PRE-BOARD EXAMINATION – 2 (JANUARY – 2020)

CLASS: XII   **COMPUTER SCIENCE**   **Time: 3 hrs**

MAX. MARKS : 70

General Instructions:

- *All questions are compulsory.*

- *Question paper is divided into 4 sections A, B, C and D.*

  - *Section A : Unit-1*
  - *Section B : Unit-2*
  - *Section C: Unit-3*
  - *Section D: Unit-4*

SECTION-A

Q1. a. Predict the output for the following.   1
```
import math as m
print (m . pow (2, m.sqrt (25) ) )
```
   a) 5.0   b) 32.0
   c) 33554432   d) None

b. How many times is the world 'HELLO' printed in the following statement?   1
```
s='python rocks'
for ch in s[3:8]:
    print('HELLO')
```

   a) 6 Times   b) Infinite Loop
   c) No output   d) 5 Times

c. Name the Python Library modules which need to be imported to invoke the following functions: 1
   (i) find ( )   (ii) ceil ( )

d. Rewrite the following code in python after removing all syntax error(s). Underline each correction   2
   done in the code.
```
DEF execmain():
    val = int ("Enter any Number : ")
      Sum = 0
      for I in range (10, val, 3)
          Sum += i
          if i % 2 = 0:
              print i * 2
```

```
        Else:
                print i * 3
        execmain()
```

e.   Find and write the output of the following python code: 2
```
def cal():
    val = [20, 'M', 40, 'A', 10, 'N']
    freq = 0
    sum = 0
    cat = ' '
    for i in range(1,6,2):
        freq = freq + i
        sum = sum + val [i-1]
        cat = cat + val [i] +  '#'
        print(freq, sum, cat)
cal( )
```

f.   Find and write the output of the following python code: 3
```
a.    m = [ ]
      for i in range(3):
          m.append(i)
      print(m)
b.    t=('a','b','c','a','b')
      print(max(t))
      print(min(t))
c.    x = 'computer science'
      print (x[:2], x[:-2], x[-2:])
```

g.   What are the possible outcome(s) executed from the following code? Also specify the maximum and   2
      minimum values that can be assigned to variable **num**.

```
import random
string = "CBSEONLINE"
num = random.randint(0,3)
n = 9
while string[n] != 'L':
   print(string[n] + string[num] + '#', end = ' ')
   num = num + 1
   n = n – 1
```

   (i) ES#NE#IO#   (ii) LE#NO#ON#
   (iii) NS#IE#LO#   (iv) EC#NB#IS#

Q2. a.   How are list different from tuple?   1

   b.   What is the difference between interactive mode and script mode in Python?   1

   c.   What is the output of the following code :   1
```
L = ['MY LAB', [1,2,3], 'Y', (3,4,6), 'TABLE', 50]
print (L[2:3] )
```

d. The user defined function findname(name) is to delete phone number from a dictionary phonebook 1
on the basis of the name, where name is the key. Fill in the blanks to run the code to do the necessary
action.

```
def findname(name):
      if phonebook.has_key():
                   _____  # to delete the Phone No.
      else:
          print("Name not found")
      print("Phonebook Information")
      print("Name",'\t', "Phone number")
      for i in _____ : # to check the keys
          print(i, '\t',  phonebook[i])
```

e. What will be the output of the following code? 1

```
list1 = [3,8,1,6,13,28,29]
list1.insert(2,30)
print(list1)
```

(a) [3,8,2, 30, 1,6,13,28,29]   (b) [3, 8, 30, 1, 6, 13, 28, 29]
(c) Error   (d) [13, 18, 11, 16, 13, 18, 13, 3]

f. Find and write the output of the following python code: 2

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

g. Give the output from the given python code: 2

```
import matplotlib.pyplot as plt
year = [1960, 1970, 1980, 1990, 2000, 2010]
pop_pakistan = [44.91, 58.09, 78.07, 107.7, 138.5, 170.6]
pop_india = [449.48, 553.57, 696.783, 870.133, 1000.4, 1309.1]
plt.plot(year, pop_pakistan, color='g')
plt.plot(year, pop_india, color='orange')
plt.xlabel('Countries')
```

plt.ylabel('Population in million')
        plt.title('Pakistan India Population till 2010')
        plt.show()

OR

Write a Python Code to create a bar plot of scores by group and gender. Use multiple X values on the same chart for men and women.

    Sample Data:
      Men = (22, 30, 35, 35, 26)
      Women = (25, 32, 30, 35, 29)

h.   Write a function file_long( ) that accepts a filename and reports the file's longest line.   2

OR

Write a program that copies a text file ' source.txt ' into ' target.txt ' starting the lines with a ' @ ' sign.

i.   Write a Python recursive function that prints the first 'n' rows of Pascal's triangle.   3

OR

Write a recursive Python function to implement **binary search** in a list.

j.   Write a function in python, MakePush(Package) and MakePop(Package) to add a new Package and   4 delete a Package from a List of Package Description, considering them to act as push and pop operations of the Stack data structure.

OR

Evaluate the following Postfix expression using a stack and show the contents of the stack after execution of each operation.
      5, 11, -, 6, 8, +, 12, *, /

SECTION-B

Q3.   Questions 3 (a) to 3 (d) : Fill in the blanks

a.   _____ is a network utility program used to obtain information about internet servers.   1

b.   _____ network allows devices to communicate within a short range (approx. 5 metres) using wireless signals.   1

c.   _____ is a type of internet-based computing that provides shared computer processing resources   1 and data to computers and other devices on demand.

d.   The _____ refers to a sum of data bits calculated from digital data that is used to ensure the data   1 integrity at the receiver's end.

e.   **Give the full forms of the following:**   2
      i. MIME
      ii. IMAP
      iii. NFC
      iv. MX records

f. What is *demodulation*? How is it different from *modulation*?   2

g. i. What are the effects of *Network Congestion*?   3
    ii. Name the network tools used in the given situations:
        a. To test the speed of internet connection.
        b. To see the IP address associated with a domain name.

h. HiStandardTech Training Ltd. is a Mumbai based organization which is expanding its office set-up 4
    to Chennai. At Chennai office compound, they are planning to have 3 different blocks for Admin,
    Training and Accounts related activities. Each block has number of computers, which are required to
    be connected in a network for communication, data and resource sharing. As a network consultant,
    you have to suggest the best network related solutions for them for issues/problems raisedby them in
    (i) to (iv), as per the distances between various blocks/locations and other given parameters.
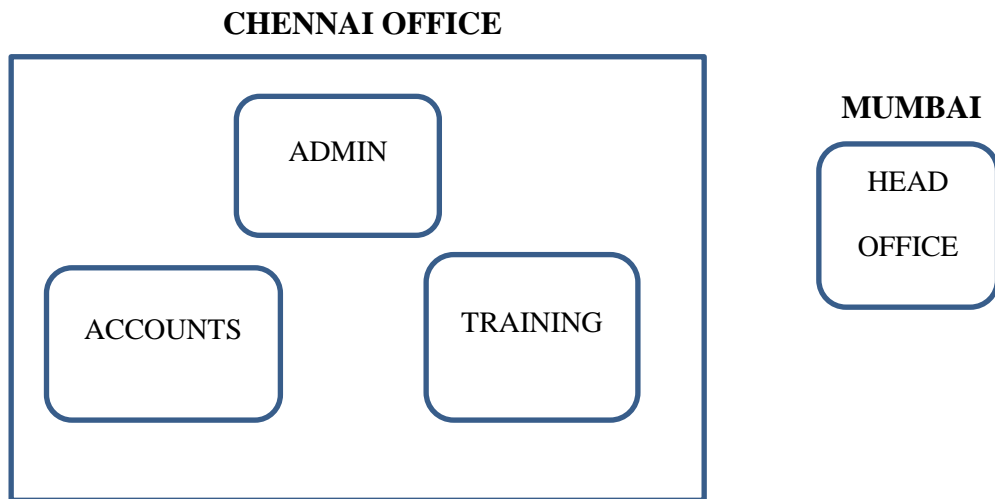
CHENNAI OFFICE

Centre to Centre distances between different buildings are as follows:

Admin Block to Accounts Block	300 m
Accounts Block to Training Block	150 m
Admin Block to Training Block	200 m
MUMBAI Head Office to CHENNAI Office	1300K m

Each of the above buildings has following number of computers

Admin BLOCK	65
Accounts BLOCK	30
Training BLOCK	125
Head Office BLOCK	40

(i) Suggest the most appropriate block/location to house the SERVER in Chennai Office(out of 3
    blocks) to get best and effective connectivity. Justify the answer.

(ii) Suggest the best wired medium and draw the cable layout (Block to Block) to efficiently connect various blocks within Chennai office compound.

(iii) Suggest a device/software and its placement that would provide data security for the entire network of the Chennai Office.

(iv) Suggest a device and the protocol that shall be needed to provide wireless Internet access to all smartphone/laptop users in Chennai Office.

SECTION-C

Q4.a. The statement in SQL which allows to change the content of a table is   1
      (a) Alter   (b) Update   (c) Create   (d) select.

b. Which key is used to ensure data in the specific column is unique?   1
      (a) Primary key   (b) Secondary Key   (c) Foreign Key (d) None of these

c. Which command is used to create the database?   1

d. How are NULL values treated by aggregate functions?   1

e. Differentiate between *Candidate key* and *Alternate key*.   2

OR

Write a program *to delete the record* from employee table whose name is 'Rao'.

f. i. Write the command to create a project in Django.   2
   ii. How do you start a server in Django?

g. Consider the following tables GAMES and PLAYER. Write SQL command and output for the   3
following statements.

TABLE : GAMES

GCode	GameName	Number	PrizeMoney	ScheduledDate
101	Kabbadi	2	5000	23-Jan-2007
102	Badminton	2	12000	14-Dec-2013
103	Table Tennis	4	8000	14-Feb-2014
105	Chess	2	9000	1-Jan-2015
108	Table Tennis	4	25000	19-Mar-2014

(a)   To display the details of those GAMES which have PrizeMoney more than 7000.

(b)   SELECT MAX(ScheduledDate), MIN(ScheduledDate) FROM GAMES;

(c)   SELECT COUNT (DISTINCT GameName) FROM GAMES;

h.   Write SQL queries which is based on the following table.   4

TABLE : DVD

DCODE	DTITLE	DTYPE	ISSUEDATE
F101	Henry Martin	Folk	2019-11-30
C102	Dhrupad	Classical	2019-08-30
C101	The Planets	Classical	2019-01-30
F101	Universal Soldier	Folk	2019-07-30
R102	A day in life	Rock	2019-05-30

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

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

iii. To display all details from the table DVD in descending order of ISSUEDATE.

iv. Find the Degree and Cardinality of the table DVD.

SECTION-D

Q5. a.   What are the proper methods and steps for the disposal of used electronic items?   1

b.   Identify the type of cybercrime for the following.   3
1. It is a crime to gain a financial advantage or obtain credit and other benefits in the other person's name, and perhaps to the other person's disadvantage or loss.
2. It is a crime such as sharing personal or private information about someone else causing embarrassment or humiliation.
3. It is a type of deception which makes use of the Internet and could involve hiding of information or providing incorrect information for the purpose of tricking victims out of money and property.

c.   Reno downloaded XYZ software from the internet. After 2 weeks the software is asking Reno to   2
purchase a license for it to work at its best. In this context answer the questions.
    (i) XYZ comes under what category of software.
    (ii) Can Reno see the source code and also freely edit the software code of XYZ software?

d.   i. Name some threats to computer security.   2
ii. A producer has made a movie whose story line is completely based on a previous Hollywood movie. This producer did not take permission to make the movie based on this story. The writer of the story has now filed a case against this producer in court?
        (a) Which kind of offence is this?
        (b) What are the consequences?

e.   What are Intellectual Property Rights (IPR)?   2

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