

B.N.BANDODKAR COLLEGE OF SCIENCE,THANE(WEST)

T.Y.B.Sc. Preliminary Examination, Feb. 2011

APPLIED COMPONENTS II :Computer Programming And System Analysis

Duration:3 hours

Max.Marks:60

N.B. 1)All questions are compulsory.

2)Attempt either subquestions (a),(b) or subquestions (p),(q).

3)Figures to the right indicate full marks.

SECTION I

(DBMS AND RDBMS,SQL)

1(a).Answer the following. (6)

(i)Explain the terms DBMS, DDL,entity.

(ii)Discuss the disadvantages of a file system.

(b).Draw an E-R diagram for the following. (4)

(i)Movie has attribute director,name,release date.

(ii)Theatre has attributes capacity,location and screen.

(iii)Movie is shown in a theatre.

OR

1.(p).Answer the following. (6)

(i)What are the three levels of database architecture?

(ii)Discuss the different types of attributes.

(q)Convert the following table to first normal form. (4)

Student ID	Name	Class	Subject
277	Pinki Shah	F.Y.B.Sc.	Physics

			Chemistry Mathematics
222	Amol Joshi	S.Y.B.Sc.	Physics Mathematics
349	Anil Kumar	F.Y.B.Sc.	Physics Chemistry Botany

2.(a) Answer the following .

(6)

(i) Explain the following string functions:-

left(), reverse(), lower().

(ii) Give the query and output for the right outer join of tables on column NAME with respect to the following tables. Take SAL as right table.

EMP	
NAME	CITY
Rahul	Pune
Sanjay	Madras
Anjali	Delhi
Rujuta	Mumbai

SAL	
NAME	Salary
Rahul	80000
Sanjay	75000
Anjali	70000
Rujuta	79000

(b) Consider the table EMPLOYEE (ENO int ,ENAME char,SALARY float, APP_DATE datetime). Write any four of the following queries in SQL. (4)

(i) Give name and date of appointment of employees whose name strats with 'D'.

(ii) Give number of employees whose date of appointment is after 01\01\1986.

(iii) Give employee number and salary for employees whose salary is in between Rs.10,000 to Rs.20,000.

(iv) Find minimum,maximum and average salary for all employees.

(v) Delete the record of employee number 125.

OR

Q.2(p) Answer the following . (6)

i) Explain the following functions giving an example:

month(), avg(), upper().

(ii) Explain the order by clause with an example.

(q) Write SQL queries for the following. (4)

(i) Create a table PART with the following attributes:-

(Part number integer(10) (Primary key), Description varchar(15), stock integer).

(ii) Insert one meaningful record.

(iii) Decrease the stock by 25% in the record you have entered.

3(a) Answer the following . (6)

(i) Table BOOK1 has the attributes (BKNO ,BKNAME, BKAUTHOR) and BOOK2 with the attributes (BKNO,BKPRICE). Create joined view which has the attributes BKNO ,BKNAME and BKAUTHOR.

(ii) Explain the command which allows the user to add and delete columns in a table. Also give the command to delete a row from the table.

(b) Write SQL queries for the following: (4)

Create table VEHICLE having the attributes (CLIENT varchar(15), VEH_TYPE char (5), RATE integer ,ROUTE char(10)) with the following constraints.

(i) Make CLIENT as the primary key.

(ii) RATE has default value 5.

(iii) ROUTE should be unique .

(iv) VEH_TYPE should start from any of 'C' , 'B' , 'T' .

OR

Q3(p) Answer the following. (6)

(i) Explain how to create and delete an index on a database with examples.

(ii) Give one difference between the following

(I) ltrim() and rtrim().

(II) dateadd() and datediff()

(III) left outer join and right outer join.

(q) Table HIRE has the attributes (CAR_IDNO integer, CAR_HIRERATE integer, CAR_MODEL char(5), CAR_TYPE varchar(10)). Write SQL queries for the following: (4)

(I) Create a view with the columns CAR_IDNO, CAR_HIRERATE and CAR_TYPE for CAR_HIRERATE exceeding 18.

(II) increase the CAR_HIRERATE by 3 for all rows.

(III) Add a new column AMT of integer type to the table HIRE.

SECTION II

C PROGRAMMING

Q.4(a)(i) Answer the following in C. (3)

(I) State any one logical operator with its use.

(II) What is the purpose of structure?

(III) What is the use of default option in switch statement?

(ii) Write a short note on anyone of the following. (3)

(I) Basic data types in C.

(II) Header file.

(b) Write a program in C to accept positive integer n and print the product

$PR = 1 \times 2 \times \dots \times n$ if n is odd and sum $SUM = 1+2+3+\dots+n$, if n is even.

(4)

OR

Q4(p)(i) Answer the following in C . (3)

(I)What is the purpose of 'break' statement?

(II)Explain the use of escape sequence.

(III)Explain the operator &. (6)

(ii) Explain any one of the following in C . (3)

(I)Storage classes in C.

(II)scanf() function.

(q) Write a program in C to accept a character from keyboard and check whether it is vowel or not and print with an appropriate message. (4)

Q.5(a)(i)State one difference between the following in C. (3)

(I)while and do-while loop.

(II)array and structure

(III)'\\n' and '\\t' .

(ii)Write a switch statement in C for the following . (3)

To enter an integer x.If x is divisible by 3 then print the message 'DIVISIBLE BY 3 ' ,otherwise print the message ' NOT DIVISIBLE BY 3 ' .

(b)State the output of the following program segment giving step by step execution. (4)

```
int x=18, y=20, z=200, k;
```

```
k = z%y;
```

```
x+ = y++;
```

```
y+=k*2;
```

```
z=x>y? -60:75
```

```
printf(“%d\\t%d\\n%d\\t%d”,x,y,z,k);
```

OR

Q5(p)(i) State one difference between the following in C . (3)

(I)strcmp() and strcat().

(II)'a' and "a".

(III)auto and static variable.

(ii)Write an appropriate control statements that will examine the value of a floating point variable called temp and print one of the following message depending on the value assigned to temp. (3)

(I)ICE if the value of temp is less than zero.

(II)WATER if the value of temp lies between and including 0 and 100.

(III)STEAM if the value of temp exceeds 100

(q)State the output of the following program segment giving step by step execution. (4)

```
int i=0,x=0;
```

```
for(i=1;i<10;i+=3)
```

```
{
```

```
if(i%2==1)
```

```
x+=1;
```

```
else
```

```
x--;
```

```
printf("%d",x);} 
```

```
printf("\n x=%d",x);
```

Q.6(a)(i)Write a user defined function to calculate sum of digits of a three digit integer. (3)

(ii)Write an appropriate statements in C for the following (3)

(I)To declare an array called 'NAME' consisting of names of three students and assign the values RAM, SITA and GEETA to it.

(II)To declare a pointer variable pointing to character data type.

(III) To print "COMPUTER" on three different lines using a single print statement.

(b) Define a structure called hotel. It should have members that include

(4)

(I) a 40 element character array called h_name.

(II) a character variable h_grade.

(III) a floating point quantity h_room_charge.

(IV) an integer quantity h_no_room. Input two values of the variable taj and oberai of the type hotel and print them.

OR

Q6.(p)(i) Consider the following user defined function.

(3)

```
float area(float a, float b)
{
    return(a*b);
}
```

}. What will be the value of the following function calls.

(1) area(7,2.5) (2) area(2,3) (3) area(1.3,2.4).

(ii) Write a C program statement to assign a string "UNIVERSITY" to character variable x. using pointer arithmetic print alternate character starting from "U".

(3)

(q) Write a user defined function to find the sum of each row of 3 X 3 matrix.

(4)

