NCSL207

G. H. Raisoni College of Engineering, Nagpur

(An Autonomous Institution under UGC act 1956)

Sixth Semester B. E. (Computer Science & Engineering.)

Summer Examination - 2015

Database Management System

Time: 3 hrs.] **[Max. Marks: 80**

Instructions to Candidate:

1) **Solve any three question from Section A and any three question from Section-B**
2) All questions carry marks as indicated.
3) Assume suitable data wherever necessary.
4) Due credit will be given to neatness and adequate dimensions.
5) Illustrate your answer wherever necessary with the help of neat sketches.

SECTION - A

1.	(a)	What is DBMS? Discuss the Architecture of DBMS. What are the components of DBMS? Explain in brief.	7
	(b)	Describe various disadvantages of file system compare to Data base management system	6
2.	(a)	Draw E-R diagram for Hospital management system and covert into set of table schema.	7
	(b)	What is data independence? Explain the difference between physical and logical data Independence with example.	7
3.	(a)	What are anomalies in database design? How can we solve it?	6
	(b)	What are the different types of integrity constraints. Explain referential integrity constraints.	7
4.	(a)	Compare physical and logical database models.	6
	(b)	Design a relational database for a university registrar's office. The office maintains data about each class, including the instructor, the number of students enrolled, and the time and place of the class meetings. For each student–class pair, a grade is recorded.	7
5.	(a)	What is Relational Algebra? Define Relational Algebra Operation cross product with example	6
	(b)	Explain the purpose and application of DBMS.	7

SECTION - B

6.	(a)	What is normalization? What is redundancy? Compare 1NF and 2NF with example.	7
	(b)	What is join? Explain various types of joins with example	6
7.	(a)	Explain strict two phase locking with it's advantage and disadvantages.	7
	(b)	List the ACID properties. Explain the usefulness of each and Explain following Term with suitable example (1)Primary Key (2) Candidate Key (3) Super Key	7

8. (a) What is deadlock? When it is occurs and how to avoid it ? 6

(b) Why concurrency control is needed in transactions processing? Explain in details. 7

9. (a) Explain BCNF with example. 6

(b) Explain conflict serializability with example. 7

10. (a) We have following relations: 6
Supplier(S#,sname,status,city)
Parts(P#,pname,color,weight,city)
SP(S#,P#,quantity)

Answer the following queries in SQL.

(i) Find name of supplier for city = 'Delhi'.
(ii) Find suppliers whose name start with 'AB'
(iii) Find all suppliers whose status is 10, 20 or 30.
(iv) Find total number of city of all suppliers
(v) Find s# of supplier who supplies 'red' part.
(vi) Count number of supplier who supplies 'red' part.

(b) what is Functional Dependency? Explain lossless decomposition 7

NCSL404

G. H. Raisoni College of Engineering, Nagpur

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Sixth Semester B. E. (Computer Science & Engineering)

Summer Examination - 2015

Computer Networks

Time: 03 hrs.] **[Max. Marks: 80**

Instructions to Candidate:

1) All questions carry marks as indicated.
2) Answer **THREE** questions from **Section A** and **THREE** questions from **Section B.**
3) Assume suitable data wherever necessary.
4) Due credit will be given to neatness and adequate dimensions.
5) Illustrate your answer wherever necessary with the help of neat sketches.

Section - A

1. (a) Distinguish between a connection oriented and connectionless service with example. 6

   (b) What are principal design issues of OSI model. 7

2. (a) Explain different network topologies along with its features. 6

   (b) What is broadband ISDN? Explain the architecture of ISDN along with technology used in it. 8

3. (a) Explain pure ALOHA and slotted ALOHA. 6

   (b) Explain following CSMA schemes: 7
   i) Non persistent CSMA
   ii) 1-Persistent CSMA
   iii) P- Persistent CSMA

4. (a) Explain Go Back –N sliding window protocol in detail.Also give its merits and demerits. 8

   (b) What is Hamming distance? Give Hamming distance for following codewords. 5
   i) d(10000.01000)
   ii) d(10101,10010)

5. (a) Explain IEEE 802.11 standard for wireless LAN. 6

   (b) Write a detailed note on guided and unguided transmission media. 7

Section - B

6. (a) What is optimality principle. Explain shortest path routing in detail. 6

   (b) What are adaptive and non-adaptive routing algorithm? Compare flow based routing with distance vector routing. 7

7. (a) What is congestion? What are congestion control algorithms? Explain congestion prevention policies. 6

(b) Explain Leaky Bucket algorithm in detail. What is subnet? Explain IP protocols. 7

8. (a) Explain the different service primitives used by transport layer. 6

(b) Differentiate between TCP and UDP. 7

9. (a) Explain IPV4 in detail. 7

(b) Explain following terms; 6
i) Hop by Hop choke packets
ii) Traffic Policing

10. Write short notes on; (**Any Two**) 14
i) Bluetooth Architecture
ii) Wi-Fi
iii) Piconet and scatternet