CLASS-XII (2022-23)

SAMPLE QUESTION PAPER - 2

Computer Science (083)

Maximum Marks: 70 **Time Allowed: 3 hours**

General Instructions:

1. This question paper contains five sections, Section A to E.
2. All questions are compulsory.
3. Section A have 18 questions carrying 01 mark each.
4. Section B has 07 Very Short Answer type questions carrying 02 marks each.
5. Section C has 05 Short Answer type questions carrying 03 marks each.
6. Section D has 03 Long Answer type questions carrying 05 marks each.
7. Section E has 02 questions carrying 04 marks each. One internal choice is given in Q35 against part c only.
8. All programming questions are to be answered using Python Language only.

Section A

1. What is the meaning of "HAVING" clause in SELECT query? **[1]**

   a) To filter out the row groups
   b) To filter out the column groups
   c) None of these
   d) To filter out the row and column values

2. User can write Python script using **[1]**

   a) SQL.connect library
   b) MySQL.connector library
   c) MySQL.connect library
   d) None of these

3. State true or false: **[1]**

   A given object may appear in a list more than once.

4. Which of the following is the fastest media of data transfer? **[1]**

   a) Fibre Optic
   b) Telephone Lines
   c) Untwisted Wire
   d) Co-axial Cable

5. Which of the following is mode of both writing and reading in binary format in file? **[1]**

   a) wb+
   b) wb
   c) w
   d) w+

6. Which of the following function calls can be used to invoke the below function definition? **[1]**

   def test(a, b, c, d)

   i. test(1, 2, 3, 4)

ii. test(a = 1, 2, 3, 4)

iii. test(a = 1, b = 2, c = 3, 4)

iv. test(a = 1, b = 2, c = 3, d = 4)

a) (iii) and (iv) b) (i) and (iii)

c) (i) and (iv) d) (ii) and (iv)

7. Consider the following SQL statement. What type of statement is this? **[1]**
SELECT * FROM employee

a) DDL b) DCL

c) Integrity constraint d) DML

8. To reflect the changes made in the database permanently, you need to run **[1]**
<connection>. _____ method.

a) done() b) reflect()

c) commit() d) final()

9. Which of the following is the use of function in python? **[1]**

a) Functions don't provide better modularity for your application b) Functions are reusable pieces of programs

c) you can't also create your own functions d) All of these

10. To read the next line of the file from a file object infi, we use **[1]**

a) infi.read() b) infi.readlines()

c) infi.readline() d) infi.read(all)

11. The terms Push and Pop are related to: **[1]**

a) Queue b) Stack

c) Both Queue and Stack d) None of these

12. In computer, process of superimposing a low frequency signal over a high frequency signal is called **[1]**

a) frequency modulation b) amplitude modulation

c) modulation d) demodulation

13. Suppose there is a list such that: l = [2, 3, 4]. **[1]**
If we want to print this list in reverse order, which of the following methods should be used?

a) reversed(I) b) list(reversed(I))

c) list(reverse[(I)]) d) reverse(I)

14. _____ are drawn using certain special purpose symbols. [1]

a) Flowchart b) Algorithm

c) Decision table d) Pseudocode

15. If value of checksum is 0, then message is [1]

a) accepted b) resend

c) rejected d) sent back

16. **Assertion (A):** When the comparison operator is directly applied to a series object, it returns a filtered result containing the value that returns true. [1]
Reason (R): Applying comparison operator on series works in vectorized way.

a) Both A and R are true and R is the correct explanation of A. b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false. d) A is false but R is true.

17. Which of the following is a unique name that identifies a particular website and represents the name of the server? [1]

a) Domain Name b) None of these

c) XML d) HTML

18. **Assertion (A):** To read from the openpyxl we need to install an openpyxl module using pip from the command line. [1]
Reason (R): openpyxl allows the user to perform calculations and add content that was not part of the original dataset.

a) Both A and R are true and R is the correct explanation of A. b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false. d) A is false but R is true.

Section B

19. What is broadband? [2]

20. To find the number is even or odd with compound statement. [2]

OR

If you are asked to label the Python loops as determinable or non-determinable, which label would you give to which loop? Justify your answer.

21. Write Python code to increase age of all employees by 1 year in the Employee table of database HTMdb with userid HRMan and password HRMANexe@pwd. [2]

22. What is the utility of built-in function help()? [2]

23. Answer: **[2]**

(i) What is Connection? What is its role?

(ii) Define the fetchmany([size]).

24. Write a Python program that accepts two integers from the user and prints a message saying if the first number is divisible by the second number or if it is not. **[2]**

OR

What is meant by insertion sort?

25. Identify the error in the following code: **[2]**

```
1. import pickle
2. data = ['one', 2, [3, 4, 5]]
3. with open('data2.dat', 'rb') as f:
4. pickle.dump(data, f)
```

OR

Your recipe uses some ingredients. Write a program to store the list of ingredients in a binary file.

Section C

26. Answer: **[3]**

(i) Find the output of the given questions

```
t = (4, 0, 'Hello', 90 'Two', ('One', 45), 34, 2)
```

i. t [5]

ii. t[3 : 7]

iii. t[1] + t[- 2]

(ii) Find the errors in following code and write the correct code.

```
Def s(x):
a = 'k'
print(a * x)
print(a * str(x))
for in [1, 2', 10 :
s(n)
```

i. Underline the corrections

ii. Write the reason!error next to it in comment form.

27. What do you understand by the local and global scope of variables? How can you access a global variable inside the function, if the function has a variable with the same name? **[3]**

28. Explain IS NULL clause in SQL. **[3]**

OR

Define UPDATE command of SQL with its basic syntax and also give one of its example.

29. Write a function to count the number of lines starting with a digit in a text file "Diary.txt". **[3]**

30. From the program code given below, identify the parts mentioned below : **[3]**

```
1. def processNumber(x):
2. x = 72
3. return x + 3
4.
5. y = 54
6. res = processNumber(y)
```

Identify these parts: function header, function call, arguments, parameters, function body, main program.

OR

Write a function called removeFirst that accepts a list as a parameter. It should remove the value at index 0 from the list.

Note that it should not return anything (returns None). Note that this function must actually modify the list passed in, and not just create a second list when the first item is removed. You may assume the list you are given will have at least one element.

Section D

31. Write a program to print a string in reverse order. **[5]**

32. Consider the following table EMPLOYEE. Write SQL commands for the following statements. **[5]**

Table: EMPLOYEE

ECODE	NAME	DESIG	SGRADE	DOJ	DOB
101	Abdul Ahmad	EXECUTIVE	S03	23-Mar-2003	13-Jan-1980
102	Ravi Chander	HEAD-IT	S02	12-Feb-2010	22-Jul-1987
103	John Ken	RECEPTIONIST	S03	24-Jun-2009	24-Feb-1983
105	Nazar Ameen	GM	S02	ll-Aug-2006	03-Mar-1984
108	Priyam Sen	CEO	SOI	29-Dec-2004	19-Jan-1982

i. To display the details of all EMPLOYEES in descending order of DOJ.

ii. To display NAME and DESIG of those EMPLOYEES, whose SALGRADE is either S02 or S03

iii. To display the content of all the EMPLOYEES table, whose DOJ is in between W-Feb-2006' and '08-Aug-2009'.

iv. To add a new row with the following : 19, 'Harish Roy', 'HEAD-IT', 'S02', '09-Sep-2007', '21-Apr-1983'

OR

Write SQL queries for (i) to (iv) and find outputs for SQL queries (v) to (viii), which are based on the tables:

DVD

DCODE	DTITLE	DTYPE
F101	Henry Martin	Folk
Cl 02	Dhrupad	Classical
C101	The Planets	Classical
F102	Universal Soldier	Folk
R102	A day in the life	Rock

MEMBER

MID	NAME	DCODE	ISSUEDATE
101	AGAM SINGH	R102	2017-11-30
103	ARTH JOSEPH	F102	2016-12-13
102	NISHA HANS	C101	2017-07-24

i. To display all details from the table MEMBER in descending order of ISSUEDATE.

ii. To display the DCODE and DTITLE of all Folk Type DVDs from the table DVD.

iii. To display the Dtype and number of DVDs in each DTYPE from the table DVD.

iv. To display all NAME and ISSUEDATE of those members from the table MEMBER who have DVDs issued (i.e., ISSUEDATE) in the year 2017.

v. SELECT MIN (ISSUEDATE) FROM MEMBER;

vi. SELECT DISTINCT DTYPE FROM DVD;

vii. SELECT D.DCODE. NAME, DTITLE: FROM DVD D, MEMBER M WHERE D.DCODE=M.DCODE;

viii. SELECT DTITLE FROM DVD WHERE DTYPE NOT IN ("Folk", "Classical");

33. Answer (i) & (ii) OR (iii) & (iv) **[5]**

(i) Write a function countmy() in Python to read the text file "Data.txt" and count the number of times "my" occurs in the file.
For example if the file contents are
My first book was Me and My Family.
It gave me chance to be known to the world.
The output of the function should be
No. of times "my" occur: 2

(ii) Consider the file poemBTH.txt given below.
God made the Earth;
Man made confining countries
And their fancy-frozen boundaries.
But with unfound boundLess Love

I behold the border Land of my India
Expanding into the World.
What output will be produced by following code fragment?

```
obj1 = open("poemBTH.txt", "r")
s1 = obj1.readline()
s2.readline(10)
s3 = obj1.read(15)
print(s3)
print(obj1.readline())
obj1.close()
```

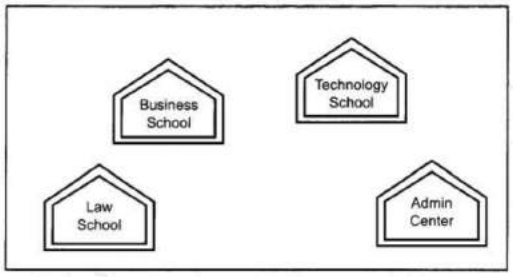
(iii) A text file "PARA.txt" contains a paragraph. Write a function that searches for a given character and reports the number of occurrence of the character in the file.

(iv) Write a Python program to find the longest word in file "status.txt". If contents of status.txt are Welcome to your one-step solutions for all your study, practice and assessment needs for various competitive & recruitment examinations and school segment. We have been working tirelessly for over a decade to make sure that you have best in class study resources because you deserve SUCCESS AND NOTHING LESS...
Output should be:
Longest word: examinations

Section E

34. **Read the text carefully and answer the questions:** **[4]**

Great Studies University is setting up its Academic schools at Sunder Nagar and planning to set up a network. The university has 3 academic schools and one administration centre as shown in the diagram below:



Center to center distances between various buildings is as follows:

Law School to Business School	60 m
Law School to Technology School	90 m
Law School to Admin Center	115 m
Business School to Technology School	40 m
Business School to Admin Center	45 m
Technology School to Admin Center	25 m

Number of Computers in each of the Schools/Center is as follows:

Law School	25
Technology School	50

Admin Center	125
Business School	35

(i) Suggest the most suitable place (i.e., Schools/Center) to install the server of this university with a suitable reason.

(ii) Suggest the most efficient connecting medium for connecting these Schools/center for wired connectivity.

(iii) Which device you will suggest to be placed/installed in each of these School's center to efficiently connect all the computers within these Schools/center?

OR

The university is planning to connect its admission office in the closest big city, which is more than 350 km from the university. Which type of network out of LAN, MAN or WAN will be formed? Justify your answer.

35. **Read the text carefully and answer the questions:** **[4]**

Consider the following tables EMPLOYEE and DEPARTMENT:

Table: EMPLOYEE

TCode	TName	DepCde	Salary	Age	JoinDate
15	Sameer Sharma	123	75000	39	01-Apr-2007
21	Raguvinder K	101	86000	29	11-Nov-2005
34	Rama Gupta	119	52500	43	03-Mar-2010
46	C R Menon	103	67000	38	12-Jul-2004
77	Mohan Kumar	103	63000	55	25-Nov-2000
81	Rajesh Kumar	119	74500	48	11-Dec-2008
89	Sanjeev P	101	92600	54	12-Jan-2009
93	Pragya Jain	123	32000	29	05-Aug-2006

Table: DEPARTMENT

DepCde	DepName	DepHead
101	ACCOUNTS	Rajiv Kumar
103	HR	P K Singh
119	IT	Yogesh Kumar
123	RESEARCH	Ajay Dutta

(i) Write SQL commands for the following statements:

i. To display all DepName along with the DepCde in descending order of DepCde.

ii. To display the average age of Employees in DepCde as 103.

(ii) Write SQL commands for the following statements:

i. To display the name of DepHead of the Employee named "Sanjeev P"

ii. To display the details of all employees who have joined before 2007 from the EMPLOYEE table.

(iii) Give the output of the following SQL queries:

i. SELECT COUNT (DISTINCT DepCde) FROM EMPLOYEE;

ii. SELECT MAX(JoinDate), MIN (JointDate) FROM EMPLOYEE;

SOLUTION

Section A

1. **(a)** To filter out the row groups
   Explanation: A HAVING clause is used to filter values from a group.
2. **(b)** MySQL.connector library
   Explanation: MySQL.connector library
3. **(a)** True
   Explanation: True, A given object may appear in a list more than once
4. **(a)** Fibre Optic
   Explanation: Fibre Optic
5. **(a)** wb+
   Explanation: wb+ mode opens a file for both writing and reading in binary format. It overwrites the file if the file exists. If the file does not exist, creates a new file for reading and writing.
6. **(c)** (i) and (iv)
   Explanation: (i) and (iv)
7. **(d)** DML
   Explanation: Select operation just shows the required fields of the relation. So it forms a DML.
8. **(c)** commit()
   Explanation: commit()
9. **(b)** Functions are reusable pieces of programs
   Explanation: Functions are reusable pieces of programs. They allow you to give a name to a block of statements, allowing you to run that block using the specified name anywhere in your program and any number of times.
10. **(c)** infi.readline()
    Explanation: readline() function reads a line from the file pointer position.
11. **(b)** Stack
    Explanation: In computer science, a stack is an abstract data type that serves as a collection of elements, with two main principal operations: push, which adds an element to the collection, and pop, which removes the most recently added element that was not yet removed.
12. **(a)** frequency modulation
    Explanation: frequency modulation is process of superimposing a low frequency signal over a high frequency signal.
13. **(b)** list(reversed(I))
    Explanation: The built-in function reversed() can be used to reverse the elements of a list. This function accepts only an iterable as an argument. To print the output in the form of a list, we use: list(reversed(I)). The output will be: [4, 3, 2].
14. **(a)** Flowchart
    Explanation: Flowchart
15. **(a)** accepted
    Explanation: A checksum is a value used to verify the integrity of a file or a data

transfer. In other words, it is a sum that checks the validity of data. Checksums are typically used to compare two sets of data to make sure they are the same.

16. **(d)** A is false but R is true.
    Explanation: Applying comparison operator on series works in vectorized way i.e applies this check on each element and then return true/ false for each element.
17. **(a)** Domain Name
    Explanation: Domain Name
18. **(b)** Both A and R are true but R is not the correct explanation of A.
    Explanation: To read from the openpyxl we need to install openpyxl module using pip in the command line. We can also read data from the existing spreadsheet using openpyxl. It also allows the user to perform calculations and add content that was not part of the original dataset.

Section B

19. Broadband is a transmission system capable of carrying many channels of communication simultaneously by modulating them on one of several carrier frequencies. Or in other words, Broadband is the transmission of wide bandwidth data over a high speed internet connection.

20.
```
n = int(input("Enter a number:"))
print("The number is ",n)
d = n%2
if (d == 0):
   print ("Remainder on division by 2 is :", d)
   print ("The number is an even number.")
else:
   print("Remainder on division by 2 is : ", d)
   print("The number is an odd number.")
```

Output

```
Enter a number:45
The number is 45
Remainder on division by 2 is: 1
The number is an odd number.
```

OR

The 'for loop' can be labelled as a determinable loop as the number of its iterations can be determined beforehand as the size of the sequence, it is operating upon.
The 'while loop' can be labelled as a non-determinable loop, as its number of iterations cannot be determined beforehand. Its iterations depend upon the result of a test-condition, which cannot be determined beforehand.

21.
```
import MySQLdb
db = MySQLdb.connect('localhost', 'HRMan', 'HRMANexe@pwd', 'HTMdb')
cursor = db.cursor()
sql = """UPDATE Employee set Age= Age+1
try:
db.execute(sql)
db.commit()
```

except:
db.rollback()
db.close()

22. When help() function is provided with a program-name or a module-name or a function name as an argument, it displays the documentation of the given argument. It also displays the docstrings written within its passed-argument's definition.
For example :
help(math) will display the documentation related to module math.
help(math.abs()) will display the documentation of the function abs of math module.
23. Answer:
    (i) A Connection (represented through a connection object) is the session between the application program and the database. To do anything with the database, one must have a connection object. For connection Python module PyMySQL is installed properly on your machine.
    (ii) fetchmany([size]) returns the number of rows specified by the size argument. When called repeatedly this method fetches the next set of rows of a query result and returns a list of tuples. If no more rows are available, it returns an empty list.

24. # Program that accepts two integers from the user and prints a message saying if the first number is divisible by the second number or if it is not:

```
x = int( input ("Enter first number: "))
y = int( input ("Enter second number: "))
if y == 0 :
print ("Wrong input. Second number cannot be zero")
exit(0)
if x % y ==0:
print(x, "is divisible by", y)
else:
print(x, "is not divisible by", y)
```

OR

This type of sorting is one of the simplest methods of sorting. This method is generally used for small set of data. Under this method, initially the first element is picked up in the unsorted part and is then appropriately inserted in the sorted part, this process will repeat till the final list is ordered accordingly.
Best case time complexity: O (n)
Worst case time complexity: O (n^2)

25. The file is opened in read mode and dump() function tries to write onto file, hence the error. So the line 3 should be changed to L:

```
with open ('data2.dat', 'wb') as f:
```

OR

```
import pickle
ingredients = ['cucumber', 'pumpkin', 'carrot', 'peas']
with open('recipe.dat', 'wb') as fout:
pickle.dump(ingredients, fout)
```

Section C

26. Answer:
(i) i. ('One', 45)
ii. (90, 'Two' , ('One', 45), 34)
iii. 34
(ii)
```
def s(x): # def should be in lowercase
    a = 'k'
    print(a*x)
    print(a + str(x)) # two strings cannot be used with * operator,
    for n in [1, 2, 10 ]: # but can use -f operator
    # (i) loop variable not defined
    # (ii) closing ] missing
    s(n) # incorrect indentation
```

27. A global variable is a variable that is accessible globally. A local variable is one that is only accessible to the current scope, such as temporary variables used in a single function definition.
A variable declared outside of all the functions or in global scope is known as a global variable. A global variable can be accessed inside or outside of the function whereas local variables can be used only inside of the function. If a function has a local variable name as a global variable, then in that function scope, the local variable will hide the global variable with the same name. We can access a global variable having the same name as a local variable by declaring its name with the keyword global, e.g., as global A. Global variables are declared outside any function, and they can be accessed (used) on any function in the program. Local variables are declared inside a function and can be used only inside that function. It is possible to have local variables with the same name in different functions.
28. If we want to search the column whose value is NULL in a table, then we use IS NULL clause.
Syntax

```
SELECT <column_name>
FROM <table_name>
WHERE <column_name> IS NULL;
```

OR

An UPDATE command is used to directly change or modify the value stored in one or more fields in a specified record.

Syntax

UPDATE table_name
SET columnl = valuel,
column2 = value2, ...
WHERE <condition>;

e.g. Consider the table PERSONS to update the address as Nissestien 67.

UPDATE PERSONS SET Address = 'Nissestien 67';

29. def CountFirstDigit():
count = 0
with open('Diary.txt',;r') as file_obj:
while True:
line = file_obj.readline()
if not line: break
if line[0].isdigit():
count = count+1
if count==0:
(print "No line in the file starts with a digit")
else:
(print "Number of lines starting with a digit =",count)
Function CountFirstDigit() returns the number of lines which starts with a digit in "Diary.txt" file.

30.

Function header	def processNumber(x) :	in line 1
Function call	processNumber (y)	in line 6
Arguments	y	in line 6
Parameters	x	in line 1
Function body	x = 72 return x + 3	in lines 2 and 3
Main program	y = 54 res = processNumber(y)	in lines 5 and 6

OR

def removeFirst (input_list):
"""This function will remove first item of the list"""
input_list.pop(0)
#pop removes and returns item of list
return

Section D

31. **To print a string in Reverse order:-**

```
def pushstack(stack, ch):
stack, append(ch)
top=len(stack)-1
return
def popstack (stack):
if isempty(stack):
return
else
top=len(stack)-1
for a in range(top, -1, -1)
print stack[a],
return
def isempty (stack):
if stack==[]:
else:
return True
else:
return False
#.....main.....
str=[]
top=None
str=raw_input("Enter a string")
while a in str:
pushstack(stk, str)
print "------ Reverse-------"
popstack(stk)
```

32. i. SELECT * FROM EMPLOYEE ORDER BY DOJ DESC ;

ii. SELECT NAME, DESIG
FROM EMPLOYEE
WHERE SGRADE IN('S02', S03') ;

iii. SELECT * FROM EMPLOYEE WHERE DOJ
BETWEEN '09-Feb-2006' AND '08-Aug-2009' ;

iv. INSERT INTO EMPLOYEE VALUES(19, 'Harish Roy ', 'HEAD-IT', 'S02', '09-Sep-2007','21-Apr-1983') ;

OR

i. SELECT * FROM MEMBER ORDER BY ISSUEDATE DESC

ii. SELECT DCODE, DTITLE FROM DVD WHERE DTYPE = 'Folk'

iii. SELECT DTYPE, COUNT(*) FROM DVD GROUP BY DTYPE

iv. SELECT NAME, ISSUEDATE FROM MEMBER, WHERE ISSUEDATE LIKE '2017%'

v. MIN (ISSUEDATE) 2016-12-13

vi. DISTINCT (DTYPE)
Folk
Classical
Rock

vii.

DCODE	name	DTITLE
R102	AGAM SINGH	A day in the life
F102	ARTH JOSEPH	Universal Soldier
C101	NISHA HANS	The Planets

viii. DTITLE
A day in the life

33. Answer (i) & (ii) OR (iii) & (iv)

(i)
```
def countmy():
    f=open("Data.txt", "r")
    count=0
    x=f.read()
    word=x.split()
    for i in word:
        if(i == "my"):
```

```
            count=count+1
        print("No. of times my occur:", count)
    countmy()
```

(ii) The above code raises an error as there has been no file object defined/created by the name s2, which is directly used in line 3. Therefore, the code will not give any output.

(iii)
```
def countchar():
    filename = "PARA.txt"
    count = 0
    c = raw_input("Enter the character to search for:")
    with open(fname, 'r') as file_obj:
    for line in f:
    for word in line:
    for char in word:
    if char.strip() == c.strip(): #remove spaces
    count=count + 1
    print("No. of occurrences of", c , "=", count)
```

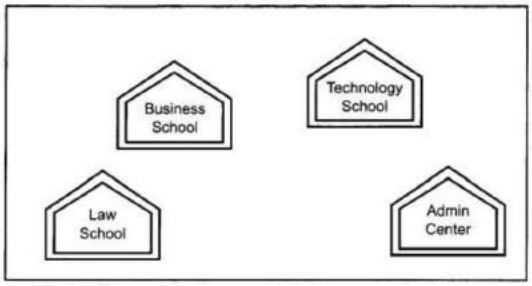
countchr() function returns the occurrence of the character entered by the user in the "PARA.txt file.

(iv)
```
def Longest():
    f=open("status.txt")
    words=f.read().split()
    max_len=len(max(words, key=len))
    for word in words:
        if(len(word)==max_len):
            print("Longest word:", word)
```

Section E

34. **Read the text carefully and answer the questions:**

Great Studies University is setting up its Academic schools at Sunder Nagar and planning to set up a network. The university has 3 academic schools and one administration centre as shown in the diagram below:



Center to center distances between various buildings is as follows:

Law School to Business School	60 m
Law School to Technology School	90 m
Law School to Admin Center	115 m
Business School to Technology School	40 m

Business School to Admin Center	45 m
Technology School to Admin Center	25 m

Number of Computers in each of the Schools/Center is as follows:

Law School	25
Technology School	50
Admin Center	125
Business School	35

(i) The most suitable place to install the server is Admin Centre because it has maximum number of computers. (using 80-20 rule).

(ii) Fibre optic cable

(iii)Switch

OR

WAN because LAN and MAN cannot span more than 100 km.

35. **Read the text carefully and answer the questions:**

Consider the following tables EMPLOYEE and DEPARTMENT:

Table: EMPLOYEE

TCode	TName	DepCde	Salary	Age	JoinDate
15	Sameer Sharma	123	75000	39	01-Apr-2007
21	Raguvinder K	101	86000	29	11-Nov-2005
34	Rama Gupta	119	52500	43	03-Mar-2010
46	C R Menon	103	67000	38	12-Jul-2004
77	Mohan Kumar	103	63000	55	25-Nov-2000
81	Rajesh Kumar	119	74500	48	11-Dec-2008
89	Sanjeev P	101	92600	54	12-Jan-2009
93	Pragya Jain	123	32000	29	05-Aug-2006

Table: DEPARTMENT

DepCde	DepName	DepHead
101	ACCOUNTS	Rajiv Kumar
103	HR	P K Singh
119	IT	Yogesh Kumar
123	RESEARCH	Ajay Dutta

(i) i. SELECT DepName, DepCde FROM DEPARTMENT ORDER BY DepCde DESC;

ii. Select AVG (Age) from EMPLOYEE WHERE DepCde= 103;

(ii) i. SELECT DepHead FROM DEPARTMENT WHERE EMPLOYEE.TName= "Sanjeev P" AND EMPLOYEE.DepCde = DEPARTMENT. DepCde;

ii. SELECT * FROM EMPLOYEE WHERE joinDate < '01-JAN-2007';

(iii) i. COUNT(DISTINCT DEPCDE)

4

ii.

Max (JoinDate)	Min (JoinDate)
03-Mar-2010	12-Jul-2004