CHAPTER 1 - BASIC COMPUTER ORGANIZATION

Q.1 Name the functional blocks of a digital computer.
Q.2 What is an Operating System?
Q.3 Differentiate between RAM and Hard Disk.
Q.4 What type of memory and storage were used in different generations of computer?
Q.5 How many space in bits/bytes occupy by following Memory Units?
   (i) Kilo Byte   (ii) Mega Byte   (iii) Byte   (iv) Tera Byte
Q.6 What is difference between Compiler and Interpreter?
Q.7 Compare Computers and Smart devices?
Q.8 What is the utility of these software:
   (i) disk fragmentor   (ii) backup software

CHAPTER 2 - DATA PRESENTATION - BASIC CONCEPT

Q.9 Explain decimal number system.
Q.10 What are the rules to convert a Decimal number into a Binary number?
Q.11 Briefly explain the Octal Number system.
Q.12 Convert 32110 to Binary.
Q.13 What is Unicode? What is its significance?

CHAPTER 3 - GETTING STARTED WITH PYTHON

Q.14 Who developed Python programming language and when was it developed?
Q.15 What is the difference between interactive mode and script mode in Python?
Q.16 Write any four features of Python.
Q.17 What will be the output of the following code:
   #My first program
   #print("Hello")
   print("Good Morning")
Q.18 Write any two name of IDE for python language.

CHAPTER 4 - PYTHON FUNDAMENTALS

Q.19 What is the difference between a keyword and an identifier?
Q.20 Identify the valid identifiers from following:
   f@name , as , _tax , roll_no , 12class , totalmarks , addr1
Q.21 What are literals? How many types of literals are available in Python?
Q.22 What are comments? In how many ways you can create multi-line comment in Python?
Q.23 What is the purpose of the following operators:
   **, //, is, not in, %
Q.24 Write a program to obtain two numbers and print their sum.
Q.25 Find the errors in following code fragment: (The input entered is XI)
   c=int(input("Enter your class"))
   print("Your class is",c)
Q.26 What is Dynamic Typing feature of Python?

CHAPTER 5 - DATA HANDLING

Q.27 What do you mean by data types? What are Python’s built-in core datatypes? Write one example for each.
Q.28 What do you understand by mutable and immutable objects?
Q.29 What does the modulus operator % do? What will be the result of 7.2 % 2.1 and 8 % 3?
Q.30 Consider below given expression, what will be the final result and final data types?
   (i) a, b = 3, 6    c = b / a   (ii) a, b = 3, 6    c = b // a   (iii) a, b = 3, 6    c = b % a
Q.31 What is atom? What is expression?
Q.32 Write a program to print the area of circle of radius 5.26 metres.
Q.33 Write the precedence of operators used in Python.
Q.34 What will be the output of the following code?

\[ x, y = 4, 8 \\
z = x / y * y \\
print(z) \]

CHAPTER - 6 CONDITIONAL AND ITERATIVE STATEMENTS

Q.35 What is a compound statement? Give example of a compound statement.
Q.36 Explain if...else statement with the help of an example.
Q.37 What are iteration statements? Name the iteration statements provided by Python.
Q.38 What is the significance of break and continue statements?
Q.39 What is pseudocode? How is it useful in developing logic for the solution of a problem?
Q.40 What is the similarity and difference between for and while loop?
Q.41 Write a program to accept three integers and print the largest of the three.(using if statement)
Q.42 Write a Python script to print Fibonacci series' first 20 elements. Some initial element of a Fibonacci series are:

\[ 0 \ 1 \ 1 \ 2 \ 3 \ 5 \ 8 \ldots \]

Q.43 Rewrite the following code fragments using for loop:

\[ \text{While num > 0:} \\
\text{print( num \% 10)} \\
\text{num = num / 10} \]

Q.44 Find the errors in the code given below and correct the code:

\[ \text{if n == 0} \\
\text{print(“zero”)} \\
\text{elif n == 1} \\
\text{print(“one”)} \\
\text{elif n == 2; \\
\text{print(“two”) \\
else n == 3; \\
\text{print(“three”)} \]

CHAPTER - 7 TEXT HANDLING

Q.45 On what principles, the strings are compared in Python?
Q.46 What do you understand by string slices?
Q.47 What is the utility of find() function?
Q.48 Write a program that reads a string and checks whether it is a palindrome string or not.
Q.49 What will be the output produced by following code fragments?

\[ x = “Hello” + \\
“to python” + \\
“world” \]

for char in x : 

y = char 

print(y, ‘:’, end=’ ‘)

CHAPTER - 8 LIST MANIPULATION

Q.50 Why are lists called mutable types?
Q.51 What are the different ways of creating lists?
Q.52 Write a program in python to find maximum element in the list entered by the user.
Q.53 Which functions can you use to add elements to a list?
Q.54 State two points of difference between pop( ) and remove( ) methods of a list?
Q.55 How can we update and delete list in python?
Q.56 How are dictionaries different from lists?
Q.57 What are the characteristics of python Dictionaries?
Q.58 Find the output of the following code:
   
```
   x= "hello world"
   print (x[ : 2], x[ : -2], x[-2 : ])
   print (x[ 6 ], x[2 : 4])
   print (x[ 2 : -3], x[-4 : -2])
```
Q.59 What do you understand by ordered collection and unordered collection? Give example.
Q.60 What are the dictionary keys?

Q.61 What are NumPy Arrays?
Q.62 Given a list L = [3,4,5] and an ndarray N having elements 3,4,5, what will be the result produced by:
   
   (a) L * 3   (b) N * 3   (c) L + L   (d) N + N

Q.63 Define (i) axis  (ii) rank
Q.64 What are Array Slices?
Q.65 Write similarity and difference between ndarrays and lists.
Q.66 Predict the output of the following code fragment:
   
```
   x=[1,2,3,99,99,3,2,1]
   x1, x2, x3=np.split(x,[3,5])
   ```

Q.67 What is DBMS?
Q.68 What is data redundancy?
Q.69 Define the following:
Q.70 If R1 is a relation with 5 rows and R2 is a relation with 6 rows, how many rows will the Cartesian product of R1 and R2 have?
Q.71 What is the difference between DDL and DML?
Q.72 Name some table maintenance commands.
Q.73 What is the function of SAVEPOINT in MySQL?

Q.74 What is a datatype? Name some datatypes available in MySQL.
Q.75 Miss Neelam started working in MySQL. She wants to start working in SCHOOL database which is already available. How can she make SCHOOL database as her currently working database?
Q.76 What is the difference in the output of SELECT statement if we write the keyword ALL in place of DISTINCT?
Q.77 (a) You have the following table CUSTOMER. Identify the required data types for each attribute.

<table>
<thead>
<tr>
<th>Cust_ID</th>
<th>Customer Identification Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cust_Name</td>
<td>Customer Name</td>
</tr>
<tr>
<td>Cust_Add</td>
<td>Customer Address</td>
</tr>
<tr>
<td>Bill_No</td>
<td>Customer bill Number</td>
</tr>
<tr>
<td>Bill_Date</td>
<td>Customer bill Date</td>
</tr>
</tbody>
</table>
(b) For the given **STUDENT** table, write the queries for the following:

<table>
<thead>
<tr>
<th>ROLLNO</th>
<th>SNAME</th>
<th>GENDER</th>
<th>DOB</th>
<th>HOUSEID</th>
<th>FEES</th>
<th>HOBBY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1001</td>
<td>RAVI</td>
<td>M</td>
<td>2002-01-20</td>
<td>10</td>
<td>850</td>
<td>HOCKEY</td>
</tr>
<tr>
<td>1002</td>
<td>AMAR</td>
<td>M</td>
<td>2001-03-20</td>
<td>11</td>
<td>550</td>
<td>SOCCER</td>
</tr>
<tr>
<td>1003</td>
<td>SUJA</td>
<td>F</td>
<td>2004-11-25</td>
<td>10</td>
<td>650</td>
<td></td>
</tr>
<tr>
<td>1004</td>
<td>RUMA</td>
<td>F</td>
<td>2003-12-31</td>
<td>12</td>
<td>650</td>
<td>SKATING</td>
</tr>
<tr>
<td>1005</td>
<td>SIJU</td>
<td>M</td>
<td>2002-09-11</td>
<td>13</td>
<td>550</td>
<td></td>
</tr>
<tr>
<td>1006</td>
<td>ARUNA</td>
<td>F</td>
<td>2001-12-20</td>
<td>10</td>
<td>750</td>
<td>HOCKEY</td>
</tr>
<tr>
<td>1007</td>
<td>HYDER</td>
<td>M</td>
<td>2004-09-18</td>
<td>11</td>
<td>850</td>
<td>SOCCER</td>
</tr>
<tr>
<td>1008</td>
<td>RAINA</td>
<td>M</td>
<td>2005-08-21</td>
<td>12</td>
<td>850</td>
<td>SOCCER</td>
</tr>
</tbody>
</table>

i) Write SQL query to display the details of STUDENT table in the descending order of the FEES.

ii) Write SQL query to display the SNAME, GENDER and FEES for all the students whose HOUSEID is either 10 or 11 or 13.

iii) Write SQL query to display the SNAME, FEES and HOBBY for all the students who do not have a hobby.

iv) Write SQL query to display the SNAME and GENDER for all the students who are paying fees in the range of 600 to 800.

v) Write SQL query to display the ROLLNO and SNAME for all the students whose SNAME is ending with ‘A’.

vi) Write SQL query to display the STUDENT details whose year of birth is 2002.

vii) Insert a new row with appropriate details.

**Q.78** Differentiate between CHAR and VARCHAR data types.

**Q.79** What will be the output of the following SQL commands:

a) Select concat("information", "technology")
b) Select instr("computer", "er")
c) Select truncate(465.4993, 2)
d) Select mod(5,2)
e) Select substr("information technology", -5)
f) Select dayofmonth(’2012-05-11’);
g) Select month(’2010-02-07’);

**Q.80** Write SQL statements for the following:

i) Display the length of the string "Informatics Practices".

ii) Display the position of "My" in "Enjoying MySQL".

iii) Display the name of current month.

iv) Display system date.

v) Display date after 10 days of current date.

**Q.81** Define function. Name some String and Numeric functions.

**CH-13 TABLE CREATION AND DATA MANIPULATION COMMANDS**

**Q.82** Write SQL command for creating a table **BANK** whose structure is given below.

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Data type</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acc_No</td>
<td>Number</td>
<td>10</td>
</tr>
<tr>
<td>Cust_Name</td>
<td>Varchar</td>
<td>30</td>
</tr>
<tr>
<td>Cust_Addr</td>
<td>Varchar</td>
<td>35</td>
</tr>
<tr>
<td>Phone</td>
<td>Number</td>
<td>10</td>
</tr>
<tr>
<td>Acc_Type</td>
<td>Char</td>
<td>15</td>
</tr>
<tr>
<td>Date_Open</td>
<td>Date</td>
<td></td>
</tr>
<tr>
<td>Balance</td>
<td>Number</td>
<td>10,2</td>
</tr>
</tbody>
</table>
Q.83 a) Write an SQL command for creating a table STUDENT whose structure is given below:

<table>
<thead>
<tr>
<th>FIELD NAME</th>
<th>DATATYPE</th>
<th>SIZE</th>
<th>CONSTRAINT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rno</td>
<td>Number</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Class</td>
<td>Varchar</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Percentage</td>
<td>Number</td>
<td>5,2</td>
<td>&gt;0 and &lt;=100</td>
</tr>
<tr>
<td>Projno</td>
<td>Number</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Address</td>
<td>Varchar</td>
<td>30</td>
<td>Default Hyderabad</td>
</tr>
</tbody>
</table>

b) Write an SQL statement to create a Primary Key constraint to the “Rno” column of the above table.

c) Write a SQL command to add following column in above table.

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Size</th>
<th>Constraint</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proj_Grade</td>
<td>Varchar</td>
<td>5</td>
<td></td>
<td>Project grade of the students</td>
</tr>
</tbody>
</table>

Q.84 Differentiate between Primary Key constraint and Foreign Key constraint of table with example.

Q.85 What are the differences between ALTER and UPDATE commands of SQL?

Q.86 What is a constraint? Name some constraints that you can apply to enhance database integrity.

Q.87 Study the given HOSPITAL table and write the DML queries that follow.

<table>
<thead>
<tr>
<th>PID</th>
<th>PNAME</th>
<th>DOA</th>
<th>DOD</th>
<th>WARD</th>
<th>FEES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1001</td>
<td>RAVI</td>
<td>2008-01-10</td>
<td>2008-01-20</td>
<td>SURGERY</td>
<td>2000</td>
</tr>
<tr>
<td>1002</td>
<td>AMAR</td>
<td>2008-02-21</td>
<td>2008-03-20</td>
<td>MEDICINE</td>
<td>1500</td>
</tr>
<tr>
<td>1003</td>
<td>SUJA</td>
<td>2009-10-02</td>
<td>2009-11-25</td>
<td>SURGERY</td>
<td>2500</td>
</tr>
<tr>
<td>1004</td>
<td>RUMA</td>
<td>2007-12-12</td>
<td>2007-12-31</td>
<td>OPTHALMO</td>
<td>1800</td>
</tr>
<tr>
<td>1005</td>
<td>SIJU</td>
<td>2008-08-10</td>
<td>2008-09-11</td>
<td>MEDICINE</td>
<td>2800</td>
</tr>
<tr>
<td>1006</td>
<td>ARUNA</td>
<td>2007-10-10</td>
<td>2007-12-20</td>
<td>NEURO</td>
<td>3500</td>
</tr>
</tbody>
</table>

i) Write a query to increase the FEES by 200 for all patients whose WARD is SURGERY.

ii) Write a query to delete all the rows from the HOSPITAL table whose WARD is NEURO.

Q.88 Give one word answer to the following questions:

i. An attribute that is a Primary key of one table and used as non-key attribute in another table.

ii. A SQL command used to display the structure of a table in MySQL

iii. A SQL command used to remove duplicate rows from a SELECT query.

iv. An SQL query that uses SET command to make modification on table data.

Q.89 What is the error in the following statement:

a) UPDATE emp;
b) DELETE ALL FROM TABLE EMPL;
c) DROP EMPL;
d) MODIFY TABLE EMP ADD (EMAIL VARCHAR(20));

Q.90 Shubham wants when he does not enter a value for the column, automatically a value should be inserted in it. Which constraint he should use for the same?

CHAPTER-14 CYBER SAFETY

Q.91 What is cyber safety? Why is it important?

Q.92 What are cookies? How are they used by websites to track you?

Q.93 What is identity fraud?

Q.94 What is digital footprint? Why is it so important?

Q.95 What should you do to protect your identity on internet?

CHAPTER-15 ONLINE ACCESS AND COMPUTER SECURITY

Q.96 What is a computer virus? How can it affect your computer?

Q.97 What is the need for secure passwords?

Q.98 What are denial-of-service and Sweeper attacks?

Q.99 What is (i) Authentication (ii) Authorization? Why are these two used together?

Q.100 What is the significance of a firewall in a computer’s security scheme?