Reg. No. : ....

D 1730　　　　　　　Q.P. Code : [04 DDCA 06]

(For the candidates admitted from 2004 to 2007
Calender Year)

P.G.D.C.A. EXAMINATION, MAY 2010 DEC 2010

Second Semester

SOFTWARE ENGINEERING

Time : Three hours　　　　　　Maximum : 75 marks

Answer ALL the questions.

PART A — (15 × 1 = 15 marks)

1. ——————————— is the ease with which a program can be converted if a error is encountered.

2. Software Quality metrics like ——————————— metrics, focus on the process, the project the product.

3. The process of auditing and reporting functions of management is known as ———————————.

4. The set of activities that help the project team to identify, control and track requirement is ————————.

5. A review of ———————— is conducted by both the software developer and the customer.

6. ———————— examines the specification to ensure that all system requirements have been stated unambiguously.

7. In ———————— testing individual components are tested to ensure that they operate correctly.

8. ———————— often reveals program defects that must be removed from the program.

9. Acceptance testing is sometimes called ————————.

10. When there is more flexibility in the requirements ———————— is used.

11. The approach that depends on defining standard forms to express the Requirements specification is called ————————.

12. Program Design Language (PDL) also called structured English or ————————.

13. ———————— is conducted at one/more customer site by the end — user of the software.

14. Low —level components are combined into ———————— that perform a specific software sub function.

15. ———————— modules are integrated by moving downward through the control hierarchy beginning with the main control module.

PART B — (5 × 4 = 20 marks)

16. (a) Write short notes on size factors.

Or

(b) Write short notes on goals and requirements.

17. (a) Explain about requirements management and their traceability tables.

Or

(b) Explain about formal specification languages.

18. (a) Write a brief note on Abstraction and Information Hiding of Software design.

Or

(b) Explain about the set of properties for software architectural design.

19. (a) Briefly explain about Exception Handling.

Or

(b) Explain about concurrency mechanism.

20. (a) Write short notes on Unit Testing Procedures.

Or

(b) Discuss about the different maintenance activities.

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PART C — (5 × 8 = 40 marks)

21. (a) Explain about the Quality measurement factor.

Or

(b) Discuss about the planning activities of software engineering.

22. (a) Explain briefly about estimation of software maintenance costs.

Or

(b) Explain about the process for Requirement Specification.

23. (a) Explain software design and Implementation with a neat diagram.

Or

(b) Explain about various testing phases with neat diagram.

24. (a) Explain the structured programming with neat diagram.

Or

(b) Explain software requirements document with a neat diagram.

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25. (a) Discuss the various types of System Testing.

                      Or

     (b) Discuss about the metrics for source code and metrics for testing.

     —————————

D 1724   Q.P. Code : [99 DDCA 12]

(For the candidates admitted from 1999 to 2002)

P.G.D.C.A. EXAMINATION, MAY 2010.

RELATIONAL DATABASE MANAGEMENT SYSTEMS

Time : Three Hours   Maximum : 100 marks

Answer ONE question from each Unit.

All questions carry equal marks.

UNIT I

1. (a) What is data model? Explain types of data model.   (15)

    (b) Write short notes on database administrator.   (5)

Or

2. (a) What is E-R diagram? Give one example and explain.   (15)

    (b) Discuss about relationship model.   (5)

UNIT II

3. (a) Distinguish relational algebra and relational calculus. (15)

   (b) What is DML? Explain. (5)

   Or

4. (a) Explain in detail about the basic structure of an SQL expression with example. (15)

   (b) Write about aggregate function. (5)

UNIT III

5. (a) Discuss in detail about functional dependencies. (15)

   (b) Write short notes on triggers. (5)

   Or

6. (a) Describe about relational database design. (15)

   (b) Briefly discuss on join dependencies. (5)

UNIT IV

7. Explain about object oriented database. (20)

   Or

8. Explain in detail about complex types and object-orientation. (20)

UNIT V

9. Distinguish between distributed database and parallel database. (20)

   Or

10. Explain in detail about database system architectures. (20)

_____

D 1275 Q.P. Code : [99 DDCA 09]

(For the candidates admitted from 1999 to 2002)

P.G.D.C.A. EXAMINATION, DECEMBER 2010.

COMPUTER PROGRAMMING IN C AND C++

Time : Three hours Maximum : 100 marks

Answer ONE question from each Unit.

(5 × 20 = 100)

UNIT I

1. (a) Explain the structured programming in detail. (10)

    (b) Discuss the basic concepts of Object Oriented Programming. (10)

Or

2. (a) What are all the available operators in C? Explain with an example. (10)

    (b) With a suitable example explain Arrays and types of Arrays. (10)

UNIT II

3. (a) Write a C program for student database and calculate total, average and grade of a student using structure. (10)

   (b) Write a C++ program using Constructor and Destructor. (10)

Or

4. (a) Discuss the operations which are carried out on strings with an example C++ program. (10)

   (b) Write a C program for Fibonacci Series using recursion. (10)

UNIT III

5. (a) What is the use of Enumeration? Explain with a suitable example. (10)

   (b) What is operator overloading? Explain with an example program. (10)

6. (a) What is Inheritance? Explain various inheritance with an example. (10)

   (b) With a suitable example explain the polymorphism. (10)

UNIT IV

7. (a) Compare Friend function and Virtual function with an example. (10)

   (b) Discuss the stream classes for console operations in C++. (10)

Or

8. (a) Discuss the use of Type Conversion with an example. (10)

   (b) Write a C++ program for inventory to add, delete and display items using files. (10)

UNIT V

9. (a) Discuss Error handling in C++ with suitable example. (15)

   (b) Write short notes on friend functions.

Or

10. (a) Explain various types of inheritance with suitable example. (15)

    (b) Write short notes on Inline functions. (5)

D 1283 Q.P. Code : [99 DDCA 11]

(For the candidates admitted from 1999 to 2002)

P.G.D.C.A. EXAMINATION, DECEMBER 2010.

SOFTWARE ENGINEERING

Time : Three hours Maximum : 100 marks

Answer ALL questions. (5 × 20 = 100)

UNIT I

(a) Briefly explain the software myths.

(b) Briefly explain software applications.

Or

2. (a) Briefly explain the software and hardware considerations.

(b) Briefly explain about the software crisis.

UNIT II

3. (a) Explain the software requirements specification in detail.

(b) What is prototyping? Explain the spiral model in detail.

Or

4. (a) Briefly explain object oriented design.

   (b) Explain about system modelling.

UNIT III

5. (a) Explain in detail about design optimization.

   (b) Explain in detail about Jackson system development.

Or

6. (a) Explain in detail about design process considerations.

   (b) Write short notes on data structure versus data flow techniques.

UNIT IV

7. (a) Write short notes on Real time systems.

   (b) Write short notes on software reuse.

Or

8. Explain in detail about the Data Flow Oriented design method.

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UNIT V

9. (a) Explain in detail about black box testing.

   (b) Explain in detail about white box testing.

Or

10. (a) Explain in detail about quality metrics.

    (b) Explain in detail about software maintenance.

___

3   D 1283

23. (a) Discuss the normalization using functional dependencies.

Or

(b) Elaborate the normalization using join dependencies.

24. (a) Explain the important aspects of object-oriented data model.

Or

(b) Give an overview of object-relational databases.

25. (a) Describe the architecture of centralized database systems and client-server systems.

Or

(b) Discuss about distributed data storage.

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D 1727　　　　　　Q.P. Code : [04 DDCA 03]

(For the candidates admitted from 2004 to 2007 calendar year)

PGDCA EXAMINATION, MAY 2010.

First Semester

RELATIONAL DATABASE MANAGEMENT SYSTEMS

Time : Three hours　　　　　Maximum : 75 marks

Answer ALL the questions.

PART A — (15 × 1 = 15 marks)

1. Define : Entity.

2. What is represented by 'double ellipse' in E-R diagram?

3. Define : Superkey.

4. Name the three clauses in the basic structure of an SQL expression.

5. Mention any one of the set operation in SQL.

6. What is indicated by null value?

7. Give any one of the pitfalls in relational database design.

8. Write the significance of domain constraints.

9. What is functional dependency?

10. Give the strength of object-relational system.

11. Define : Hypertext.

12. Expand the term CASE.

13. Define : Throughput.

14. What is referred by 'scaleup' in parallel systems?

15. Name the most common data partitioning in a parallel database environment.

PART B — (5 × 4 = 20 marks)

16. (a) What are the functions of database administrator? Explain.

Or

(b) Give the overall system structure.

17. (a) Explain the tuple relational calculus.

Or

(b) List and explain the aggregate functions available in SQL.

18. (a) What are called assertion and triggers? Explain.

Or

(b) Write a note on referential integrity.

19. (a) Discuss the important features of persistent programming language.

Or

(b) Compare object-oriented and object-relational databases.

20. (a) Explain the interquery and intraquery parallelism.

Or

(b) Discuss about deadlock handling aspect.

PART C — (5 × 8 = 40 marks)

21. (a) What are three groups of data models? Explain.

Or

(b) Discuss about reduction of an E-R schema to tables.

22. (a) Describe the various operations in the relational algebra.

Or

(b) Explain the different ways of joining tables in SQL.

22. (a) Write an algorithm for inserting an element into a linked list.

Or

(b) Explain with illustration depth-first search on a graph.

23. (a) Write algorithms for heapify and heap sort.

Or

(b) Write notes on K-way merging.

24. (a) Write different techniques for overflow handling.

Or

(b) Discuss various file organizations with examples.

25. (a) Discuss simulation of an airport.

Or

(b) Explain pattern matching techniques on strings.

———————

D 1728   Q.P. Code : [04 DDCA 04]

(For the candidates admitted from 2004 to 2007 Calendar Year)

P.G.D.C.A. EXAMINATION, MAY 2010.

First Semester

DATA STRUCTURES AND ALGORITHM

Time : Three hours   Maximum : 75 marks

Answer ALL questions.

SECTION A — (15 × 1 = 15 marks)

1. What is an array?

2. An array with more number of zeroes is called ——————.

3. Postfix expression for $a*b+c/(d-e+f)$ is ——————.

4. A full binary tree is a complete tree. (Say True or False)

5. In threaded binary tree, leaf nodes are linked to —————— node.

6. A graph can't have a cycle. (Say True or False)

7. A ——————— element divides an array into two parts in Quick Sort.

8. Define max-heap property.

9. Mention a secondary storage device.

10. What is dynamic tree table?

11. Give a hashing function.

12. What is an index of a file?

13. What is game tree?

14. Define factorial in recursion.

15. Placing a bigger disk on a small disk is allowed in Towers of Hanoi. (Say True or False)

SECTION B — (5 × 4 = 20 marks)

16. (a) Write notes on representation of arrays.

Or

(b) Write notes on multiple stacks and queues.

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17. (a) Write brief notes on garbage collection and compaction.

Or

(b) Define post-order traversal on a binary tree.

18. (a) Write short notes on insertion sort.

Or

(b) Explain briefly sorting on several keys.

19. (a) Explain the differences between static and dynamic tree tables.

Or

(b) Define two hashing functions.

20. (a) Briefly explain game trees.

Or

(b) Define the towers of Hanoi problem.

SECTION C — (5 × 8 = 40 marks)

21. (a) Write algorithm for push and pop operations of a stack and insertion and deletion of a queue.

Or

(b) Write an algorithm for converting an infix expression into a post-fix expression.

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D 1731 **Q.P. Code : [04 DDCA 08]**

(For the candidates admitted from 2004 to 2007
calendar year)

P.G.D.C.A. EXAMINATION, MAY 2010.

Second Semester

COMPUTER NETWORKS

Time : Three hours Maximum : 75 marks

SECTION A — (15 × 1 = 15 marks)

Answer ALL questions.

Choose the correct answer :

1. Accessing the Internet from a typical home PC
    requires the use of —————

    (a) CD-ROM (b) MODEM

    (c) Windows 95 (d) Netscape.

2. OSI model has ————— Layers.

    (a) Four (b) Three

    (c) Seven (d) Eight

3. Active elements in same layer on different machine is called —————

   (a) Entity

   (b) Peer entity

   (c) Service Access point

   (d) Interface.

4. A proxy server is —————

   (a) Backup server   (b) Email Server

   (c) Poor file server   (d) None.

5. As the data packet moves from the lower to upper layers, headers are —————

   (a) Added   (b) Subtracted

   (c) Rearranged   (d) Modified.

6. Data is transmitted using a light in ————— cable.

   (a) Twisted pair   (b) Co-axial

   (c) Fiber-optic   (d) Microwave.

7. The ————— layer changes bits into electromagnetic signals

   (a) Physical   (b) Data link

   (c) Transport   (d) Session

8. The physical layer is concerned with the transmission of ————— over the physical medium.

   (a) Programs   (b) Dialogs

   (c) Protocols   (d) Bits.

9. The important function of Data link layer is—————

   (a) Routing

   (b) Error detection between source and Destination

   (c) Reliable transmission

   (d) Link management.

10. MAC address is ————— bit length.

    (a) 48   (b) 32 bit

    (c) 16 bit   (d) 8 bit.

11. Each Computer on the Internet has unique numeric address called —————

    (a) Domain Address

    (b) Protocol Address

    (c) IP Addresses

    (d) Web address.

12. The data transmit along with acknowledgment is called ——————

    (a) Frame   (b) Packet

    (c) Piggybacking   (d) Flow control

13. —————— protocol is use n TELNET.

    (a) UDP   (b) TCP/IP

    (c) ICMP   (d) None

14. Router operates at —————— layer.

    (a) Data link   (b) Network

    (c) Transport   (d) Physical

15. The number of byte transferred per second is called ——————

    (a) Baud   (b) Data rate

    (c) Throughput   (d) None.

    SECTION B — (5 × 4 = 20 marks)

    Answer ALL questions.

16. (a) Describe the different modes of communication with example.

    Or

    (b) Write short notes on ARPANET and USENET.

17. (a) Describe the mobile telephone system in detail.

    Or

    (b) Discuss the working mechanism of Cable Television.

18. (a) Explain the design issues of data link layer in detail.

    Or

    (b) Describe Automatic Repeat request (ARQ) protocol in detail.

19. (a) Explain the datagram routing in detail

    Or

    (b) Describe Distance Vector Routing with example.

20. (a) Explain the header format of TCP.

    Or

    (b) What is silly syndrome problem? Explain in detail.

SECTION C — (5 × 8 = 40 marks)

Answer ALL questions.

21. (a) Explain the OSI reference model in detail.

Or

(b) Describe in detail about the Network Hardware.

22. (a) Describe the various guided media in detail.

Or

(b) Explain the concept of communication satellites in detail.

23. (a) Discuss in detail the various error detection techniques in Data Link layer.

Or

(b) The actual transmit data 1001. Using Hamming code encode the data.

24. (a) Describe the link state routing in detail

Or

(b) Explain the principles of Internet working in detail.

25. (a) Explain the congestion control mechanisms in TCP.

Or

(b) Write short notes on :

(i) ARP

(ii) RARP

(iii) ICMP

———————

Reg. No. : ....

D 1137   Q.P. Code : [07 DDCA 01]

(For the candidates admitted from 2007 onwards)

P.G.D.C.A. EXAMINATION, DECEMBER 2010.

DIGITAL COMPUTER FUNDAMENTALS AND COMPUTER ARCHITECTURE

Time : Three hours   Maximum : 100 marks

Answer any FIVE questions.

(5 × 20 = 100)

1. (a) Explain the subtraction of binary numbers using 1's and 2's compliment with suitable examples.   (8)

    (b) Convert $(10110.0101)_2$ to decimal.   (3)

    (c) Convert $(26.24)_8$ to decimal.   (3)

    (d) Using 2's compliment subtraction method find (11011–11001) and (110100–10101).   (6)

2. (a) Explain semiconductor memory.   (10)

    (b) Draw the digital logic circuit for the following expression :   (10)

        (i) $AB' + BC' + B'C'$

        (ii) $(AB + A'B')(CD' + C'D)$.

3. With neat diagram and truth table explain encoder and decoder.   (20)

4. With neat diagram explain 4-bit serial-in-serial-out shift register.   (20)

5. (a) Explain stack organisation in CPU.   (10)

    (b) Explain register transfer logic and operation in CPU.   (10)

6. Explain all peripharar devices.   (20)

7. (a) Explain virtual memory   (10)

    (b) Explain DMA.   (10)

8. Simplify the following expression by POS method $AC + B'D + A'CD + ABCD$.   (20)

———————

2   D 1137

Reg. No. : ....

D 1138

Q.P. Code : [07 DDCA 02]

(For the candidates admitted from 2007 onwards)

P.G.D.C.A. EXAMINATION, DECEMBER 2010.

DATA STRUCTURES USING 'C'

Time : Three hours　　　　　　Maximum : 100 marks

Answer Five questions out of Eight questions.

(5 × 20 = 100)

1. (a) What is an abstract data type? Mention the need for the data structures.

   (b) Explain the various data types supported by C language. (10)

   (c) What are ternary operators? Give suitable example. (5)

2. Write a C program to perform the following operations using 2D arrays.

   (a) Matrix multiplication (10)

   (b) Print the row sum and column sum for the given matrix. (10)

3. (a) Explain how records using UNION concept are declared, stored and manipulated? (10)

   (b) What is a pointer? Mention its advantages. (10)

4. (a) Differentiate between functions and macros. (5)

   (b) What is a stack? Explain how push and pop operations are implemented. (15)

5. Trace the steps of insertion sort for the elements 22, 65, 70, 75, 89, 90, 95, 102, 123. (20)

6. Explain binary search algorithm with suitable example. (20)

7. (a) Explain switch statement with example. (10)

   (b) What are ternary operators? Give suitable example. (5)

   (c) With suitable example, explain continue and break statements. (5)

8. Write a C program to delete the duplicate elements present in a doubly linked list. (20)

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Reg. No. : ....

D 1139   Q.P. Code : [07 DDCA 03]

(For the candidates admitted from 2007 onwards)

P.G.D.C.A. EXAMINATION, DECEMBER 2010.

OPERATING SYSTEMS

Time : Three hours   Maximum : 100 marks

Answer any FIVE questions.

(5 × 20 = 100)

1. (a) Describe in detail the concepts of Context switching and Thread. List the difference between them.   (12)

    (b) Explain in detail about PCB.   (8)

2. Discuss the various page replacement algorithms in virtual storage with suitable examples.   (20)

3. Explain in detail the principles of contiguous and non-contiguous storage allocation.   (20)

4. Write short notes on :
    (a) Deadline scheduling   (5)
    (b) Shortest Job First Scheduling (SFS)   (5)
    (c) Shortest Remaining Time (SRT).   (5)
    (d) Least Total Processing Time (LTPT).   (5)

5. (a) Explain the operation of moving head disk storage in detail.   (10)

    (b) Discuss elaborately the need for disk scheduling.   (10)

6. (a) Describe the concepts of file allocating and freeing space detail.   (10)

    (b) Explain the different organization of file system.   (10)

7. (a) List the classification of sequential and parallel processing.   (10)

    (b) Discuss the concepts of fault tolerance in detail.   (10)

8. (a) Explain the user view's of MS-DOS in detail.   (10)

    (b) Describe in detail about the process management in UNIX system.   (10)

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D 1140   Q.P. Code : [07 DDCA 04]

(For the candidates admitted from 2007 onwards)

P.G.D.C.A. EXAMINATION, DECEMBER 2010.

SOFTWARE ENGINEERING

Time : Three hours   Maximum : 10 marks

Answer any FIVE out of Eight questions.

(5 × 20 = 100)

1. Define Software Engineering. Discuss in detail with software crisis and software myths.

2. Describe requirement analysis and specification.

3. Explain effective modular design.

4. Discuss in detail about mapping requirements into a software architecture.

5. (a) Describe software testing techniques and testing fundamentals.

    (b) List any two testing tools.

6. Distinguish white box testing and black box testing.

7. Explain control structure testing and paths testing.

8. (a) Write brief notes on the reverse engineering and taxonomy of case tools.

    (b) Write short notes software re-engineering process.

———————