D–6892

Sub. Code
31311

DISTANCE EDUCATION

M.Sc. (IT) DEGREE EXAMINATION.

MAY 2021 EXAMINATION

&

MAY 2020 ARREAR EXAMINATION

First Semester

Information Technology

COMPUTER ORGANIZATION AND ARCHITECTURE

(CBCS 2018-19 Academic Year onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Draw the symbol for NAND gate and obtain its truth table.

2. What is combination circuit?

3. What is the equivalent BCD number for $(6)_{10}$?

4. What is Gray Code?

5. Define Opcode.

6. What do you meant by an Interrupt?

7. What is partial remainder?

8. Define direct memory access.

9. Define virtual memory.

10. What is mapping process?

PART B — (5 × 5 = 25 marks)

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

11. (a) State and Prove DeMorgan's Theorem.

Or

(b) With a neat diagram describe the working principles of multiplexer.

12. (a) Write short notes on number systems with examples.

Or

(b) Briefly explain the fixed-point representation.

13. (a) What is interrupt cycle? Explain.

Or

(b) Explain the concept of Timing and Control.

14. (a) What do you mean by priority-interrupt? Describe.

Or

(b) Explain the different modes of transfer in Input-Output Organization.

15. (a) With a neat diagram explain the function of RAM chip.

Or

(b) Describe the direct mapping of cache memory.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Reduce the following function by Karnaugh map and represent the reduced function in sum of products and product of sum forms. $F = \pi(0, 3, 7, 8, 9, 12, 13)$.

17. Explain the full concept of Fixed-point representation in detail.

18. What is memory reference instruction? Explain all of them.

19. Explain the parallel priority interrupt scheme.

20. Describe the match logic of an associative memory in detail.

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DISTANCE EDUCATION

M.Sc. (IT) DEGREE EXAMINATION.

MAY 2021 EXAMINATION

&

MAY 2020 ARREAR EXAMINATION

First Semester

Information Technology

OBJECT ORIENTED PROGRAMMING AND JAVA

(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 role of Java development kit?

2. Is platform independence is the magic of java? Justify.

3. Define: Abstract class.

4. Compare overloading and overriding in java.

5. What is the default package in java?

6. When will you define interface?

7. Mention the use of '*synchronize*' keyword.

8. List any two built-in exceptions in java.

9. State the use of data streams? List the names of data stream classes.

10. Name any two keyboard events.

PART B — (5 × 5 = 25 marks)

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

11. (a) Briefly explain about type casting? Give example.

Or

(b) Write a java program to illustrate parameterized constructors.

12. (a) Distinguish between *compile time* and *run-time* polymorphism.

Or

(b) Elucidate two uses of 'super' keyword with suitable example.

13. (a) Briefly explain about Graphics class and its methods with example.

Or

(b) Explain the visibility access specifiers in java.

14. (a) Sketch a neat diagram of thread life cycle and explain.

Or

(b) Write a java program to define a user defined function that check the marks, if the marks are exceed 40 then raise the exception "greater than 40".

15. (a) How will you create a text file in java? Give example.

Or

(b) Write an applet program to draw and display human face.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Discuss in detail about object oriented programming concepts.

17. How will you create and access package? Explain with simple java program.

18. Explain in detail about multiple catch clause with example.

19. Write a java program to demonstrate various keyboard events with suitable functionality.

20. Write short note on:

(a) Random Access files

(b) Byte stream classes.

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DISTANCE EDUCATION

M.Sc. DEGREE EXAMINATION.

MAY 2021 EXAMINATION

&

MAY 2020 ARREAR EXAMINATION

First Semester

Information Technology

DATA STRUCTURES AND ALGORITHMS

(CBCS 2018-19 Academic Year onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is data structure?

2. Write the limitations of an array.

3. Write the applications of stack.

4. What are the advantages of using a linked list rather than array?

5. Draw the binary tree for the following expression.

   (a*b + c) – d* e)

6. Define complete binary tree.

7. What is the time complexity of linear search?

8. How does binary search differ from linear search?

9. What is radix sort?

10. When can we use insertion sort?

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) What is an algorithm? How to analyse an algorithm? Explain with example.

Or

(b) How address of an element is calculated in a two dimensional array?

12. (a) Write the algorithm to insert and delete an element from a queue.

Or

(b) Explain the procedure for converting infix expression to postfix expression and implement on the given expression A * B – (C + D) + E.

13. (a) What is binary search tree? Explain the efficiency of binary search tree search operation.

Or

(b) What is hashing? Explain any one hashing technique.

14. (a) What is linear search? Explain its advantages.

Or

(b) Describe the efficiency of binary search algorithm.

15. (a) Explain the bubble sort algorithm with example.

Or

(b) What is tree sort? Explain its time and space complexity.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. How arrays are represented in memory? Explain with example.

17. What are the operations performed on a singly linked list? Explain.

18. Explain various representations of binary tree with suitable example.

19. Explain the binary search algorithm with suitable example.

20. Explain quick sort algorithm in detail and implement it to sort the following numbers.

42, 12, –8, 98, 67, 83, 08, 104, 07

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DISTANCE EDUCATION

M.Sc.(IT) DEGREE EXAMINATION.

MAY 2021 EXAMINATION

&

MAY 2020 ARREAR EXAMINATION

Second Semester

Information Technology

DATA MINING AND WAREHOUSING

(CBCS 2018-19 Academic Year onwards)

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is a data warehouse?

2. Mention the aim of data visualization?

3. Define support and confidence in Association rule mining.

4. What is classification? Write its process steps.

5. Define Supervised learning.

6. What is an activation function? Explain.

7. Name the tools for web structure mining.

8. What are the Data preparation activities for text mining?

9. What is big data? Give Example.

10. Write the purpose of sqoop component in Hadoop.

SECTION B — (5 × 5 = 25 marks)

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

11. (a) Explain snow flake data warehouse schema with example.

Or

(b) Explain briefly various data transformation strategies.

12. (a) What is FP-Growth? Explain the FP-Growth algorithm.

Or

(b) Write short notes on classification by back propagation.

13. (a) What are the accuracy measures used to evaluate clustering process?

Or

(b) Explain different operators used in Genetic Algorithm.

14. (a) What are the spatial data mining tasks? Explain.

Or

(b) What is web crawler? Explain it role in web mining.

15. (a) Compare different forms of Big Data with example.

Or

(b) Explain the Characteristics of Hadoop Distributed File System.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. What are the major tasks in data preprocessing? Explain.

17. Discuss Apriori Algorithm with a suitable example and explain how its efficiency can be improved.

18. How does DBSCAN clustering method work? Explain with example.

19. Explain any two content mining techniques.

20. Describe the core components of Hadoop Ecosystem.

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DISTANCE EDUCATION

M.Sc.(IT) DEGREE EXAMINATION.

MAY 2021 EXAMINATION

&

MAY 2020 ARREAR EXAMINATION

Second Semester

Information Technology

RELATIONAL DATABASE MANAGEMENT SYSTEMS
(RDBMS)

(CBCS 2018-19 Academic Year onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define conceptual schema.

2. What is physical schema?

3. Define foreign key constrain.

4. Draw the student entity set with attributes regno, name and sex.

5. What are null values?

6. List out the aggregate operators.

7. Define durability in transactions

8. What is the two–face locking protocol?

9. Define index data structure.

10. Define the term "PAGE"

PART B — (5 × 5 = 25 marks)

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

11. (a) What is transaction management? Describe.

Or

(b) Write short notes on query processor.

12. (a) What is view? How the table is altered and deleted with suitable examples.

Or

(b) What is join operation? How condition join and equijoin are used in relational algebra? Explain with suitable example.

13. (a) Discuss about lossless–join decomposition.

Or

(b) Write short notes on third normal form.

14. (a) What is isolation? Discuss with suitable example.

Or

(b) Explain the features of validation–based protocols.

15. (a) What are primary and secondary indexes? Discuss.

Or

(b) Write short notes on Heap files.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain the key conscience, participation conscience and weak entities with suitable examples.

17. What is domain relational calculus? Explain the expressive power of algebra and calculus.

18. Explain about boyce–codd normal form.

19. Explain about the failure with loss of non volatile storage.

20. Explain the following terms:

(a) ISAM

(b) B+ TREE INDEX

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DISTANCE EDUCATION

M.Sc. (IT) DEGREE EXAMINATION.

MAY 2021 EXAMINATION

&

MAY 2020 ARREAR EXAMINATION

Second Semester

Information Technology

VISUAL PROGRAMMING WITH .NET

(CBCS 2018-19 Academic Year onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL the questions.

1. What is automatic generated code in visual studio?

2. What do you mean by rapid coding experience in visual studio?

3. What is the main method?

4. Write the c# console application skeleton code?

5. Define an event.

6. Write the interface snippet of c# and vb.

7. How breakpoint is created in visual studio?

8. What are the advantages of application state?

9. What is the use of WPF?

10. List out the different layout controls of WPF.

PART B — (5 × 5 = 25 marks)

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

11. (a) Define the term "context-sensitive" and how toolbox and status bar is used in visual studio.

Or

(b) Describe about the expanding and collapsing windows.

12. (a) Write any ten primitive data types of vb and c# and the descriptions.

Or

(b) What are Enums? How they are created in c# with suitable code?

13. (a) How deligates are used in c# with suitable program?

Or

(b) How arrays are created and used in vb with suitable program?

14. (a) What is watch window? How it is used in visual studio?

Or

(b) Write short notes on server explorer.

15. (a) Discuss the features of grid layout.

Or

(b) Write short notes coding event handlers.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain the different types of projects in visual studio.

17. How class, inheritance and methods are created in vb with suitable program?

18. What is project properties window? Explain all the common tabs and the features.

19. Explain the following terms:

(a) Working with intellitrace.

(b) File STEP operations.

20. Explain briefly about working with data in WPF.

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DISTANCE EDUCATION

M.Sc. (IT) DEGREE EXAMINATION.

MAY 2021 EXAMINATION

&

MAY 2020 ARREAR EXAMINATION

Third Semester

Information Technology

OPEN SOURCE SOFTWARE

(CBCS 2018-19 Academic Year onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is Open Source?
2. Define Cloning.
3. How you create and delete a database in MYSQL?
4. List any four String Methods in MYSQL.
5. How you create and use array in PHP?
6. What is Template in PHP?
7. Write about objects in Phython.
8. Define Errors and Exception.
9. How you create a subroutine in perl?
10. Explain packages in perl.

PART B — (5 × 5 = 25 marks)

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

11. (a) Write a short on applications of Open Source.

Or

(b) Describe Scheduling in Linux.

12. (a) Discuss about Record Selection Technology.

Or

(b) How you debug and Handle errors in PHP?

13. (a) Discuss about branching Statement in PHP.

Or

(b) How will you handle files in PHP? Explain.

14. (a) Explain Strings in Python.

Or

(b) Discuss about Dictionaries in Python.

15. (a) Explain Subroutines in Perl.

Or

(b) How will you work with files in perl? Illustrate.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Disuses cloning and signaling in Linux.

17. Narrate the concepts of Sequences in Mysql.

18. How do you create PHP connectivity with SQL database?

19. Elucidate functions with suitable example in python.

20. Explain Control structures with an example in perl.

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D–7069

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DISTANCE EDUCATION

M.Sc. (IT) DEGREE EXAMINATION.

MAY 2021 EXAMINATION

&

MAY 2020 ARREAR EXAMINATION

Third Semester

Information Technology

OPERATING SYSTEMS

(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 role of an Operating System?

2. Define System Call.

3. Differentiate Job Queue and ready Queue.

4. Write about Dispatcher.

5. Explain about Wait ( ) and Signal ( ).

6. What is Resource Allocation Graph?

7. Distinguish between Logical address and Physical address.

8. Define First fit, Best fit and Worst fit.

9. List any four file attributes.

10. What is Hash Table?

PART B — (5 × 5 = 25 marks)

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

11. (a) Write a note on Operating System Structure.

Or

(b) Explain the purpose of Caching.

12. (a) Write a short note on Schedulers.

Or

(b) Write about Round Robin Scheduling.

13. (a) Explain the concepts of Semaphores.

Or

(b) What are the methods for handling Deadlock? Explain any one.

14. (a) Write a short note on Fragmentation.

Or

(b) How swapping works in Memory?

15. (a) What are the permissible File Operations? Explain.

Or

(b) Compare Sequential access and Direct access.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain in detail about Operating System Operations.

17. Explain FCFS and Shortest Job First Scheduling.

18. Elucidate the features of The Readers-Writers Problem.

19. Discuss in detail about Paging Memory Management Scheme.

20. Narrate the concepts of Directory Structure in File system.

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DISTANCE EDUCATION

M.Sc. (INFORMATION TECHNOLOGY)
DEGREE EXAMINATION.
MAY 2021 EXAMINATION
&
MAY 2020 ARREAR EXAMINATION
Third Semester
COMPUTER NETWORKS
(CBCS 2018-19 Academic Year onwards)

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL the questions.

1. State the goals of Computer Networks.

2. Define Guided Transmission Media.

3. What do you understand by Flow control?

4. What is the significance of Go-Back-n ARQ Protocol?

5. Define Virtual Circuits.

6. Mention about Dynamic Routing.

7. Define the role of Presentation Layer.

8. Differentiate connection oriented and connectionless services.

9. What is Cryptography?

10. What is Message Authentication?

SECTION B — (5 × 5 = 25 marks)

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

11. (a) Discuss about the categories of computer networks.

Or

(b) Write note on Topology of network.

12. (a) Explain the significance of Framing in Data Link Layer.

Or

(b) Describe the sliding window protocol.

13. (a) What is Datagram subnet? Explain.

Or

(b) Elucidate about link state routing.

14. (a) Differentiate TCP and UDP.

Or

(b) What are error detection methods? Explain.

15. (a) Explain any one Substitution Cipher Technique with example.

Or

(b) Describe about AES algorithm.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Elucidate about OSI Network model with suitable diagrams.

17. What is ALOHA? Explain its role and significance in Computer Networks.

18. Write notes on Shortest Path Routing.

19. Elucidate about the organization and functioning on DNS.

20. Illustrate in detail about RSA algorithm.

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D–7335

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DISTANCE EDUCATION

M.Sc. (Information Technology) DEGREE EXAMINATION.

MAY 2021 EXAMINATION

&

MAY 2020 ARREAR EXAMINATION

Fourth Semester

WEB TECHNOLOGY

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL the questions.

1. State the role of Keyhole Markup Language. (KML)

2. What is document type definition?

3. List the implications of java beans bound property.

4. Define persistence in java beans.

5. What is meant by JSDK?

6. Differentiate cookies and session variables.

7. Mention the importance of Model-View-Controller pattern.

8. What are implicit objects in JSP?

9. What is mean by database?

10. State the use of Concatenation Function in Python.

SECTION B — (5 × 5 = 25 marks)

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

11. (a) Discuss about applications of XML.

Or

(b) Design a HTML form for railway reservation system using suitable background design and text color.

12. (a) Elucidate about the directory structure of a typical web server.

Or

(b) Write notes on advantages of java beans.

13. (a) Describe about methods of Servlet interface.

Or

(b) Illustrate about Client Server Script Execution with example.

14. (a) Discuss about directory stucture of a typical web server.

Or

(b) Write a Java script that scrolls a text message in the status bar of the browser window.

15. (a) Explain about creating, installing and running a JSP page.

Or

(b) Discuss the need for client side scripting.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Write a JAVA client and server side Socket program to exchange the messages between them.

17. Illustrate about introspection feature of java beans with suitable examples.

18. Explain about limitations of Ajax and security issues.

19. Discuss about JDK technology.

20. Explain about functions of javax.sql package.

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DISTANCE EDUCATION

M.Sc. (IT) DEGREE EXAMINATION

MAY 2021 EXAMINATION

&

MAY 2020 ARREAR EXAMINATION

Fourth Semester

Information Technology

SOFTWARE ENGINEERING

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL the questions.

1. What are the characteristics of software?

2. State the limitations of waterfall model.

3. What are functional requirements?

4. What is data modeling?

5. List the elements of design model.

6. Write down the three golden rules for interface design.

7. Distinguish between verification and validation.

8. What are the factors used to assess the quality of the requirements?

9. Define Project Risk.

10. What is software reliability?

SECTION B — (5 × 5 = 25 marks)

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

11. (a) What are the five generic process framework activities?

Or

(b) Explain various types of process patterns.

12. (a) What are the elements of class based model for requirement analysis? Explain.

Or

(b) How requirements are gathered? Explain briefly.

13. (a) Describe the importance of data abstraction in software design process.

Or

(b) Explain the steps in user interface design.

14. (a) Write short notes on white box testing.

Or

(b) What are function based metrics? Explain.

15. (a) List the guidelines for formal technical reviews.

Or

(b) What are factors influencing quality of software? Explain.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain the spiral model and its advantages and disadvantages.

17. What are the activities involved in requirements engineering process? Explain.

18. Discuss the fundamental software design concepts in detail.

19. What is block box testing? Explain any one block box testing method.

20. What are the risk management activities? Explain.

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DISTANCE EDUCATION

M.Sc. (INFORMATION TECHNOLOGY) DEGREE EXAMINATION

MAY 2021 EXAMINATION

&

MAY 2020 ARREAR EXAMINATION

Fourth Semester

Information Technology

CLOUD COMPUTING

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL the questions.

1. What is Cloud Computing?

2. Give any two advantages of cloud services.

3. What is collaborating on To-Do lists?

4. Define virtual community in cloud.

5. Write short notes on Google calendar.

6. What is schedule book?

7. What is XMPP? Explain.

8. Define map reduce.

9. Write short notes on OpenNebula.

10. Define Virtual Private Cloud.

SECTION B — (5 × 5 = 25 marks)

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

11. (a) Explain briefly about Peer-to-Peer computing.

Or

(b) Briefly explain the benefits of cloud computing.

12. (a) Write short notes on communicating across the community.

Or

(b) Discuss about the collaboration on contact list.

13. (a) How to explore online calendar applications? Explain.

Or

(b) What is collaboration on even management? Discuss.

14. (a) Explain any two levels of federation.

Or

(b) Write about cloud and SaaS identity management.

15. (a) Give short notes on virtual appliances.

Or

(b) Describe open stack architecture.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. What are the Pros and Cons of cloud computing? Explain.

17. Discuss in detail about the collaborating on group projects and events.

18. Exemplify the collaborating on word processing and databases.

19. With a neat diagram, explain the Aneka architecture and its components.

20. Explain in detail about OpenNebula architecture.

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