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Total No. of Ouestions: 111

[Total No. of Printed Pages : 4]

### EG-212

## B.E. III Semester (CGPA) CSE **Examination 2018**

### DATABASE MANAGEMENT SYSTEM

Paper - CS-304

Time Allowed: Three Hours

[Maximum Marks: 60

Note: Total No. of questions 11. Question 1 is compulsory. Attempt one question (including all parts) from each unit. Assume missing data, if any.

Q.1. Explain the following questions in brief.

 $5 \times 2 = 10$ 

- Define Schemas
- Functions of DBA
- What is Metadata?
- What is Generalization / Specialization?
- **RDBMS**

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### Unit - 1

Q.2. a) Explain the following.

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- Aggregation
- Strong and Weak entity set
- b) Write the difference between Database system and file system.

OR

- Compare different types of database models.5 O.3. a)
  - Construct an E-R diagram for a hospital with a set of patients and a set of medical doctors. Associate with each patient a log of the various tests and examinations conducted?

### Unit - II

- Q.4. a) Define domain integrity constraint entity integrity constraint and referential integrity constraint.
  - b) What is entity and attribute? Explain the entity types.

OR

- Q.5. a) Explain Network Data Model with its advantages and disadvantages.
  - Define Super key, Candidate key, Primary key and foreign key.

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Represent the natural join operation of the relational algebra as a combination of Cartesian product, selection and projection operation.

> What is Query Processing? Explain the steps involve in Query Processing.

OR

Explain the following:

QUEL

OBE

Differentiate between relational calculus and relational algebra.

### Unit - IV

What is normalization? Explain 1NF and 2NF in brief.

> Consider the following relation: CAR\_SALE (Car#, Date\_sold, Salesman#, Commission% Discount amt) Assume that a car may be sold by multiple salesmen, and hence {Car#, Salesman#} is the primary key. Additional dependencies are Date\_Sold-Discount\_amt and Salesman#→Commission% Based on the given primary key, is this relation is INE 2NF or 3NF? Why or why not? How would you successively normalize it completely?

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- Explain Multivalued dependencies and also describe 4NF with appropriate example. 5
  - Consider the relation schema R (P. O. R.S) and the functional Dependencies PO-R.  $R \rightarrow S$  and  $S \rightarrow P$  holds on R. List all the keys of relation R.

### Unit - V

- Q.10. a) Explain concurrency control and recovery in distributed database management system. 5
  - b) What is Distributed Database? Explain its security mechanism.

### OR

- Q.11. a) Compare the deferred modification and immediate modification technique of the log based recovery scheme for concurrent transactions? Why and how check points are used to perform such log-based recovery. 5
  - Define a Schedule. Differentiate between serial and serializable schedule.



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EKS-202

B.E. III Semester (CGPA) CSE Exam. 2017

Total No. of Printed Pages: 3

# **DATABASE MANAGEMENT SYSTEM** Paper: CS-304 Time Allowed: Three Hours Maximum Marks: 60 Note: Attempt all questions. All questions carry equal marks. Q.1. (a) What is DBMS and what are component of DBMS? What are the advantages of DBMS over file oriented approach. b) Explain the concept of physical data independence and its importance in database. Differentiate between two tier and three tier client/server architecture. b) What is the difference between procedural DML and nonprocedural DML. Draw an ER diagram for a small marketing company Q.2. database. Assume suitable data. What is entity and attribute? Explain the entity types.6

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otal No. of Questions

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a) Differentiate between relational calculus and Relational algebra? b) Explain the join operator, its relevance and its various a) Discuss the different techniques for optimising the queries. Consider the relations; City (city-name, state) Hotel (name, address) City-hotel (hotel-name, city-name, owner) answer the following queries in relational algebra: Find the names and address of hotels in Agra. List the name of cities which have no hotel. Prove that a relation which is in 4NF must be in BCNF. b) Explain non loss decomposition and functional dependencies with example. Consider the universal relation  $R = \{A, B, C, D, E, F, G, H, I\}$ and the set of functional dependencies  $F = \{(A, B) \rightarrow C, A \rightarrow (D, E) B \rightarrow F, F \rightarrow (G, H), A \rightarrow F, A \rightarrow (G, H), A \rightarrow F, B \rightarrow (G, H), A \rightarrow$  $D \rightarrow (1, J)$ What is the key for R? Decompose R into 2NF, then 3NF relations. Explain 3NF and BCNF with suitable example. **EKS-202** Contd....

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Explain the various data models briefly with an example,

Explain about integrity constraints.

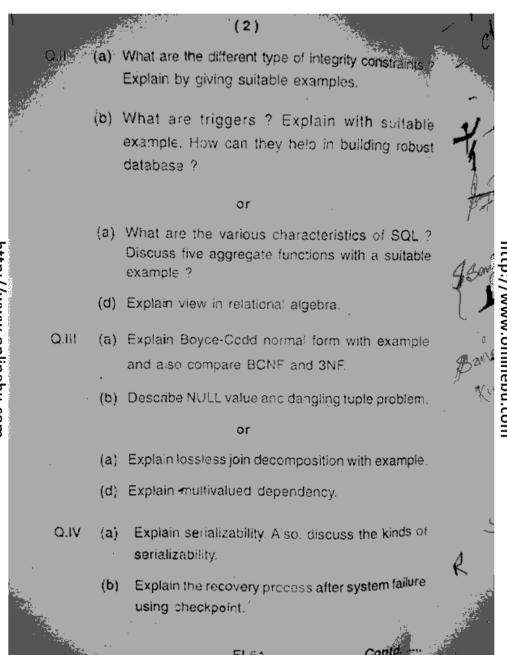
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EI-54

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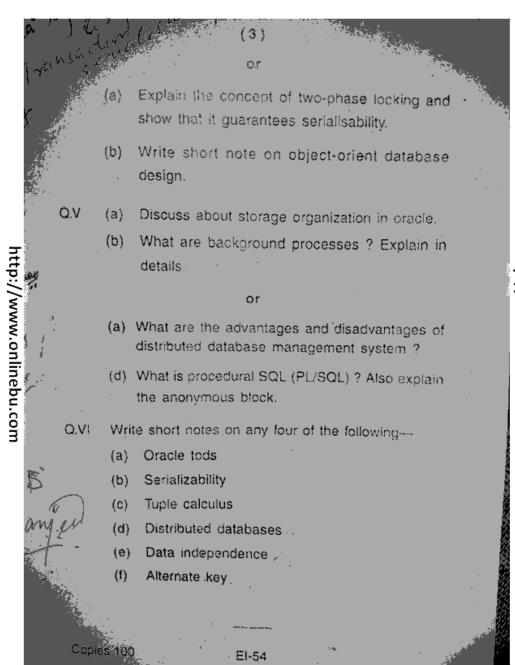
# B.E. (IIIrd Sem.) (CGPA) CSE Examination-2015 DATA BASE MANAGEMENT SYSTEM Paper: CS-304 Time Allowed: Three Hours Maximum Marks: 60 http://www.onlinebu.com Note: Attempt all question. There are internal choice of questions. All question carry equal marks. Q.I (a) Describe the generalized architecture of a database system. (b) What is the difference between a database schema and a database state ? or (a) Discuss main categories of data models.

tables.



EI-54

(d) Explain now an ER-schema is transformed to



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**EIS-54** 

B.E. (Illrd Sem.) (CGPA) (CSE) Examination-2015

# DATA BASE MANAGEMENT SYSTEM http://www.onlinebu.com

Paper: CS-304

Time Allowed: Three Hours Maximum Marks: 60

Note: Attempt all questions. Each question carry equal marks.

- Q.I (a) List differences between a file processing system and DBMS.
  - (b) Explain the difference between the two-tier and three tier client/server architecture.

or

- (a) Describe five main function of a database administrator.
- (b) Make comparison between the strong entity and weak entity.

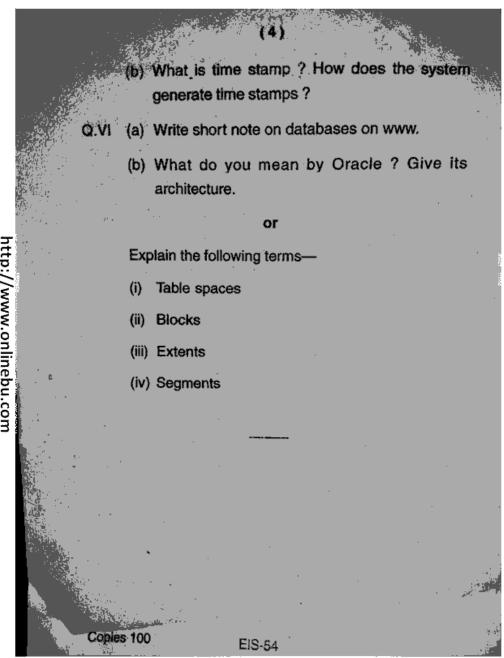
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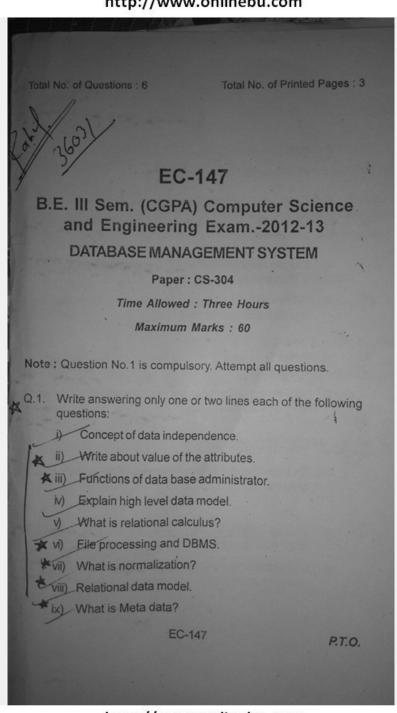
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# (2) Explain the network database model with an example. (b) Explain the following features of ORACLE-Sequence SQL loader (a) Discuss the candidate key, primary key, super key, composite key and alternate key. (b) Write short note on integrity constraints. (a) Explain the basic relational algebra operations Q.III with the symbol used and example for each. (b) What do you mean by the tuple relational calculus? What are its operations. Consider the relations-EMP (ENO, ENAME, AGE, BASIC) WORK\_ON (ENO, DNO) DEPT (DNO, DNAME, CITY) Express the following queries in SQL-**EIS-54** Contd. ....

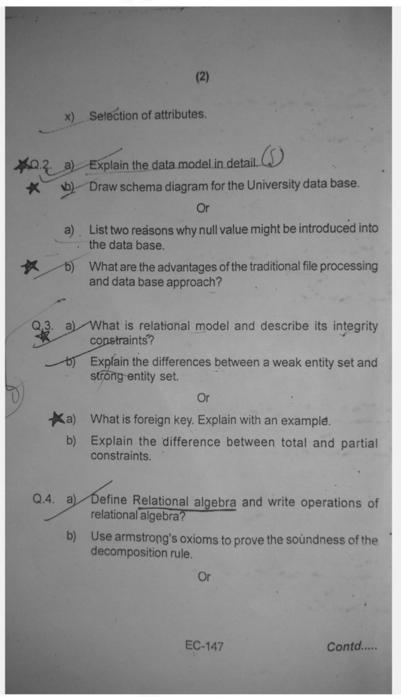
(3) Find names of employees whose basic pay is greater than average basic pay. Find the sum of the basic pay of all the employees, the maximum basic pay, the minimum basic pay and the average basic pay. (a) What do you mean by normalization? Explain BCNF and 3NF with suitable example. (b) What are the inference rule for functional dependencies? (a) Prove that a relation which is in 4NF must be in BCNF. (b) What is query optimization? Discuss various steps of optimization. (a) How does a DBMS represent a relational query evaluation plan? (b) Write short note on transaction processing. (a) Describe different types of transaction failures. What is meant by castastrophic failure?

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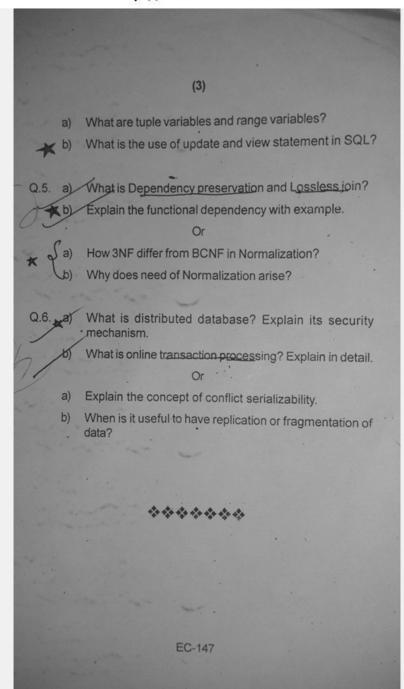




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EB-178

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EB-178

### B. E. (Third Semester) (CGPA) EXAMINATION, 2011-12

(Computer Science & Engg.)

### **DATABASE MANAGEMENT SYSTEM**

(CS - 304)

Time: Three Hours

Maximum Marks: 60

Note: Question No. 1 is compulsory. Attempt all questions.

- Write answer in only one or two lines each of the following questions:
  - (i) How architecture of the database can be viewed?
  - (ii) Write about the value of the attribute.
- (iii) Define tuple and attribute.
  - (iv) Explain high level data model.
- (v) What is Relational Calculus?
- · (vi) What is Data Dictionary?
- ₩ii) What is Normalization ?
- ★(viii) What is Foreign Key?
  - (ix) What is meta data?
- (x) What are the components of a Distributed Database System?

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Describe the architecture of DBMS in terms of three schema architecture.

**★**(b) Explain data model in detail.

Or

- (a) What are the functions of DBA and define data independence.
- (b) What are the advantage of the traditional file processing and database approach?
- 3. (a) What is relational model and describe its integrity constraints.
- (b) Differentiate relational and hirarchical model.

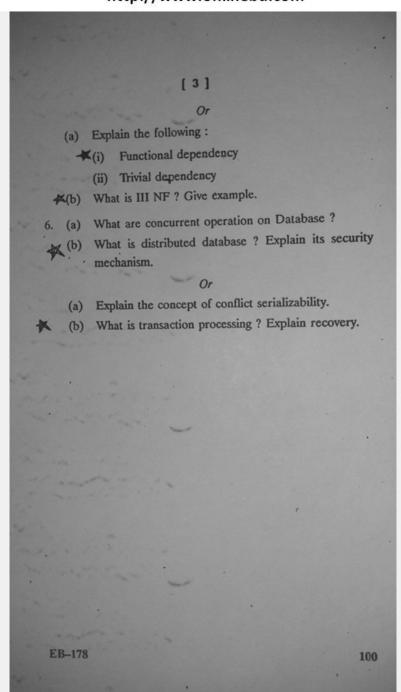
Or

- (a) Explain ER diagram and describe different type of keys used in database.
- (b) What is forign key? Explain with an example.
- (a) Define relational algebra and write operations of relational algebra.
  - (b) What are tuple veriables and range variables?

O

- (a) What is the use of update and view statement in SQL?
  - (b) Differentiate relational algebra and relational calculus.
- 5. (a) What is normalization and define normal forms.
  - (b) What is Dependency Preservation and Lossless join?

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