



Name :

Roll No. :

Invigilator's Signature :

CS/B.Pharm-(NEW)/SEM-6/PT-610A/2013

2013

**COMPUTER APPLICATION IN PHARMACEUTICAL
TECHNOLOGY AND CLINICAL PHARMACY**

Time Allotted : 3 Hours

Full Marks : 70

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

GROUP – A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for any *ten* of the following :
10 × 1 = 10

- i) Dendrimers are used in
 - a) solid phase synthesis
 - b) solution phase synthesis
 - c) particle size determination
 - d) acid base titration.
- ii) Indicator variable is used in
 - a) HQSAR study
 - b) Free Wilson Approach
 - c) 6D QSAR study
 - d) 3D QSAR study.

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[Turn over



- iii) To sort records we use
- a) ORDER BY clause
 - b) HAVING clause
 - c) GROUP clause
 - d) none of these.
- iv) How do you communicate with RDBMS ?
- a) Relational algebra b) Relational calculus
 - c) SQL d) None of these.
- v) A dashed oval in an ER diagram represents which attribute ?
- a) Derived b) Composite
 - c) Stored d) Multivalued.
- vi) A software using molecular dynamic approach is
- a) Scrodinger b) AMBER
 - c) SYBIL d) AutoDock.



vii) The name of a docking software is

- a) AutoDock
- b) InStat
- c) Ab Initio
- d) Lehninger.

viii) In the relational model, the columns of the table are known as

- a) Domains
- b) Tuples
- c) Attributes
- d) Schema.

ix) A query within a query is called as

- a) Subquery
- b) New query
- c) Parent query
- d) None of these.

x) The logical tables of data extracted from existing tables are known as

- a) Records
- b) Views
- c) Queries
- d) None of these.

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xi) Language for accessing and manipulating the data is known as

- a) DDL
- b) DML
- c) SQL
- d) None of these.

xii) Example of a relational DBMS is

- a) MS-Office
- b) UNIX
- c) Windows-7
- d) Oracle.

GROUP - B
(Short Answer Type Questions)

Answer any *three* of the following.

$3 \times 5 = 15$

2. Write a short note on 3 tier architecture.
3. Mathematically prove that the value of the correlation coefficient always lies within -1 to $+1$.

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4. Assume a relation

Student {std_id, roll, name, address, city}

Find out all super keys. Which of them are candidate keys ?

5. Define Cartesian product of two sets. Find the Cartesian product of two sets $A = \{ 2, 5, 6, 10, 15 \}$ and $B \{ 3, 5, 7, 9, 13 \}$. 2 + 3
6. Enlist the various advantages of combinatorial synthesis over conventional synthesis.

GROUP - C

(Long Answer Type Questions)

Answer any *three* of the following. 3 × 15 = 45

7. What is normalization ? State 1NF, 2NF, 3NF and BCNF with suitable examples. 3 + (4 × 3)
8. Write a brief note on Hansch analysis. Why is non-linearity observed while plotting lipophilicity against biological activity ? What is Ab initio method ? What is Meyer-overton Hypothesis ? Write a brief note on solid phase synthesis.

5 + 2 + 2 + 2 + 4

9. What are the advantages of DBMS over file system ? What is DBMS ? What is the difference between data and information ? Define a) primary key b) super key. What are Schema and instances ?



10. For the given Table "employee" :

Emp_id	Name	Address	Salary
E101	SUJOY	DELHI	50000
E102	BINITA	KOLKATA	60000
E103	SHYAMAL	DELHI	30000
E108	ATIN	MUMBAI	40000
E109	SUBRATA	KOLKATA	60000

Write the following SQL queries :

- Show all employees with address "DELHI"
- Show all employees with salary greter than 30000 and less than 60000.
- Show the average salary of employees with address "DELHI".
- Show addresses of all employees with name starting with 'K'.
- Show the total number of employees.

5 × 3

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11. Dissolution profile of aceclofenac sustained release tablet is given as % released versus time in the following table :

Time in hour	1	2	3	4	5	6	7	8
% Aceclofenac released	5	8	12	18	26	35	48	62

- a) Calculate the linear regression equation of Y (% Aceclofenac released) on X (time in hour).
- b) Calculate the correlation coefficient between X and Y.

8 + 7

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