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2017

Part II 3-Tier

COMPUTER SCIENCE

PAPER—IIA

(General)

Full Marks : 50

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Group—A

(System Analysis and Design)

Answer any *two* questions.   2×10

1. (a) What is life cycle model ? Briefly, describe the spiral model.   2+4

   (b) State the roles of system analyst.   4

2. (a) What is DFD ? Write the difference between DFD and Flow Chart. 2+3

   (b) What is structure chart ? Draw a DFD for Library Information System. 2+3

3. Write short note on (any *two*) :

   (a) Maintenace ;

   (b) SRS ;

   (c) Black-box-testing ;

   (d) Object oriented design.

4. (a) What is quality assurance ? Describe the level of quality assurance. 2+3

   (b) Describe the Requirement analysis and specification. Distinguish between Validation and Verification.

   $2\frac{1}{2}+2\frac{1}{2}$

Group—B

(Database Management)

Answer any *two* questions. $2 \times 12\frac{1}{2}$

5. (a) What are the main functions of DBA.   3

(b) Write the three level architecture of data abstraction.   3

(c) What is mapping cardinality ? Write the different mapping cardinality (entity relationship).

$2 + 4\frac{1}{2}$

6. (a) What do you mean by weak entity and strong entity ?   4

(b) Write the components of E-R diagram with symbol. $2\frac{1}{2}$

(c) Write select, project and inter section operation in Relational Operation with appropriate examples.   6

7. (a) Why we use normalization ?   2

(b) Explain 2NF and 3NF with examples. $5\frac{1}{2}$

(c) What is data model ? Define Network data model with a *suitable diagram.* $2 + 3$

8. Consider the Relation

Patient (P_id, P_name, P_age, P_city)

Write the following queries in SQL or relational algebra.

(a) Print the name of patient in ascending order of age.

(b) Print all information of P_id = 006.

(c) Print the details of all patients who live in the same city.

(d) List the names of patiest whose name begin with 'AB'.

(e) Print the name of patient who has age between 45 to 60.

$$2\tfrac{1}{2}\times5$$

Internal Assessment : 5

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Part-II   3-Tier

2017

COMPUTER SCIENCE

(General)

PAPER—IIB (Set-1)

(PRACTICAL)

Full Marks : 50

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

[Part–I]

Answer any *two* questions :   2×10

1. (a) Create the following database table :

   Student (Roll, Name, Address, Total Marks)

   (b) Enter at least five set of records.

   (c) Find the name of the student who has obtained highest marks.

(Turn Over)

(d) List the details of the students who are from 'Midnapore'.   2+2+3+3

2. (a) Create the following database table :

EMPLOYEE (Emp_ID, Name, Dept, Salary).

(b) Insert five set of records.

(c) Find the name of the employee from 'Finance' department who gets the lowest salary.

(d) Find the no. of employees department wise.

         2+2+3+3

3. (a) Create the following database table :

Course (Course ID, Name, Duration, Student Intake).

(b) Insert at least five set of records.

(c) Find the details of the course with shortest duration.

(d) List the names of courses in ascending order in terms of intake capacity.

         2+2+3+3

4. (a) Create the following database table :

Hotel (Hotel ID, Name, Address, No. of Rooms)

(b) Insert at least five set of records,

(c) Find the details of the hotels which are in 'Midnapore'.

(d) Display the name of the hotel with minimum no. of rooms.   2+2+3+3

[Part–II]

Answer any *two* questions :   2×10

5. Write a program in C to find the highest number from a set of ten integers.

6. Write a program in C to determine the sum of the following series.

$$\frac{1}{2} + \frac{2}{3} + \frac{3}{4} + \ldots + \frac{n-1}{n} \, .$$

7. Write a program in C to calculate ^nC_r.

8. Write a program in C to print the first n Fibonacci numbers.

9. Write a program in C to determine the sum of digits in an integer.

10. Write a program in C to print all the prime numbers in a given range.

Viva-Voce — 05

Practical Note Book — 05

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