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86 (DMS)

[19HKMDCAO–M4S(O)19A]

MCA/MScIT 4th Semester (Old) Exam., 2019 (S)

DATABASE MANAGEMENT SYSTEM

[MCA/MScIT (S4) 13]

Full Marks : 50

Time : 2 hours

The figures in the margin indicate full marks for the questions

1. Answer any *five* from the following questions : 2×5=10

(a) What is the function of DBA?

(b) Define entity and attributes.

(c) How is domain calculus differ from tuple calculus?

(d) Define database audit.

(e) What are the ACID properties?

(f) List the two commonly used concurrency controlled techniques.

2. Answer any *two* from the following questions : 4×2=8

(a) Give the advantages of a 3-tier system over a 2-tier system.

(b) What are the different types of SQL commands?

(c) Explain any four levels of database security.

3. Answer any *two* from the following questions : 6×2=12

(a) Describe about transaction states with the help of state transition diagram.

(b) Describe briefly the two-phase locking techniques for concurrency control. Also write the advantages of two-phase locking techniques.

(c) Explain the different types of dependencies with the help of examples.

4. Answer any *two* from the following questions : 10×2=20

(a) Define normalization. Explain INF, 2NF and 3NF using examples. 1+9=10

(b) Write the syntax for the following SQL commands and also provide an example each : 2½×4=10

(i) Create table command

(ii) Insert command

(iii) Delete command

(iv) Update command

(c) *(i)* Differentiate between the following : 2½×2=5

1. Simple and composite attributes
2. Stored and derived attributes

(ii) Construct an E-R diagram for an employee payroll system. 5

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