UNIVERSITY OF THE PUNJAB
B.A. / B.Sc. Part – II
Supplementary Examination – 2018

Roll No. ....

Subject: Computer Studies-II

PAPER: A (Database Managt Systems, System & Networks Administ.)

TIME ALLOWED: 2 Hrs.

MAX. MARKS: 50

Attempt this Paper on Separate Answer Sheet.

Attempt any FOUR Question All questions carry equal Numbers

Q3 Identify entities, attributes and relationships, Also draw an Entity Relationship Diagram (ERD) for the following Hospital. Use the following requirements and take your own assumptions (if needed) (Marks:12.5)

Hospitals are the essential part of our lives providing best medical facilities to people suffering from different ailments. It is necessary for the hospitals to keep track of its day to day record of its patients, doctors, nurses and other medical staff that keep the hospital running successfully and smoothly.

But keeping the track of all the activities and their records on the paper is very cumbersome and error prone. It is also very inefficient and time taking process. A Hospital consists of different departments each supervised by a head, each department has its own unique name and location. Each department offers its services to various patients. Record of patient is to be kept for future purposes. Hospital has its own laboratory and medical pharmacy for quick response in some critical situations.

Here are some Pin Points about Hospital:
* A hospital provides medical services to the patients
* Patients are categorized into IN Patient and OUT Patient
* Each patient is assigned a unique ID
* Patient record keeps track of the diagnosis and information about the patient
* At the time of discharge patient report is prepared

Q4 Define the following (Marks:12.5)

* Referential Integrity Constraint
* SELECT, FROM and WHERE Clause of SQL Statement
* Database Schema
* Boyce Codd Normal Form
* Candidate Key

Q5 Normalize the following "Sale Metro Store" Relation up to 3rd Normal form but step by step, show each intermediate resultant table with its data. (Marks:12.5)

Sale Metro Store

Od No	Od_Date	Cust_Name	Cust_Add	Prod_ID	Prod_Name	Prod_Price	Prod_Qty	Amount
1	12-3-11	Saad	England	F39	Fan	750	3	7050
				A23	A.C	1200	4	
2	22-01-97	Atif	London	C97	Chair	85	2	170
3	22-01-97	Usman	China	A23	A.C	1200	2	2400
4	22-01-97	Saad	England	A23	A.C	1200	2	2400
5	15-7-12	Saad	England	F39	Fan	750	3	7050
				A23	A.C	1200	4	

(P.T.O.)

Q6 (Marks:12.5)

Differentiate preemptive and nonpreemptive scheduling algorithms and also discuss any two types of each scheduling algorithm.

Q7 (Marks:12.5)

Define the following

- Virtual Memory
- Page Fault
- Second Chance replacement algorithm

- Cascading Termination
- Medium Term Scheduler

Q8 (Marks:12.5)

Please discuss briefly, how do the layers of the TCP/IP protocol suite correlate to the layers of the OSI Model?

Subject: Computer Studies-II TIME ALLOWED: 1 Hr.
PAPER: A (Database Managt Systems, System & Networks Adminst.) MAX. MARKS: 20

Attempt this Paper on this Question Sheet only.
Please encircle the correct option. Division of marks is given in front of each question.
This Paper will be collected back after expiry of time limit mentioned above.

Q1) Choose the most appropriate option for the following statements and write on the provided answer sheet. (Please write only correct options, no need to write whole Answer). (Marks:10)

1. Which of the following are characteristic(s) of an RDBMS?

A. It cannot use SQL B. Queries are impossible on individual or groups of tables
C. Data are organized in a series of two-dimensional tables each of which contains records for one entity
D. Both B & C E. None of them

2. Allowable values in attribute is called

A. Domain B. Relationship C. Cardinality D. Degree

3. In SQL, which of the following is not a data Manipulation Language Statement?

A. DELETE B. SELECT C. UPDATE D. CREATE

4. The result of a SQL SELECT statement is a(n) _____ .

A. Wizard B. Form C. File D. Table

5. A Database Table can contains duplicate values

A. True B. False C. Statement is not clear

6. Creating a foreign-key constraint between columns of two tables defined with two different data types will produce an error.

A. True B. False C. Statement is not clear

7. A relation is considered a:

A. Column B. Tuple C. Two-dimensional table D. Three-dimensional table

8. Which group function does not ignore null values?

A. Avg() B. Count(*) C. Sum() D. None of them

9. In an E-R diagram relationship is represented by

A. Circles B. Rectangles C. Ellipse D. Diamond shaped box

10. CREATE TABLE statement is a ....Statement.

A. DDL B. DML C. DCL D. DRL

(P.T.O.)

Q2) Choose the most appropriate option for the following statements and write on the provided answer sheet. **(Please write only correct options, no need to write whole Answer). (Marks:10)**

1. Wasted space within a partition is called ....

A) Internal Fragmentation   B) Wasted Partition
C) Internal Partition   D) Wasted Fragmentation

2. In .... transmission, the channel capacity is shared by both communicating devices at all times.

A) Simplex   B) Half-duplex   C) Full-duplex   D) Half-simplex

3. In a batch environment a new process is created in response to the submission of a job

A) True   B) False   C) Statement is not clear

4. A ....is the physical communication pathway that transfers data from one device to another.

A) Node   B) Link   C) Point   D) None of them

5. A process is in a Running state, if it is not allocated to a CPU but is ready to run.

A) True   B) False   C) Statement is not clear

6. Which layer links the network support layers and user support layers?

A) Session layer   B) Data link layer
C) Transport layer   D) Network layer

7. In _____ OS, the response time is very critical.

A) Multitasking   B) Batch   C) Online   D) Real-time

8. Which OSI layer provides the services to user?

A) Application   B) Session   C) Presentation   D) Data Link

9. Which technique was introduced because a single job could not keep both the CPU and the I/O devices busy?

A) Time-sharing   B) Spooling   C) Preemptive scheduling   D) Multiprogramming

10. An optimal scheduling algorithm in terms of minimizing the average waiting time of a given set of processes is _____.

A) FCFS scheduling algorithm   B) Round robin scheduling algorithm
C) Shortest job- first scheduling algorithm   D) None of the above