	Utech
Name:	
Roll No. :	A Special (VX) working 2nd Explaint
Invigilator's Signature :	•••••

CS/B.PHARM(NEW)/SEM-6/PT-610A/2012

2012

COMPUTER APPLICATION IN PHARMACEUTICAL TECHNOLOGY & 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:

 $10 \times 1 = 10$

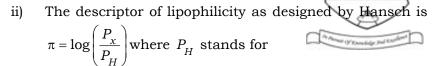
i) In a database table *tb_students* three fields are there : *roll_num*, *name* and *age*.

Identify the SQL statement that will fetch the names of the students having age above 16 years.

- a) SELECT roll_num, name FROM tb_students
- b) SELECT name, age FROM tb_students ORDER BY age
- c) SELECT name FROM tb_students WHERE age > 16
- d) SELECT name FROM tb_students WHERE age > 16 years.

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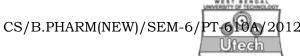
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- a) partition coefficient of substituted compound
- b) partition coefficient of unsubstituted compound
- c) partition coefficient of hydrogen
- d) partial pressure of substituted compound.
- iii) In QSAR the biological activity of a compound is usually expressed by
 - a) biological activity produced by a certain concentration of the drug
 - b) potency (expressed by 1/C) where C is the concentration of the drug required to produce a fixed biological activity
 - c) log *P*, where *P* is the partition coefficient of the drug in octanol/water system
 - d) none of these.
- iv) In Computer Aided Drug Design 'Ligand-based approach' is employed when
 - a) the structure of the receptor is unknown to the investigator
 - b) the structure of the receptor is known to the investigator
 - c) the structure of the drug molecule is unknown
 - d) the structure of the drug molecule is known.
- v) With a SQL Data Definition Language (DDL) we cannot do by which one of the following tasks?
 - a) Create table
 - b) Declare the type of each field
 - c) Create the integrity constraints
 - d) Query information from the database.

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- vi) A command that lets you change one or more fields in a record is
 - a) insert

b) modify

c) lookup

- d) none of these.
- vii) The most open source DBMS is
 - a) Microsoft SQL Server 1
- o) Microsoft Access
- c) MySQL d) Oracle. viii) One of the causes of the failure of the file system is
 - a) data availability
- b) fixed record
- c) sequential record
- d) lack of security.
- ix) The correlation coefficient between two variables x and y is
 - a) $\frac{\operatorname{cov}(x,y)}{\sigma_x \sigma_y}$
- b) $\frac{\cos(x,y)}{\sigma_x + \sigma_y}$
- c) $\frac{\operatorname{cov}(x,y)}{\sigma_x \sigma_y}$
- d) 0.
- x) Update the database mean
 - a) revisiting the database structure of schema
 - b) revisiting the file structure
 - c) changing one or more database
 - d) normalization of database.
- xi) Which of the following levels of abstraction involves the views of data?
 - a) External level
- b) Conceptual level
- c) Physical level
- d) None of these.

GROUP - B

(Short Answer Type Questions)

Answer any *three* of the following.

 $3 \times 5 = 15$

- 2. a) Define coefficient of determination.
 - b) Prove that if two variables x & y are independent then they are uncorrelated. 2 + 3
- 3. Describe the three level of architecture of a database system.

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- 4. Define and discuss data constraints. What is a cascading update? What is a SQL view? 2 + 2 + 1
- 5. Write about Fujita Ban method in drug design.
- 6. Write the basic structure of SQL SELECT, INSERT, UPDATE and DELETE query with a common example in each case.

GROUP - C

(Long Answer Type Questions)

Answer any *three* of the following. $3 \times 15 = 45$

- 7. Write a short note on Rational Drug design (RDD). What are descriptors in QSAR? Discuss how Hansch Analysis is carried out to predict biological action of drugs. 6 + 2 + 7
- 8. Discuss general methodology involved in molecular modeling and thus discuss energy minimization. Name two QSAR/docking softwares. Write the advantages and disadvantages of QSAR and combinatorial chemistry in the area of drug discovery. 8 + 2 + 5
- 9. a) Compare and contrast 2D and 3D QSAR.
 - b) Write in detail about 3D QSAR study.
 - c) Write a note on solution phase parallel synthesis.

4 + 6 + 5

- 10. a) Write in detail about the various descriptors used in 2D QSAR study.
 - b) Write a note on different structure elucidation methods used in solid phase synthesis. 10 + 5
- 11. a) Write an account on the pharmacophore mapping in drug designing.
 - b) Write an account on the Virtual screening and database searching in QSAR.
 - c) Write an account on Homology modelling in drug design. 5 + 5 + 5

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