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**V Semester B.C.A.3 (Regular) Examination, November/December 2017**  
**DATABASE MANAGEMENT SYSTEM**

Time : 3 Hours

Max. Marks : 80

**Instruction :** Draw diagrams wherever necessary.

**PART – A**

I. Answer **any ten** questions :

**(10×2=20)**

- 1) a) What are the tasks done by DBMS ?
- b) Define the term metadata.
- c) What do you mean by controlled redundancy ?
- d) Who is an end user ? Mention their categories.
- e) What is relationship type ? What are their types ?
- f) Define primary and foreign key.
- g) What is entity and attribute ?
- h) Define schema.
- i) Give the difference between COMMIT, ROLLBACK.
- j) Define transaction. Give example.
- k) List various aggregate function with example in SQL.
- l) What is data model ? Give various categories.

**PART – B**

II. Answer **any four** questions :

**(5×4=20)**

- 2) Explain various actors on the scene.
- 3) Explain various DBMS languages with example.

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- 4) Define attributes and explain different types of attributes.
- 5) Explain with example the operations UNION, INTERSECTION and MINUS of relational algebra.
- 6) Define transaction and explain various states of transaction.
- 7) Explain the types of locks for concurrency control.

PART – C

- III. Answer **any four full** questions : (10×4=40)
- 8) a) Explain the characteristics of DBMS in detail.  
b) List the workers behind the scene. (8+2=10)
  - 9) a) Draw the ER diagram for company database.  
b) Explain logical and physical data independence. (6+4=10)
  - 10) a) Explain the characteristics of relation.  
b) Draw the simplified database system environment. (5+5=10)
  - 11) a) Explain first and second normalized form.  
b) Explain UPDATE and DROP SQL command. (5+5=10)
  - 12) a) What is unary relational operator ? Explain SELECT and PROJECT operations.  
b) What do you mean by recovery in transaction processing ? Discuss the various failures with respect to recovery. (5+5=10)
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**V Semester B.C.A.3 Degree Examination, Nov./Dec. 2017**  
**WEB PROGRAMMING (Regular)**

Time : 3 Hours

Max. Marks : 80

- Instructions :** a) Draw diagram *wherever necessary*.  
b) Write code snippets *wherever required*.

**SECTION – A**

Answer any ten questions of the following :

**(2×10=20)**

1. a) Name the XHTML tag used for hyperlinks. List its important attributes.
- b) What is MIME ?
- c) Write the XHTML Code to display  $x^2 + y^2 = z^2$ .
- d) Give the syntax to call a file named fibonacci.js from a XHTML file.
- e) What are metacharacters in javascript ? List any four metacharacters.
- f) List any two ASP.NET page directives and mention their uses.
- g) Name any two states of an ASP.NET application. Give their uses.
- h) Differentiate between a label control and a literal control.
- i) Name the data types supported by Rangevalidator control.
- j) What is the use of a datareader ?
- k) What is the functionality of data provider in ADO.NET ?
- l) List various font properties.

**SECTION – B**

Answer any four of the following :

**(5×4=20)**

2. Write a note on web servers and their characteristics.
3. Write a XHTML program to display the subjects of BCA V semester in a table form. Use external style sheets.
4. Write a note on various image formats.

P.T.O.



5. Explain the tags and attributes associated with XHTML.
6. Explain the single page and code behind page models in ASP.NET.
7. Explain the important features of ADO.NET.

**SECTION – C**

Answer **any four** of the following :

**(10×4=40)**

8. Explain the request and response phases in HTTP.
  9. a) Explain XHTML lists. Give various properties of ordered and unordered lists.  
b) Write an XHTML program to display the following in list format.
    - i) List of five cities (unordered, square bullets)
    - ii) List of five rivers (ordered, roman numbers). **(6+4=10)**
  10. a) With syntax, explain the working of alert, prompt and confirm methods in Java Script.  
b) Write a XHTML/Javascript program to display fibonacci series upto n. **(6+4=10)**
  11. Explain various validation controls with example.
  12. What is a dataset ? What is its significance ? List and explain various components that can be used with a dataset.
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**V Semester B.C.A. 3 Degree Examination, Nov./Dec. 2017**  
**·NET FRAMEWORK USING C # (Regular)**

Time : 3 Hours

Max. Marks : 80

***Instruction: All Sections are compulsory.***

**PART – A**

1. Answer **any ten** of the following. **(2×10=20)**
- a) Mention the use of WriteLine() and ReadLine() methods of Console class.
  - b) What is the purpose of static keyword ?
  - c) Define the term constructor.
  - d) List any two methods of System.GC class.
  - e) What is an inner exception ?
  - f) What is the significance of System. Application Exception class ?
  - g) How is an Interface member invoked at Object level ?
  - h) What is an event ? Give example.
  - i) What is a shared assembly ?
  - j) What is the purpose of Directory Info Class ?
  - k) Write the syntax of for each loop.
  - l) What is the difference between constant and read only ?

**P.T.O.**



## PART – B

Answer **any four** of the following :

(5×4=20)

2. Explain the various decision making constructs in C#.
3. Discuss the basics of object lifetime.
4. Write a program to demonstrate exception handling using try catch and finally block.
5. Explain the •NET delegate type.
6. Describe the format of a •NET assembly.
7. Write a C# program to demonstrate the working of a simple calculator.

## PART – C

Answer **any four** of the following :

(10×4=40)

8. What is a software Framework ? Explain the building blocks of •NET framework.
9. Explain briefly :
  - a) C# polymorphic support.
  - b) Documenting C# code via XML. (5+5)
10. a) Explain the role of •NET exception handling.  
b) Write a program to reverse a string and check whether it is palindrome. (5+5)
11. a) Explain StreamReader and StreamWriter Classes.  
b) Write a C# program to display machine details like machine name, physical memory, last bootup, etc. (5+5)
12. Write short notes on **any two** :
  - a) Datatypes in C#.
  - b) C# casting rules.
  - c) Boxing and unboxing. (5+5)



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**V Semester B.C.A.3 Degree Examination, November/December 2017  
(Regular)**

**OPERATING SYSTEM**

Time : 3 Hours

Max. Marks : 80

**Instructions :** 1) Answer the questions of **all three** Sections as per the **instruction**.

2) Draw the diagrams **wherever necessary**.

**SECTION – A**

1. Answer any 10 of the following :

(10×2=20)

- What is multiprogramming ?
- List any four services of an operating system.
- Mention the types of Inter Process Communication.
- Differentiate between Independent and co-operating process.
- Define Turn Around Time.
- Differentiate between counting and Binary semaphore.
- What is logical address ?
- What is fragmentation ?
- What is the use of an overlay ?
- What is thrashing ?
- What is worm ?
- What is page fault ?

**SECTION – B**

Answer any 4 questions.

(4×5=20)

- Explain the concept of virtual machine with neat diagram.
- Explain the activities of an operating system in connection with process management and file management.

P.T.O.



4. Explain PCB with neat diagram.
5. Explain paging with an example.
6. Explain various file attributes.
7. Explain the concept of boot block and bad block.

### SECTION – C

Answer **any 4** of the following :

**(4×10=40)**

8. Consider the following set of processes with CPU burst time and arrival time given in milliseconds.

Process	Arrival time	Burst time
P <sub>1</sub>	0	8 ms
P <sub>2</sub>	1	4 ms
P <sub>3</sub>	2	9 ms
P <sub>4</sub>	3	5 ms

Draw the GANTT-CHART illustrating the execution of these processes using FCFS and Round-Robin scheduling (Quantum Time 1 ms).

Calculate the average waiting time for FCFS, RR scheduling.

Calculate average turn around time for FCFS and RR scheduling.

**(4+3+3)**

9. a) Explain linked allocation method of allocating disk space to file.
  - b) Explain real time systems.
- (5+5)**
10. a) Explain dining philosophers problem of synchronization.
  - b) Explain segmentation with an example.
- (5+5)**





11. Consider a system with 5 processes  $P_0$  through  $P_4$  and three resource types A, B, C. Resource type A has 10 instances, resource type B has 5 instances, and resource type C has 7 instances. The following snapshot of the system has been taken.

	Allocation			Max		
	A	B	C	A	B	C
$P_0$	0	1	0	7	5	3
$P_1$	2	0	0	3	2	2
$P_2$	3	0	2	9	0	2
$P_3$	2	1	1	2	2	2
$P_4$	0	0	2	4	3	3

Using Banker's algorithm answer the following :

- i) What is the content of available matrix ?
  - ii) What is the content of need matrix ?
  - iii) Find the safe sequence if the system is in a safe state. (2+2+6)
12. a) Explain optimal page replacement and least recently used page replacement algorithm considering the following reference string.
- [7, 0, 1, 2, 0, 3, 0, 4, 2, 3, 0, 3, 2, 1, 2, 0, 1, 7, 0, 1]
- b) Explain SCAN and LOOK Disk scheduling algorithm with an example. (5+5)
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