

NEW

2015

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.

Illustrate the answers wherever necessary.

Group — A

(System Analysis and Design)

(Marks : 20)

Answer any two questions.

2×10

1. (a) What is System analysis ? What are the role of System analyst ? 2+3
- (b) What is Documentation ? What are the different types of documentations generated during the development of a software for a System ? 2+3

(Turn Over)

2. (a) What is DFD ? Discuss different type of symbols used in DFD. 1+2
- (b) What is logical DFD and physical DFD ? 3
- (c) Draw a DFD of Library Management System. 4
3. (a) Write the purpose of structure chart. Write the different type of structure chart symbol. 2+4
- (b) Briefly describe the three levels of quality assurance. 4
4. Write short notes (any two) : 2×5
- (a) System Analyst.
- (b) Decision tree.
- (c) Maintenance.
- (d) Black box testing.

Group — B
(Database Management)

(Marks : 25)

Answer any two questions : 12½ × 2

5. (a) What is normalization? What are the benefits of normalized database? 3+3
- (b) What is BCNF? Explain with example. 4
- (c) "All Primary Keys are the Super Key but all Super Keys are not Primary Key" — Justify it. 2½
6. (a) Write the advantages of DBMS. What are the main functions of a DBA? 3+4
- (b) What are Physical and Logical data independence? 3
- (c) Write the components of ER diagram. 2½
7. (a) What is mapping cardinalities? Describe the different type of mapping cardinalities with example. 2+4
- (b) Write the difference between Sequential and Indexed sequential file organisation with example. 4
- (c) What is foreign key? Give example. 2½

8. Consider the relation :

Book_detail (Isbn_no, Book_name, Book_author, Publisher, year_of_publish, price)

Write the following queries in SQL or Relational Algebra :

$$2\frac{1}{2} \times 5$$

- (i) Print all the books which is published by "TMGH" publication in the year 2014.
- (ii) Print the price of the book which name is "DBMS" and author is "KORTH".
- (iii) Print the publisher of the book which name is "DBMS" and author is "KORTH".
- (iv) Find the books whose price is less than Rs. 500/-.
- (v) Find all the books which published in the year of 2010.

[Internal Assessment — 5 Marks]

NEW
Part-II 3-Tier
2015
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. Create the database of 'Employee' which have the following field :

<i>ename</i>	<i>eid#</i>	<i>esal</i>	<i>dept.</i>
Ram	e141	25000	Accounts
Shyam	e425	12000	Clerk
Smith	e4251	20000	Cashier
John	e452	2000	Official

Perform the following operation :

- (i) Enter above record.
- (ii) Find the employee name whose name starts with 'S'.
- (iii) Find the employees whose salary is more than 10,000. 5+2+3

(Turn Over)

2. Create the following database of 'Stud' with following fields :

<i>Stud_id</i>	<i>roll</i>	<i>name</i>	<i>address</i>
St001	001	aaa	xyz
St002	002	bbb	wxy
St003	003	ccc	par
St004	004	ddd	mno

Perform the following operation :

- (i) Enter above record.
 - (ii) Find only name of all student.
 - (iii) Find the student name whose address is 'wxy'.
- 5+2+3

3. (a) Create the following database 'Department' which have following fields :

<i>dept_name</i>	<i>teacher_name</i>	<i>no.-of-stud</i>	<i>estd.</i>
Math	Dr. Ram	80	1980
Physics	Dr. Shyam	100	1990
Bengali	Dr. Smith	100	2000
English	Dr. Lee	100	2000
Geography	Dr. Das	100	1995

Perform the following operation :

- (i) Enter above record.
- (ii) Find the teacher name of the Physics dept.
- (iii) Find the total number of students of all department.

5+2+3

4. Create the database of 'Library' which have following fields :

<i>Book_id</i>	<i>Publisher_name</i>	<i>Book_name</i>	<i>Price</i>
B004	PHI	VB.Net	375
B006	Gita Press	Ramayana	800
B116	Univ. Press	My Sql	400
B447	Gita Press	Amrita Katha	100

Perform the following operation :

- (i) Enter above record.
- (ii) Find the bookname with book_id "B116".
- (iii) Find all books name in the library.

$$5 + 2\frac{1}{2} + 2\frac{1}{2}$$

[Part-II]

Answer any *two* questions.

2×10

1. Write a program to calculate the product of the digits of an integer number.
2. Write a program to display your last name first.
3. Write a program that calculate factorial of a number using recursion.
4. Write a program to join two string.

5. Write a program to transpose the following matrix :

$$\begin{bmatrix} 5 & 6 & 3 \\ 3 & 6 & 1 \\ 0 & 2 & 4 \end{bmatrix}$$

6. Write a program to generate n non-Fibonacci series.
7. Write a program to display as following :

```

      *
    * * *
  * * * * *
* * * * * * *

```

8. Write a program that display name as following pattern :
- Sourav Ganguly as S. Ganguly.
9. Write a program to reverse a string without using function.

10. Write a program that calculate the following series :

$$1 + \frac{1}{2^2} + \frac{1}{3^2} + \frac{1}{4^2} + \frac{1}{5^2} + \dots + \frac{1}{n^2}$$

11. Write a program to check whether a number is armstrong or not.
12. Write a program to generate prime number series upto n.

Practical Note Book — 05

Viva-Voce — 05
