

ARMY PUBLIC SCHOOL, RANIKHET  
HALF YEARLY EXAMINATION-2020  
CLASS-XII  
COMPUTER SCIENCE

MM: 70

TIME: 3 hrs

**General Instructions:**

- ✓ *All Questions are compulsory.*
- ✓ *Marks are indicated against each question.*
- ✓ *Write Answer Number, before attempting any question.*

**SECTION-A**

Q1. (a) Which of the following is valid logical operator in Python: [1]

(i) % (ii) : (iii) == (iv) or

(b) Write the type of tokens from the following : [1]

(i) for (ii) Num

(c) Name the Python Library modules which need to be imported to invoke the [1]  
following functions: (i) exp( ) (ii) randint ( )

(d) Rewrite the following code in python after removing all syntax error(s). [2]  
Underline each correction done in the code.

```
Num = input("Number:")  
Sum = 0  
for i in range(10,Num,3)  
Sum+=i  
    if i%2=0:  
  
print ( i*2)  
Else:  
print ( i*3 print Sum)
```

(e) Find and write the output of the following python code: [1]

```
a=10
def call():
    global a
    a=15
    b=20
    print(a)
```

```
call()
print(a)
```

(f) Observer the following python code and write the output of the given code: [2]

```
def makenew(mystr):
    newstr = ""
    count = 0
    for i in mystr:
        if count%2 != 0:
            newstr = newstr + str(count)
        elif i.islower():
            newstr = newstr + i.upper()
        else:
            newstr = newstr + i
        count += 1
    newstr = newstr + mystr[:1]
    print("The new string is:", newstr)
makenew("sTUdeNT")
```

(g) Observe the following program and answer the question that follows: [2]

```
import random
x = 3
N = random.randint (1, x)
for i in range (N):
    print( i, "#", i + 1)
```

(1) What is the minimum and maximum number of times the loop will execute? (2) Find out, which line of output(s) out of (i) to (iv) will not be expected from the program?

- i. 0#1      ii. 1#2      iii. 2#3      iv. 3#4

**Q2) (a)** Declare a variable of dictionary with some data. [1]

**b)** Write a Recursive function in python **BinarySearch(Arr,I,R,X)** to search the given element **X** to be searched from the List **Arr** having **R** elements,where **I** represents lower bound and **R** represents the upper bound. [2]

- c) Write a function in python, **MakePush(Package)** and **MakePop(Package)** to add a new Package and delete a Package from a List of Package Description, considering them to act as push and pop operations of the Stack data structure. [4]
- d) Write a function to sort a list through insertion sorting. [3]
- e) What do you understand by docstring? Explain with example. [2]
- f) What is Python Module and Package? [2]
- g) How are following import statements different? [2]
- h) import X    ii) from X import \*    iii)from X import a,b,c
- i) Write a function display(cities) that takes a list of cities as a parameter and print only those cities which are beginning with alphabet 'M' only. [2]

Q3. a) Write a program to create a csv file "report.csv". This file should store Adm No, Name and Marks of Students, till user inputs 'N' in answer of Question "Add More Records?". [3]

b) Write a method/function **DISPLAYWORDS()** in python to read lines from a text file **STORY.TXT**, and display those words, which are less than 4 characters. [3]

c) What is CSV file? [1]

d) #Q4 Write a function definition to increase the price of all the products by 10 percent. The data is stored in the binary file stock.dat in the given format: [4]

```
[ {'icode':100,'Name':'Pencil','Price':10},{'icode':101,'Name':'Pen','Price':90},
{'icode':102,'Name':'Colors','Price':150} ]
```

e) Explain the uses of functions tell() and seek(). [1]

### SECTION-B

Q4 a) Write a python code to increase the salary of all History department employees by Rs. 5000 in the teacher table of **Ranikhet** database. [3]

#### Table: Teacher

<u>EmpCode</u>	<u>EmpName</u>	<u>Department</u>	<u>Salary</u>
100	Amit Gupta	History	55,000
101	Deepak	Computer	65,000

b) Write commands in SQL for (i) to (iv) and output for (v) and (vi) [6]

**Table : Store**

<u>StoreId</u>	<u>Name</u>	<u>Location</u>	<u>City</u>	<u>NoOfEmployees</u>	<u>DateOpened</u>	<u>SalesAmount</u>
S101	Planetfashion	KarolBagh	Delhi	7	2015-10-16	300000
S102	Trends	Nehru Nagar	Mumbai	11	2015-08-09	400000
S103	Vogue	Vikas Vihar	Delhi	10	2015-06-27	200000
S104	Superfashion	Defence Colony	Delhi	8	2015-02-18	450000
S105	Rage	Bandra	Mumbai	5	2015-09-22	600000

a) To display name, location, city, SalesAmount of stores in descending order of SalesAmount.

- b) To display names of stores along with SalesAmount of those stores that have 'fashion' anywhere in their store names.
- c) To display Stores names, Location and Date Opened of stores that were opened before 1st March, 2015.
- d) To display total SalesAmount of each city along with city name.
- e) SELECT distinct city FROM store;
- f) SELECT Name, length (name), left (name, 3) FROM Store where NoOfEmployees<3;

Q5.a) Consider the following table:

[2]

**Table: Product**

Pcode	Pname	Qty	Price
100	Tooth Paste	100	78.0
101	Soap	500	20
102	Talc Powder	50	45.0
103	Washing Pdr	30	98.0

- (i) What is the degree and cardinality of the above table.
- (ii) Write a SQL command to add a new column sup\_code of char(20) size in the table.

- b) Write the difference between where and having clause. [2]
- c) What is foreign key? [2]
- d) Write the difference between UNIQUE and PRIMARY KEY Constraints. [2]
- e) Which keyword is used to select rows containing columns that match a wildcard pattern? [1]
- f) Write the difference between CHAR and VARCHAR data types. [1]
- g) Which clause cannot be used with aggregate functions? [1]
  - (a) group by
  - (b) Select
  - (c) where
  - (d) Both (a) and (c)

**SECTION-C**

- Q6. a)** Name two server side scripting language and two client side scripting language. [1]
- b)** Which protocol is used in creating a connection with a remote machine? [1]
- c)** Identify the Domain name and URL from the following : [1]  
<http://www.income.in/home.aboutus.html>
- d)** Expand the following : [2]  
 GPRS , IMAP, CDMA, WiMax
- e)** What is the difference between packet & message switching? [1]
- f)** Hindustan Connecting World Association” is planning to start their offices in four major cities in India to provide regional IT infrastructure support in the field of

Education & Culture. The company has planned to set up their head office in New Delhi in three locations and have named their New Delhi offices as “Sales Office”, “Head Office” and “Tech Office”. The company’s regional offices are located at “Coimbatore”, “Kolkata” and “Ahmedabad”. A rough layout of the same is as follows: [4]

**Approximate distances between these offices as per network survey team is as follows:**

Place From	Place To	Distance
Head Office	Sales Office	10 KM
Head Office	Tech Office	70
Meter Head Office	Kolkata Office	1291 KM
Head Office	Ahmedabad Office	790 KM
Head Office	Coimbatore Office	1952 KM

**In continuation of the above, the company experts have planned to install the following number of computers in each of their offices:**

Head Office	100
Sales Office	20
Tech Office	50
Kolkata Office	50
Ahmedabad Office	50
Coimbatore Office	50

(i) Suggest network type (out of LAN, MAN, WAN) for connecting each of the following set of their offices:

- Head Office and Tech Office
- Head Office and Coimbatore Office

(ii) Which device will you suggest to be procured by the company for connecting all the computers within each of their offices out of the following devices?

- Modem
- Telephone
- Switch/ Hub

(iii) Which of the following communication media, will you suggest to be procured by the company for connecting their local offices in New Delhi for very effective and fast communication?

- Ethernet Cable
- Optical Fiber
- Telephone Cable

(iv) Suggest a cable/ wiring layout for connecting the company’s local offices located

