#.

19. What is procedure? How procedures are added in the visual studio with suitable program?

20. How do you design a Silverlight applications with suitable program? Explain.

———————

D–5060	Sub. Code
	31331

DISTANCE EDUCATION

M.Sc.(Information Technology) DEGREE EXAMINATION,
DEC 2020.

Third Semester

OPEN SOURCE SOFTWARE

(CBCS 2018–19 Academic Year onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. What is the role of operating system?

2. Define the term “Process”.

3. What is a database?

4. Write the syntax of SELECT command of SQL and give an example.

5. What is the personal home page?

6. What are the three types of comments in PHP?

7. How do you define a function in Python?

8. Write down the features of Python.

9. How can a Perl variable act as a string and a number?

10. What is a subroutine?

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) What are the advantages of open source? Explain.

Or

(b) Explain the different signals defined in Linux.

12. (a) Describe the data types supported by MySQL.

Or

(b) Explain how to add and edit records in MYSQL.

13. (a) Describe the "while" and "for" statements of PHP with examples.

Or

(b) Write the procedure steps for sending E-Mail with Pre Hyper Processing.

14. (a) What is a tuple and how is it created in Python?

Or

(b) Write a Python program to check if the input year is a leap year or not.

15. (a) What are the data types of Perl? Explain.

Or

(b) What are the three types of loops supported in Perl? Explain with examples.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. What is scheduling? Explain about the different scheduling policies.

17. How PHP fits with MYSQL? Describe.

18. What are the data types supported by PHP? Explain.

19. What are the different methods used in deleting elements from dictionary in python? Explain.

20. Explain the functions of any two simple Perl modules.

———————

D–5061	Sub. Code
	31332

DISTANCE EDUCATION

M.Sc.(IT) DEGREE EXAMINATION, DEC 2020.

Third Semester

OPERATING SYSTEMS

(CBCS 2018–19 Academic Year onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. What are the components of a computer system?

2. What is critical – section problem?

3. Define system calls.

4. When does a process terminate?

5. What do you mean by CPU utilization?

6. Define Deadlock prevention.

7. What is the purpose of PTLR?

8. List out the partitions of the memory.

9. What do you mean by collisions?

10. Why do we need indexed allocation?

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions.

11. (a) What are the services provided by the operating system?

Or

(b) Write down the categories of system programs.

12. (a) Give short notes on schedulers.

Or

(b) Describe the concept of message – passing system.

13. (a) Explain the dining – philosophers problem with its structure.

Or

(b) How can you prevent the occurrence of a deadlock? Explain.

14. (a) Explain swapping of two processes with neat diagram.

Or

(b) Describe why we can use inverted page table.

15. (a) Write short note on file-system mounting.

Or

(b) Explain indexed allocation of disk space.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Summarizes the types of system calls.

17. Discuss about multiple – processor scheduling.

18. Explain the concept of Banker's algorithm.

19. Describe the advantages of segmentation.

20. What do you mean by protection? Explain why we need protection.

———————

D–5062

Sub. Code
31333

DISTANCE EDUCATION

M.Sc.(IT) DEGREE EXAMINATION, DEC 2020.

Third Semester

COMPUTER NETWORKS

(CBCS 2018–19 Academic Year onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is the relationship of services to protocols?

2. Write the technology of fiber optics.

3. Define CSMA.

4. Differentiate character stuffing and bit stuffing.

5. What are the general principles of congestion control?

6. What is multicast routing?

7. What is the purpose of TCP?

8. Write the four components of SNMP model.

9. What are the two fundamental cryptographic principles?

10. What is known as cryptanalysis?

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Discuss briefly about the categories of network.

Or

(b) Write a short note on topology.

12. (a) What is cyclic redundancy check? Discuss.

Or

(b) Explain about sliding window protocols.

13. (a) Discuss briefly about flow-based routing.

Or

(b) Write notes on the following :

(i) Circuit switching

(ii) Packet switching.

14. (a) Differentiate connection oriented and connectionless services.

Or

(b) Give a brief note on DNS.

15. (a) Write about digital signatures.

Or

(b) Explain in brief about encryption model.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Describe in detail about various transmission media.

17. Write a detailed note on multiple access protocols.

18. Explain about congestion control algorithms.

19. Discuss in detail about the elements of transport protocols.

20. Give a detailed note on RSA.

———————

D–6485

Sub. Code
31341

DISTANCE EDUCATION

M.Sc. (Information Technology) DEGREE EXAMINATION, DECEMBER 2020.

Fourth Semester

WEB TECHNOLOGY

(CBCS – 2018-19 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. State the issues in Javascript.

2. What is meant by Document Type Definition (DTD)?

3. Write any two benefits of Java Beans.

4. What is BDK?

5. Write the uses of Tomcat web server.

6. What is meant by packages?

7. State the problem with servlet.

8. What is suntime error in JSP?

9. What is meant by database?

10. List out the properties in Java Beans.

SECTION B — (5 × 5 = 25 marks)

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

11. (a) Write short notes on list with suitable code.

Or

(b) Write briefly about XML schemas.

12. (a) Write a simple code to set the properties of Java Beans.

Or

(b) What is introspection in Java Beans. Explain.

13. (a) Explain life cycle of servlet.

Or

(b) Discuss the security issues in the servlet.

14. (a) How do you install the Java Software Development Kit? Explain the steps.

Or

(b) Write a sample code to pass the data between pages.

15. (a) Write a simple Java Bean to display a plain text.

Or

(b) Give a short notes on struts framework.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain in detail about arrays in Javascript with suitable examples.

17. Discuss Java Bean API in detail.

18. Write a program using cookies.

19. Give a detailed outline of Java Server Pages.

20. Write a program to store and retrieve a data from a database using JSP.

———————

D–6486	Sub. Code
	31342

DISTANCE EDUCATION

M.Sc. DEGREE EXAMINATION, DECEMBER 2020.

Fourth Semester

Information Technology

SOFTWARE ENGINEERING

(CBCS 2018-2019 Academic year onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is RAD model?

2. What does 'inception phase' of the unified process.

3. Who is stake holder in software development?

4. Define requirement analysis.

5. State the goal of design engineering.

6. What is Refactoring?

7. What is unit test?

8. Why do we need to test a software before implementation?

9. What are the two general Characteristics of software Risks?

10. What is RMMM?

PART B — (5 × 5 = 25 marks)

Answer ALL questions. Choosing either (a) or (b).

11. (a) Describe process patterns.

Or

(b) Explain the spiral model.

12. (a) Write notes on quality function deployment.

Or

(b) What are the analysis rules of thumb? Explain.

13. (a) Write the 'FURPS' quality attributes.

Or

(b) Explain modularity in Design Engineering.

14. (a) Explain about Integration testing.

Or

(b) What are the test strategies for object oriented software?

15. (a) How to identify software Risk? Explain.

Or

(b) Write notes in ISO 9000 quality standards.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions

16. Explain about specialized process models.

17. Discuss in detail about Data modeling concepts.

18. Elucidate the art of debugging.

19. Explain the framework for product metrices.

20. Discuss about quality concepts.

———————

D–6487	Sub. Code
	31343

DISTANCE EDUCATION

M.Sc. (Information Technology) DEGREE EXAMINATION, DECEMBER 2020.

Fourth Semester

CLOUD COMPUTING

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL the questions.

1. Mention any two benefits of cloud computing.

2. Define cloud service.

3. What is web-based email service?

4. What is web-based calendar?

5. What is the site Famundo offers?

6. What is Presdo?

7. What do you mean by privacy in cloud?

8. Define storage.

9. What is cloud platform?

10. Write any two advantages of Nimbus.

PART B — (5 × 5 = 25 marks)

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

11. (a) Compare client/server, peer-peer and distributed computings.

Or

(b) Discuss about cloud computing today.

12. (a) Write notes on centralizing email communications.

Or

(b) Discuss briefly collaborating on house hold budgets.

13. (a) Explain about Jiffle and Presdo.

Or

(b) Explain CRM and its applications.

14. (a) How encrypted federation differs from trusted federation? Discuss.

Or

(b) What are the cloud security challenges? Explain.

15. (a) Where open source software used? Discuss.

Or

(b) Give examples of cloud tool kits and explain.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. How users connect to the cloud? Explain with an example.

17. Write notes on

(a) Collaborating on grocery lists. (5)

(b) Collaborating on To-do lists. (5)

18. Explain various online calendar applications.

19. Write short note on protecting and controlling federated communication.

20. Explain about open source cloud platforms.

———————