

B.Sc. DEGREE EXAMINATION, NOVEMBER 2010

First Semester

Computer Science

PROGRAMMING IN C AND DATA STRUCTURES

(CBCS—2008 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

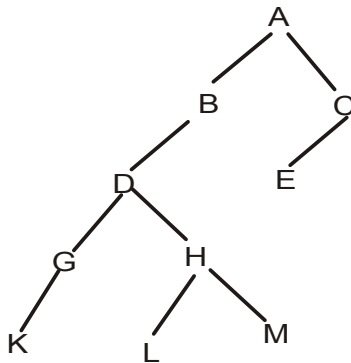
Answer **all** questions.

1. What is constant ? Mention its types.
2. What is the purpose of Break Statement ?
3. How one dimensional arrays are declared ?
4. Can addresses of memory locations be stored ? If so, where ?
5. What are the uses of structure data type ?
6. What are the different modes of files ?

7. Convert the infix expression into reverse Polish notation.

$$A + (B * C - (D / E \uparrow F) * G) * H.$$

8. Write the advantages of linked list.
9. What is the maximum number of nodes on a binary tree of level i ?
10. Give the outcome of preorder traversal of a binary tree.



Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Explain the switch statement with an example.

(Or)

- (b) Describe the bit-wise operators available in C.

12. (a) What is character array ? How will you initialize a character array ?

(Or)

- (b) Differentiate between static and dynamic memory allocation.

13. (a) Explain a self-referential structure.

(Or)

- (b) How can you open and close a file ?

14. (a) Describe the basic operations performed on queue.

(Or)

(b) Write an algorithm to insert a node at the front of the linked list.

15. (a) Explain the linked representation of a binary tree.

(Or)

(b) Write an algorithm for post order traversal.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Describe the different storage classes available in C.

17. Write a program in C to find the product of two matrices.

18. Write a program in C to copy the content of one file to another.

19. What is stack ? Describe the operations performed on stack. Also write the algorithm for the same.

20. Describe the applications of trees.

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B.Sc. DEGREE EXAMINATION, NOVEMBER 2010

Second Semester

Computer Science

PROGRAMMING IN C++ AND ALGORITHMS

(CBCS—2008 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Section - A

(10 × 2 = 20)

Answer **all** questions.

1. What is the class ?
2. How do you define constant pointer ?
3. What is dynamic constructor ?
4. What are general format of copy constructor ?
5. What is private member inheritance ?
6. What are the rules for virtual function ?

7. Define : Depth–First–Search algorithm.
8. What is meant by selection sorting ?
9. What is coin changing problem ?
10. What is the longest–common–subsequence problem ?

Section - B

(5 × 5 = 25)

Answer **all** questions.

11. (a) How can you define member functions ?
Explain it.

(Or)

- (b) Discuss the memory management operators.

12. (a) What is destructor ? Explain it with an example.

(Or)

(b) What is the role of copy constructors ? Give a program for it.

13. (a) Write a program to overload “*” operator to perform scalar multiplication of a vector using friend function.

(Or)

(b) Explain with example, the virtual functions.

14. (a) Explain the binary search.

(Or)

(b) Describe the quicksort knapsack algorithm.

15. (a) Explain the continuous knapsack algorithm.

(Or)

(b) Discuss the Floyal and Warshall algorithm.

Section - C (3 × 10 = 30)

Answer any **three** questions.

16. Briefly describe the control structures available in C++.

17. Write a C++ program to implement constructor concept for student details.

18. Explain the operator overloading with an example.

19. What is backtracking algorithm ? Write a C++ program for the same algorithm.

20. Write Dijkstra's algorithm and implement it using C++.

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B.Sc. DEGREE EXAMINATION, NOVEMBER 2010

Third Semester

Computer Science

DATABASE MANAGEMENT SYSTEM

(CBCS—2008 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Section - A

(10 × 2 = 20)

Answer **all** questions.

1. Define Database.
2. Name any two entities and its attributes in a Banking system.
3. What is meant by functional dependency ?
4. List any two features for designing relational database.

5. How the networks are classified ?
6. When a database is Interquery parallelism ?
7. Define Schema.
8. What is meant by an object ?
9. Define Trigger.
10. Give the function of a Cursor.

Section - B

(5 × 5 = 25)

Answer **all** the questions.

11. (a) Mention the purpose of having database system.

(Or)

(b) List the design issues related with E-R diagram.

12. (a) With an example, discuss on First Normal Form.

(Or)

(b) Explain the concept of multi valued dependencies.

13. (a) List the characteristics of parallel systems.

(Or)

(b) How homogeneous database differs from heterogeneous database ?

14. (a) Explain the concept of data integrity.

(Or)

(b) Give the purpose of Indexing.

15. (a) With an example, show how queries are answered in SQL.

(Or)

- (b) Discuss on any five built-in functions in SQL

Section - C (3 × 10 = 30)

Answer any **three** questions.

16. Explain the functions of Database Administrator.
17. How redundancy can be controlled through Normalisation ?
18. Describe the architecture of Client Server System.
19. How to create and maintain the tables ?
20. List the salient features of PL/SQL.

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B.Sc. DEGREE EXAMINATION, NOVEMBER 2010

Fourth Semester

Computer Science

JAVA PROGRAMMING

(CBCS—2008 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part - A

(10 × 2 = 20)

Answer **all** questions.

1. What are command line arguments ?
2. What is scope of a variable ?
3. When do we declare a member of a class static ?
4. Write the general form of the entry-controlled loop.
5. How is a method defined ?

6. What is an interface ?
7. How do we design a package ?
8. What is an exception ?
9. What is a local applet ?
10. When do we use get font () method ?

Part - B

(5 × 5 = 25)

Answer **all** the questions.

11. (a) Describe in detail the steps involved in implementing a stand-alone program.

(Or)

- (b) What is initialization ? Why is it important ?

12. (a) Give short note on special operators.

(Or)

(b) Write a program to find the number of and sum of all integers greater than 10 and less than 100 that are divisible by 5.

13. (a) What is a constructor ? How do we invoke a constructor ?

(Or)

(b) What is an array ? Why are arrays easier to use compared to a bunch of related variables?

14. (a) What is a package ? How do we add a class or an interface to a package ?

(Or)

(b) What is a finally block ? When and how is it used ? Give examples.

15. (a) What is an applet ? Why do applet classes need to be declared as public ?

(Or)

- (b) Describe the three ways of drawing polygons.

Part - C

(3 × 10 = 30)

Answer any **three** questions.

16. (a) What is World Wide Web ? What is the contribution of Java to the World Wide Web ?
- (b) What is Hypertext Markup Language ? Explain.
17. Explain briefly about the FOR statement and write the features of it.

18. (a) Write a program which will read a text and count all occurrences of a particular word.
- (b) What is a vector ? How is it different from an array ?
19. Describe the complete life cycle of a thread.
20. Describe the various sections of a Web page.

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B.Sc. DEGREE EXAMINATION, NOVEMBER 2010

Fifth Semester

Computer Science

OPERATING SYSTEMS

(CBCS—2008 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part - A

(10 × 2 = 20)

Answer **all** questions.

1. What is meant by 'Batch processing' ?
2. Define a Process.
3. What is meant by fixed partition memory management ?
4. Explain a Cache memory.
5. What is a deadlock ?

6. Explain 'Unsafe State'.
7. What is meant by a logical record ?
8. What is the purpose of device drivers ?
9. Explain the use of 'Newgrp' command in UNIX.
10. How does the process is identified in UNIX environment ?

Part - B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Illustrate the history of operating system briefly.

(Or)

- (b) Explain virtual memory with an example.

12. (a) Explain High-Level Scheduling.

(Or)

(b) What are the conditions for deadlock ?

13. (a) Explain the term 'process termination'.

(Or)

(b) Write short notes on Direct Access Storage Devices.

14. (a) Explain single level directory system.

(Or)

(b) Discuss in detail about contiguous and linked allocation.

15. (a) Explain about UNIX schedules.

(Or)

(b) Discuss the importance of pipelines in UNIX with example.

Part - C

(3 × 10 = 30)

Answer any **three** questions.

16. Explain how operating system is viewed as a system software.

17. Discuss First-come, First-serve scheduling algorithm in detail with your non example.

18. Explain how to prevent a deadlock.

19. Illustrate the File Accessing methods in detail.

20. Explain in detail, how security is maintained in UNIX systems.

B.Sc. DEGREE EXAMINATION, NOVEMBER 2010

Fifth Semester

Computer Science

**COMPUTER SYSTEM ARCHITECTURE
AND DESIGN**

(CBCS—2008 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part - A

(10 × 2 = 20)

Answer **all** questions.

1. What are the possible ways available to represent the negative number ?
2. Draw the graphic symbol for three-state buffer.
3. What is program interrupt ?
4. What is pseudoinstruction ? Give an example.
5. State the purpose of SP register.

6. What are the three types of CPU organization ?
7. Draw the flowchart for adding and subtracting numbers in signed -2's complement representation.
8. What is memory mapped I/O ?
9. State the purpose of bootstrap loader.
10. Define Memory space.

Part - B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Describe the data types supported by the system.

(Or)

- (b) Demonstrate the direct and indirect address.

12. (a) Describe the input-output configuration.

(Or)

(b) Write the rules for assembly language program.

13. (a) Describe the arithmetic instructions available in a computer.

(Or)

(b) Describe the characteristics of RISC processor.

14. (a) Draw the flowchart for multiply operation and explain.

(Or)

(b) Explain the working principle of I/O interface.

15. (a) Why we need secondary memory ?

(Or)

(b) Describe the characteristics of multiprocessor.

Part - C

(3 × 10 = 30)

Answer any **three** questions.

16. Construct a bus system using multiplexer and explain.

17. List out the memory reference instructions and explain them.

18. Describe the register stack organization and explain how the stack is useful to evaluate the arithmetic expression.

19. Explain how the CPU and IOP communicated each other.

20. Explain the organization of associative memory.

B.Sc. DEGREE EXAMINATION, NOVEMBER 2010

Fifth Semester

Computer Science

**Elective - DATA MINING AND DATA
WAREHOUSING**

(CBCS—2008 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part - A

(10 × 2 = 20)

Answer **all** questions.

1. Define Datawarehouse.
2. What is the use of Query Manager ?
3. List out the important managers.
4. Write the formula to calculate the minimum number of CPUs required for daily processing.

5. What is KDD ?
6. List out the visualization techniques.
7. What is Data model ?
8. Define Genetic algorithm.
9. What is the use of Association rule ?
10. Define Correlation rule.

Part - B

(5 × 5 = 25)

Answer **all** questions.

11. (a) How to clean and transform the data ?

(Or)

(b) Discuss about Query Manager.

12. (a) Describe the functions of load manager.

(Or)

(b) Explain Adhoc Query.

13. (a) Discuss about Datamining issues.

(Or)

(b) Explain the steps to be followed in KDD process.

14. (a) Explain Decision support system.

(Or)

(b) Explain point estimation with example

15. (a) Discuss about large itemset algorithm.

(Or)

(b) Discuss about Incremental rules.

Part - C

(3 × 10 = 30)

Answer any **three** questions.

16. Explain the architecture of load manager.

17. Explain the functional Dataware house manager.

18. Explain basic datamining tasks with an example.
19. Explain fuzzy sets and fussy logic.
20. Discuss Apriori Gen Algorithm with example.

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B.Sc. DEGREE EXAMINATION, NOVEMBER 2010

Fifth Semester

Computer Science

Elective – DIGITAL IMAGE PROCESSING

(CBCS—2008 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part - A

(10 × 2 = 20)

Answer **all** questions.

1. What is meant by sampling and quantization ?
2. Define Image interpolation.
3. State the general form of Log Transformation.
4. What is meant by histogram of a digital image ?
5. Define a 2-D ideal high pass filter.

6. What is meant by diagonalization of circulant matrices ?

7. Define Data compression.

8. State the two basic properties of intensity values used for segmentation.

9. Define Chain code representation.

10. Name the pattern arrangements used in practice for pattern recognition.

Part - B

(5 × 5 = 25)

Answer **either** (a) **or** (b) of the following.

11. (a) Discuss briefly about the components of an image processing system.

(Or)

- (b) Explain spatial and intensity resolution with illustrations.

12. (a) Explain Fast Fourier Transform in detail.

(Or)

- (b) Explain hotelling transform in detail.

13. (a) Write short notes on color image processing.

(Or)

- (b) Explain least square restoration in detail.

14. (a) Discuss briefly about the element of information theory.

(Or)

- (b) Explain the use of motion in segmentation.

15. (a) Explain texture based approach for region description.

(Or)

- (b) Explain recognition techniques based on matching.

Part - C

(3 × 10 = 30)

Answer any **three** questions.

16. Discuss in detail about the fundamental steps in image processing.

17. Explain at least five properties of two dimensional Fourier Transform.
18. Explain briefly about the algebraic approach to restoration.
19. Explain region oriented segmentation in detail.
20. Explain any two representation scheme in detail.

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B.Sc. DEGREE EXAMINATION, NOVEMBER 2010

Fifth Semester

Computer Science

Elective – WEB DESIGN TECHNOLOGY

(CBCS—2008 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part - A

(10 × 2 = 20)

Answer **all** the questions.

1. What are the header tags available in html ?
2. Write the syntax and give the example for unordered list.
3. What is called sequential execution ?
4. Differentiate break and continue statement in Java Script.

5. Write the format of a function definition in Java Script.

6. Write the Javascript code to calculate and display the square root of 900.0.

7. What is the simplest way to reference an element in DHTML ?

8. How can you create an image mask in DHTML ?

9. What is TDC (Tabular Data Control) ?

10. What is the use of BGSOUND element ?

Part - B

(5 × 5 = 25)

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

11. (a) Explain working with Images in html with coding.

(Or)

- (b) How can you display ordered list in html. Give an example.

12. (a) Write notes on “if” selection structure in Java Script.

(Or)

- (b) Explain “for” repetition structure with an example in Java Script.

13. (a) What do you mean by duration of Identifiers in Java Script ? Discuss

(Or)

(b) How do you declare and allocate arrays in Java Script ? Explain

14. (a) Give an example for dynamic positioning and explain, in DHTML.

(Or)

(b) Does “Glowning Text” exists, in DHTML ? If so, how can you make it ? Explain.

15. (a) What is the use of scaling ? Give an example.

(Or)

(b) Explain the use of EMBED element with an example.

Part - C

(3 × 10 = 30)

Answer any **three** questions out of five.

16. How can you display a table with suitable text information in html ? Explain with an example.

17. Explain assignment, increment and decrement operators in Java Script., with suitable examples.

18. What is Recursion ? How can you use recursive function in Java Script. ? Explain with an example.

19. How do you apply Dynamic styles in Dynamic HTML ? Explain with an example program.

20. Discuss Mouse Events in DHTML with an example illustration.

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B.Sc. DEGREE EXAMINATION, NOVEMBER 2010

Fifth Semester

Computer Science

Elective – ADVANCED JAVA PROGRAMMING

(CBCS—2008 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part - A

(10 × 2 = 20)

Answer **all** the questions.

1. Write the constructor in Byte Array output stream class.
2. Write about file name filter interface.
3. What is Event handling ? Write about Event classes.
4. Define a Adapter class.

5. Write about get state () and getlabel () method in check box control.
6. Write a constructor of Text Field class.
7. Write about get All By Name () method in InetAddress class.
8. What is a socket ?
9. What is JavaBean and JDK ?
10. What is Introspection ?

Part - B

(5 × 5 = 25)

Answer **all** the questions.

11. (a) Discuss on File object with its constructor.

(Or)

(b) Discuss on File Reader and File Writer class.

12. (a) Discuss on Action Event class and its methods.

(Or)

(b) Write about Comb Box class and constructors.

13. (a) Discuss on Flow Layout Manager.

(Or)

(b) How do you add menu item to menu ?

14. (a) Write about URL connections.

(Or)

(b) Differentiate TCP/IP and Datagram protocol.

15. (a) Write about Bean Info class.

(Or)

(b) Discuss on Http Servlet Request Interface.

Part - C

(3 × 10 = 30)

Answer any **three** questions.

16. Discuss on RMI classes and Interfaces.

17. Discuss on Mouse events and its handling methods with coding.

18. (a) Briefly explain Grid Layout Manager.
- (b) Discuss on File dialog Box control.
19. Discuss in detail a Datagram classes and methods.
20. Discuss with sample coding a Http Get Request and Http Post request methods.

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