Paper I — FUNDAMENTALS OF COMPUTERS

(For those who joined in July 1999 and after)

Time : Three hours Maximum : 100 marks

PART A — ($20 \times 2 = 40$ marks)

Answer ALL questions.

1. Name any four components of a digital computer.

2. Mention the role of a flow chart.

3. What are programming languages?

4. What are the advantages of mainframe computers?

5. What is meant by multitasking?

6. Define the term data.

7. What is meant by floating point representation?

8. Mention any four advantages of binary system.

9. Convert the decimal number 20 into octal.

10. What are high level languages?

11. Why do we need input device?

12. Mention different types of memory systems.

13. Specify the components of CPU.

14. What is meant by memory addressing?

15. Specify the role of operating system.

16. Mention the advantages of batch processing.

17. Specify four advantages of windows operating system.

18. What is meant by process management.

19. What are the benefits of networking?

20. Define the term topology.

PART B — (5 × 12 = 60 marks)

Answer ALL questions.

All questions carry equal marks.

21. (a) Explain the working of a digital computer with a neat diagram.

Or

(b) Discuss different types of computers.

22. (a) Explain the representation of characters and integers.

Or

(b) Explain the features of programming languages.

23. (a) Explain the structure of memory in detail.

Or

(b) Explain the method of program execution.

24. (a) Discuss the services of operating systems.

Or

(b) Explain the classification of operating system.

25. (a) Explain the characteristics of communication media.

Or

(b) Explain the features of Windows 95.

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Paper II — COBOL AND DATA PROCESSING

(For those who joined in July 1999 and after)

Time : Three hours Maximum : 100 marks

PART A — (20 × 2 = 40 marks)

Answer ALL questions.

1. What are COBOL words?

2. Define : Figurative constant.

3. List the names of Paragraphs in Identification division.

4. What are level numbers?

5. What is the use of VALUE Clause?

6. List the names of sections in Data Division.

7. What is the use of FD Entry?

8. Write the use of MOVE Verb.

9. What is the use of level no. 88?

10. Write a note on : JUSTIFIED clause.

11. What are Elementary Data Items?

12. Write a note on : ROUNDED option.

13. Write about the sign condition.

14. What is the function of ALTER statement?

15. List down Relational operators in COBOL.

16. Write the general syntax of SEARCH statement.

17. Define : File.

18. What is the purpose of FILE CONTROL paragraph?

19. How to open a sequential file in COBOL?

20. Write the general syntax of SORT statement.

PART B — ($5 \times 12 = 60$ marks)

Answer ALL questions.

21. (a) Explain about COBOL coding format with examples.

Or

(b) Describe in detail, different types of literals in COBOL with examples.

22. (a) Explain about the uses of different PIC clause characters with suitable examples.

Or

(b) Write a COBOL program to find the largest number among three given numbers.

23. (a) Distinguish between Redefines and Renames clauses.

Or

(b) Explain the following with examples :

(i) ON SIZE ERROR Clause

(ii) MULTIPLY statement.

24. (a) Describe the general syntax of various PERFORM statements with examples.

Or

(b) Explain about different types of conditions in COBOL with examples.

25. (a) Write a COBOL program to illustrate the use of SORT statement in File Handling.

Or

(b) Explain about file control entries for sequential files with suitable examples.

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25. (a) Explain about Functional Testing.

Or

(b) What are the capabilities of Testing tool? Discuss briefly.

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Paper III — SOFTWARE ENGINEERING

(For those who joined in July 1999 and after)

Time : Three hours Maximum : 100 marks

PART A — (20 × 2 = 40 marks)

Answer ALL questions.

1. Define Software Engineering.

2. What is SRS?

3. What is the purpose of Detailed Design?

4. Define Validation.

5. List the major factors that influences software cost.

6. Define Prototype.

7. Write a note on Chief Programmar Teams.

8. What is meant by Configuration Management?

9. Define Data Flow Diagrams.

10. What are Modular Systems?

11. What are structured charts?

12. Define Coupling.

13. What are Decision Tables?

14. What are single Entry, single Exit Constructs?

15. Define Static Analysis.

16. What are Walkthroughs?

17. Define Unit Testing.

18. What is meant by Top-down design?

19. Define Debugging.

20. Define Structure Test.

PART B — (5 × 12 = 60 marks)

Answer ALL questions.

21. (a) Explain about different phases in Software Development.

Or

(b) Explain the format of a Software requirements specification.

22. (a) Discuss about any one Software Cost Estimation Techniques.

Or

(b) Explain about Project Monitoring Plans.

23. (a) Write about objectives of System Design.

Or

(b) Explain the Software Design Methodologies.

24. (a) Discuss about Internal Documentation.

Or

(b) Explain about Symbolic Execution.

Paper IV — OBJECT ORIENTED PROGRAMMING WITH C++

(For those who joined in July 1999 and after)

Time : Three hours Maximum : 100 marks

PART A — (20 × 2 = 40 marks)

Answer ALL questions.

1. Define OOP.

2. Write a note on character set of C++.

3. What are the basic data types in C++?

4. What is the use of scope resolution operator?

5. Define Inline Functions.

6. _____ refers to the use of same thing for different purposes.

7. What are Arrays?

8. Define class in C++.

9. What are constructors?

10. Give the general form of an operator function.

11. List the operators that cannot be overloaded.

12. Give the general form of a conversion function.

13. Define Friend function.

14. What is an abstract class?

15. Define Pointers.

16. What is the use of 'this' pointer?

17. Define Input stream.

18. What is the purpose of filebuf class?

19. Write a note on get( ) function.

20. What are file pointers?

PART B — (5 × 12 = 60 marks)

Answer ALL questions.

21. (a) Explain about basic concepts of object – oriented programming.

Or

(b) Discuss in detail, different operators in C with examples.

22. (a) Discuss about call by Reference and Return by Reference.

Or

(b) Write a C++ program to illustrate function overloading.

23. (a) Write a C++ program for overloading unary operators.

Or

(b) What are the rules for overloading operators? Explain briefly.

24. (a) Explain about different forms of Inheritance with examples.

Or

(b) Explain the usage of virtual functions with an example.

25. (a) Explain about C++ stream classes.

Or

(b) Discuss in detail, Error Handling during file operations.

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4054/DC5

MAY 2009

Paper V — CLIENT SERVER COMPUTING WITH ORACLE 7

(For those who joined in July 1999 and after)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (20 × 2 = 40 marks)

1. Define data base.
2. What is meant by relational data base?
3. Define concurrency.
4. What are attributes?
5. Define client.
6. List any Two benefits of client/server computing.
7. Define GUI.
8. What are the pitfalls of client/server computing?
9. Give the general syntax of select statement.
10. What is DDL?

11. What is the use of Revoke command?

12. Give the general syntax of Delete command.

13. What is PL/SQL?

14. List the composite data types in PL/SQL.

15. What are triggers?

16. Give the general syntax of PL/SQL Block.

17. Define DBA.

18. What is meant by exception handling?

19. Give the general syntax of grant command.

20. Write the general form of Set Role command.

PART B — (5 × 12 = 60 marks)

21. (a) What are the advantages of DBMS? Explain.

Or

(b) Explain about data integrity and data security.

22. (a) Describe about client/server model.

Or

(b) Explain about object oriented programming for application development.

23. (a) Explain the transaction control statements in SQL with examples.

Or

(b) Describe the use of any SIX SQL numeric functions with examples.

24. (a) Explain about any THREE control statements in PL/SQL with examples.

Or

(b) Write a PL/SQL program to find the sum and average of N given numbers.

25. (a) Explain about backup and recovery.

Or

(b) Explain the various activities of DBA.

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24. (a) Write short notes on:

(i) Command Button

(ii) Scroll bars

Or

(b) Explain any Three Branching Statements in VB with examples.

25. (a) Write a VB program to find the value of a Binomial Coefficient.

$$n_{c_r} = \frac{n!}{(n-r)!r!}$$

Or

(b) Write a VB program to implement a simple calculator using Control Arrays.

4055/DC6

MAY 2009

Paper VI — WINDOWS AND VISUAL BASIC

(For those who joined in July 1999 and after)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (20 × 2 = 40 marks)

1. How will you format a Window?

2. Write a note on: sizing windows.

3. Write about Help menu in windows.

4. What is the use of clipboard?

5. How will you save a MS-Word document?

6. What are Book marks?

7. Write a note on: Auto correct in MS-Word.

8. What is the use of Mail Merge facility?

9. Define : Controls in VB.

10. How will you insert a column in MS-Excel?

11. How many maximum number of columns and rows in MS-Excel's Worksheet?

12. What is the use of max() function in MS-Excel.

13. Define: Formula in MS-Excel.

14. What is meant by IDE?

15. How will you Open Code Window in VB?

16. What is the purpose of msg box() function in VB?

17. What are procedures in VB?

18. Define: Recursive Functions.

19. How will you add controls in a Control Array?

20. Define : Startup form.

PART B — (5 × 12 = 60 marks)

21. (a) Explain about windows GUI.

Or

(b) Explain about the following:

(i) Multitasking.

(ii) Selecting and Moving Windows.

22. (a) Explain about any Four Main Menus in MS-Word.

Or

(b) Explain about the following in MS-Word:

(i) Changing Fonts

(ii) Documents settings

23. (a) Explain about any Three Main Menus in MS-Excel with suitable examples.

Or

(b) Explain about creation of different charts using MS-Excel.

25. (a) Discuss about management issues of information provider.

Or

(b) Write short notes on :

(i) FTP.

(ii) URL.

Paper VII — INFORMATION TECHNOLOGY AND ITS APPLICATIONS

(For those who joined in July 1999 and after)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (20 × 2 = 40 marks)

1. Define broadcast message.

2. What are web search engines?

3. Distinguish between Internet and Intranet.

4. Define extranet.

5. List down any two names of Internet protocols.

6. Define Web Browser.

7. What is the use of HTML?

8. Define Web Index.

9. What is TCP/IP?

10. Write a note on Internet Chat.

11. Define the term simplex.

12. What are dial-up links?

13. How are addresses defined on the Internet?

14. Why use an E-mail?

15. What is spamming?

16. What is the purpose of a newsgroup?

17. Define WAN.

18. List any two benefits of information provider.

19. List any two common mailing list management programs.

20. Define web server.

PART B — (5 × 12 = 60 marks)

21. (a) Explain the various parts of data communication with a block diagram.

Or

(b) Write short notes on :

(i) Electronic Lifelines

(ii) Gopher Services.

22. (a) Explain about HTTP.

Or

(b) Discuss in detail Internet Addressing.

23. (a) Explain about working with direct links.

Or

(b) Explain how modems work in Internet connections.

24. (a) Explain in detail sending and receiving E-mail.

Or

(b) Discuss about mail reflectors and mailing lists.