



**Post-Graduate Diploma in Computer  
Application Examination,2007  
ELECTRONIC DATA PROCESSING**

**DCA -103**

Time Allowed: Three hours

**Maximum Marks: 100**

**Attempt any five questions. All question carry equal marks.**

**Unit-I**

- 1) What do you understand by DBMS ? Write down the difference between DBMS and RDBMS ? Also write various advantages of using DBMS ?
- 2) (a) Explain the different level of data abstraction with suitable example  
(b) Write down the responsibilities of DBA.

**Unit II**

- 3) (a) Draw an ER – model for a university to maintain data about the following entities:
  - i. Course including number, title, credits, syllabus and prerequisites.
  - ii. Course offerings including course number, year, semester, section number, instructors, timings and classroom.
  - iii. Students, including student id, name, and program
  - iv. Instructors including identification number, name, department and title. Further, the enrollment of student in course and grades awarded to student in course and grades awarded to students in each courses they are enrolled for must be appropriately recorded. Make all assumptions for mapping constraints.
 (b) Explain the concept of generalization and aggregation with suitable example.
- 4) (a) Explain the random and index sequential access file with the help of suitable example.  
(b) Write down and explain the different form of normalization with the help of suitable example.

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### Unit III

- 5) (a) Explain how the data and memo field is stored in foxpro. Also explain the reason for storing that way.  
 (b) What is an array ? Write down the difference between an array and memory variable in foxpro .
- 6) (a) Write down the difference between searching and sorting. Explain foxpro command for searching and sorting with syntax.  
 (b) Write down and explain the command with syntax :  
 (i) Appending data  
 (ii) Editing data  
 (iii)Deleting data

### Unit IV

- 7) (a) Write a foxpro program to find out the age in years,month and days. Where date of birth entered by user .?  
 (b) Write down and explain the index and compared index file.
- 8) (a) Write down the difference between ZAP and PACK command.  
 (b) Write a program in foxpro to calculate the monthly salary of an employee.  
 Where:  
 PF=12% of basic salary  
 DA=25% of basic salary  
 TA= 10% of basic salary  
 Deduction=2% of basic salary  
 Grand Total=DA+TA+basic  
 Net salary=Grand Total-Deduction

Where basic salary to be inputted by user ?

### Unit V

- 9) Write a payroll application ,design master and transaction file.Also design a screen for entry /edit a record in master file. Also generate a report for the pay slip generation.
- 10) (a) What is a user define function ? write down the difference between a procedure and function  
 (b) Write down and explain the SET command to set various environment variables.



**Post-Graduate Diploma in Computer  
Application Examination, 2007  
INTRODUCTION TO IT AND PC  
PRODUCTIVITY TOOLS**

**DCA-101**

Time Allowed: Three hours

**Maximum Marks: 100**

Attempt any five questions. All question carry equal marks.

**Unit-I**

- 11) (a) Describe the components of computer system by making block diagram ? (6)
- (b) Convert the following : (8)
1.  $(ABC)_{16} = (?)_2$
  2.  $(59.20)_{10} = (?)_8$
  3.  $(10110.110)_2 = (?)_{16}$
  4.  $(10100110)_2 = (?)_8$
- (b) Short notes on : (6)
- (i) Bit
  - (ii) Byte
  - (iii) Word
- 12) (a) What is secondary storage media ? Name any five of them and distinguish between sequential and access devices. (10)
- (c) Write short notes on : (10)
- (i) Boolean algebra with concepts
  - (ii) Arithmetic operation with example

**Unit II**

- 13) (a) Describe briefly: (10)
- a) Mainframe computer
  - b) Mini computer
  - c) Super computer
  - d) Personal computer
  - e) Digital and hybrid computer

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(b) What cache memory and how it is different from virtual memory ? (10)

14) Comment any five :

- a) Serial Access Memory
- b) Random Access Memory
- c) Memory Access Memory
- d) Register Memory
- e) Main Memory
- f) Virtual Memory
- g) Types of ROM

(20)

### Unit III

15) (a) Describe GUI components and why windows operating system are very popular ? (10)

(b) Describe the utilities of MS Word with mail merge and macro feature. (10)

16) (a) What do you mean by the term software ? Describe its type with the function of operating system. (12)

(b) Remark of any two :

- (i) Header and footer
- (ii) Footnote and Endnote
- (iii) Template and wizard

(8)

### Unit IV

17) (a) What is spread sheet package ? Describe all toolbars available in ms excel. (12)

(b) What is cell referencing ? Describe its various types. (8)

18) Write short notes on any five:

- a) Functions
- b) Graph and charts
- c) Goal seek
- d) Pivot table
- e) Filter
- f) Scenario
- g) Worksheet v/s Workbook

(20)

### Unit V

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- 19) (a) What do you mean by presentation and slides the three ways of creating presentation ? (10)  
(b) How many types of view are available in power point ? describe each. (10)
- 20) (a) What is organization chart ? Describe the steps and elements of creating an organization chart. (12)  
(b) Write shortnotes on :  
a) Costume animation  
b) Slide transition  
c) Ways of starting slide show (8)





**Post-Graduate Diploma in Computer  
Application Examination,2007  
JAVA**

**DCA-107-b**

Time Allowed: Three hours

**Maximum Marks: 100**

**Attempt any five questions. All question carry equal marks.**

**Unit-I**

- 21) (a) Write down the characteristics of object oriented programming. (13)
- (b) How is java more secure than other languages ? Explain java's association with the internet. (7)
- 22) (a) What are the data types available in java. Explain all of them. (12)
- (b) Write a program to convert a decimal number into binary number. (8)

**Unit II**

- 23) Differentiate between the following :
- a) Logical operators and bitwise operators
- b) Switch and if
- c) Vectors and array
- d) Interface and class
- e) Input stream and output stream (4+4+4+4+4)
- 24) (a) What do you understand by recursion ? Write a program to print Fibonacci series using recursion ? (12)
- (b) Write a program which will read and write a text and count all occurrences of a particular word. (8)

**Unit III**

- 25) (a) What is a constructor ? What are its special properties ? Why constructor do not specify any return type ? Write a program to perform constructor overloading. (12)
- (b) What are the applications of wrapper classes ? (8)
- 26) (a) How does a string class differ from the string buffer class ? Discuss the commonly used methods of both classes. (13)

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(b) Write a program that accepts a shopping list of five items from the command line and stores them in a vector. (7)

#### Unit IV

- 27) What is an exception ? Discuss the common exceptions. How do we define try and catch block. Define an exception called 'No Match Exception' that is thrown when a string is not equal to 'India'. Write a program that uses this exception. (20)
- 28) What is a package ? How do we tell java that we want to use a particular package in a file ? How do we design a package ? Explain with an example.(20)

#### Unit V

- 29) (a) What is an applet ? Discuss the steps involved in loading and running a local applet. Distinguish between init() and start() methods. (13)
- (b) Develop an applet that receives three numeric values as input from the user and then displays the largest of the three on the screen. (7)
- 30) Write shortnotes on the following:
- AWT
  - Utility Classes
  - Multithreading
- (7+7+6)



**Post-Graduate Diploma in Computer  
Application Examination, 2007  
OPERATING SYSTEM**

**Paper :105**

Time Allowed: Three hours

**Maximum Marks: 100**

**Attempt any five questions. All question carry equal marks.**

**Unit-I**

- 31) (a) What is Operating System ? List Function of O.S. Why was time sharing not widespread on second generation of computers. (2+6+4)
- (b) List four differences between personal computer operating system and main frame operating system. (8)
- 32) Explain the role of system call in operating system. List all system calls related for process management and file management. (4+8+8)

**Unit II**

- 33) “Any synchronization problem that can be solved with semaphores can be solved with messages and vice-versa.” Explain the reasoning you need to come up with your answer. (20)
- 34) Consider the following set of processes with the length of the CPU burst time given in milliseconds :

Process	Burst time
P1	10
P2	29
P3	3
P4	7
P5	1

All five processes arrive at time 0, in the order given. Draw grant charts illustrating the execution of the processes using FCFS, SJF and RR(quantum=1) Scheduling. What is the turn around time of each of the scheduling algorithms ? also find the average waiting time for each algorithm. (20)

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### Unit III

- 35) With the help of an example and suitable diagram, explain the address mapping scheme in paging ? (20)
- 36) What is the case of thrashing ? How does the system detect thrashing ? Once it detects thrashing, what can the system do to eliminate this problem ? (20)

### Unit IV

- 37) Under which circumstances would a client prefer a location transparent DFS ? Under which would she prefer a location independent DFS ? Discuss the reasons for their performance. (20)
- 38) (a) Why is deadlock detection much more expensive in a distributed environment than in a centralized environment ? (10)
- (b) Explain the following :
1. Encryption
  2. Inter process communication protocol
- (10)

### Unit V

- 39) (a) Write Unix command for the following :
1. To search for a string from two given file
  2. To display the lines that does not include the given string
  3. To find the No. of character word and lines in a text file
  4. To kill a process with a pid'1150'
  5. To display last 20 lines of a file.
  6. To display hard disk space used.
- (20)
- (b) Describe the file structure in UNIX O.S. (8)
- 40) (a) Write shell program to count the number of positive and negative numbers in given list . (10)
- (b) List differences with suitable examples:
1. CP and MV command
  2. CMP and diff commands
- (5+5)



**Post-Graduate Diploma in Computer  
Application Examination, 2007  
ADVANCED DATABASE MANAGEMENT  
SYSTEM**

**DCA :104**

Time Allowed: Three hours

**Maximum Marks: 100**

Attempt any five questions. All question carry equal marks.

**Unit-I**

1. (a) Explain the concepts of aggregation and encapsulation with the help of suitable example .  
(b) What is attribute ? Explain with suitable example different types of attribute.
2. Explain in brief :
  - a. Primary file
  - b. Secondary file
  - c. Multilevel file

**Unit-II**

3. Write shorynotes on architecture of distributed processing system ?
4. What is serializability ? What is recovery ? Explain the various recovery techniques used to recover the data.

**Unit-III**

5. Write short notes on :
  - a. External sorting algorithm
  - b. Project set operation
  - c. Data mining
  - d. Query optimization
6. Write shortnotes on :
  - a. Data warehouse
  - b. XML technology

**Unit-IV**

7. How will you create in oracle give one example for each:
  - a. SQL report
  - b. Procedure

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- c. Function
- d. Packages

8. What is trigger ? Explain in brief various types of trigger with the help of example and explain pl/sql datatype .

#### Unit-V

9. What is the important role of external view in DB2 ? Explain with suitable example and also explain DB2 internal.
10. (a) Write a programme in RPG/400 to find the largest number from a given 10 numbers.
- (b) Write short notes on RPG/400
- (i) Branching
  - (ii) Looping
  - (iii) Subroutine





**Post-Graduate Diploma in Computer  
Application Examination,2007  
PROGRAMMING WITH C AND  
VISUAL BASIC**

**DCA :102**

**Time Allowed: Three hours**

**Maximum Marks: 100**

**Attempt any five questions. All question carry equal marks.**

**Unit-I**

1. Define the structure of C program. How the type conversions takes place in C ?
2. (a) Explain the different types of loops available in C.  
(b) What is recursion ? Write a program to calculate factorial by recursion .

**Unit-II**

3. What do you understand by array of pointers and pointer to array ? differentiate with suitable example.
4. (a) Describe the utility of string function in C.  
(b) Write a program to fill array through function by passing the address of array.

**Unit-III**

5. What is the difference between structure and function ? Define the structure for circular link list.
6. Write short notes on following :
  - a. Queue and D-Queue
  - b. Double link list
  - c. Typedef
  - d. Pointers to structures

**Unit-IV**

7. (a) How visual basic supports event driven programming ? explain.  
(b) What is active X control ? Discuss its uses by taking suitable example.
8. (a) Write a vb code to create a form that displays a pop up menus when the right mouse button is clicked anywhere over the form.  
(b) What is error handling ? How doyou remove the errors through debugging ?

**Unit-IV**

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9. Explain in detail database programming in visual basic with example.

10. Write short notes on :

- a. File system objects
- b. File handling
- c. Sequential and random file
- d. Graphic control

