## SECOND MODEL EXAMINATION - 2019-2020

**CLASS: XII**        **COMPUTER SCIENCE (083)**        **MAX.MARKS: 70**

**TIME: 3 hrs**

**General instructions:**

- *All questions are compulsory.*

- *Attempt all questions at a stretch.*

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

  - ➢ *Section A – Programming and Computational Thinking (30 marks).*

  - ➢ *Section B – Computer Networks (15 marks).*

  - ➢ *Section C- Data Management (15 marks).*

  - ➢ *Section D – Society, Law and Ethics (10 marks).*

### SECTION A

| Q1. | (a) | Which of the following is not an assignment operator? <br><br> **i.**      `**=` <br><br> **ii.**      `/=` <br><br> **iii.**      `==` <br><br> **iv.**      `%=` | 1 |
|---|---|---|---|
| | (b) | Write the type of tokens from the following. <br> i. _Var <br> ii. in | 1 |
| | (c) | Name the python library module which is to be imported to invoke the following functions. <br> i. cos() <br> ii. randint() | 1 |
| | (d) | Observe the following python code carefully and rewrite it after removing all syntactical errors with each correction underlined. <br>      30=max <br>      For N in range(0,max) <br>        IF n%3==0: <br>          print(N*3) <br>       ELSE: <br>          print(N+3) | 2 |
| | (e) | Find the output of the following code: <br>      tup=(10,30,15,9) <br>      s=1 <br>      t=0 <br>      for i in range(s,4): <br>        t=t+tup[i] <br>        print(i,":",t) <br>        t=t+tup[0]*10 <br>        print(t) | 2 |

| | | | |
|---|---|---|---|
| | (f) | Consider the following code:<br>    import random<br>    x=random.random()<br>    y=random.randint(0,4)<br>    print(int(x),":",y+int(x))<br>Choose the possible output(s) from the given options. Also write the least and highest value that may be generated.<br>  i.    0:0<br>  ii.    1:6<br>  iii.    2:4<br>  iv.    0:3 | 2 |
| | (g) | Find and write the output of the following python code:<br>    def modlist():<br>      l=[]<br>      l1=[]<br>      l2=[]<br>      for i in range(1,10):<br>        l.append(i)<br>      for i in range(10,1,-2):<br>        l1.append(i)<br>      for i in range(len(l1)):<br>        l2.append(l1[i]+l[i])<br>        l2.append(len(l)-i+1)<br>      print(l2)<br>    modlist() | 3 |
| Q2. | (a) | What do you understand by local and global scope of variables? How can you access a global variable inside the function, if function has a variable with same name? | 1 |
| | (b) | Identify mutable and immutable objects from the following:<br>  i.    List<br>  ii.    String<br>  iii.    Dictionary<br>  iv.    Tuple | 1 |
| | (c) | Declare a dictionary of toppers of your class with their name as keys and marks obtained as their value. | 1 |
| | (d) | What will be the output of following code snippet?<br>    x="iamaprogrammer"<br>    print(x[2:])<br>    print(x[3:8]) | 1 |
| | (e) | Write the output of the following code:<br>    k=10<br>    def change():<br>      global k<br>      k=25<br>      print(k)<br>    change() | 1 |

| | | | |
|---|---|---|---|
| | (f) | Write any two ways/statements through which a method/function of a module may be imported in a python program. Give an example for each. | 2 |
| | (g) | Write python code to create a bar chart for the year-wise growth of MNC Pvt Ltd company whose details are given below: <br> ➔ **Year**: [2001,2002,2003,2004,2005] <br> ➔ **Growth %**: [50,20,40,55,60] <br> ➔ **Title**: GROWTH OF MNC PVT LTD <br><br> **OR** <br><br> Give the output for the following piece of python code: <br> import matplotlib.pyplot as plt <br> x1=[10,15,25,30] <br> y1=[5,10,12,6] <br> plt.bar(x1,y1) <br> plt.xlabel("X_AXIS") <br> plt.ylabel("Y_AXIS") <br> plt.title("BAR CHART SAMPLE") <br> plt.show() | 2 |
| | (h) | Write a function in python to count the number of lines in a text file 'GRAMMAR.TXT' which starts with alphabet 'K'. <br><br> **OR** <br><br> Write a function disp_word() in python to read lines from a text file 'SAMPLE.TXT' and display those words which are less than 5 characters long. | 2 |
| | (i) | Write recursive function binarysearch(MyList,L,R,X) to search the given element X from the list MyList having R elements, where L represents lower bound and R represents upper bound. <br><br> **OR** <br><br> Write a program in python to print Fibonacci series up to n$^{th}$ term using recursion. | 3 |
| | (j) | Write **DoPush(customer)** and **DoPop(customer)** to add a new customer and delete a customer from a list of customer names considering them as push and pop operations of stack. <br><br> **OR** <br><br> **Write InsQueue(passenger)** and **DelQueue(passenegr)** to add a new passenger and delete a passenger from a list of passenger names considering them to act as enqueue and dequeue operations of queue. | 4 |

## SECTION B

| Q3. | (a) | ---------------- is a set of rules used for communication. | 1 |
|---|---|---|---|
| | (b) | ---------------- protocol is used for sending email. | 1 |
| | (c) | ---------------- is a device that forwards data packets along networks. | 1 |

| (d) | ---------------- describes the maximum transmission capacity of a communication channel. | 1 |
|---|---|---|
| (e) | Expand the following:<br>     i.    POP<br>     ii.   VoIP<br>    iii.  HTTP<br>    iv.  DNS | 2 |
| (f) | Differentiate between IPv4 and IPv6. | 2 |
| (g) | Write the purpose of the following commands:<br>     i.    ping<br>     ii.   ipconfig<br>    iii.  whois | 3 |
| (h) | Sunrise Pvt Ltd has set up its new centre in Ahmadabad. It has four departments: **M**arketing, **F**inance, **L**egal and **S**ales as shown in the below diagram: | 4 |



**Distance between various buildings:**

| M to F | 80 m |
|---|---|
| M to L | 180 m |
| M to S | 100 m |
| L to S | 150 m |
| F to L | 100 m |
| F to S | 50 m |

**Number of computers:**

| M | 20 |
|---|---|
| L | 10 |
| F | 8 |
| S | 42 |

    i.    Suggest the type of network and topology that can be established between the buildings.
    ii.   Suggest the most suitable block to place the server with reason.
   iii.  Suggest the placement of :
        i.   Modem
        ii.  Hub/Switch
   iv.  The organization is planning to link its sales counters situated in various parts of the same city. Which type of network out of LAN, WAN, MAN can be considered? Justify.

## SECTION C

| Q4. | (a) | Which keyword in SQL used to find unique values from various duplicate values in a column? | 1 |
|---|---|---|---|
| | (b) | Which of the following is not a DDL command?<br>  i.  create<br>  ii.  alter<br>  iii.  delete<br>  iv.  All the above | 1 |
| | (c) | Which command is used to modify the records of the table? | 1 |
| | (d) | Which command is used to create a django project?<br>  i.  django-admin startproject <projectname><br>  ii.  django_admin startproject <projectname><br>  iii.  django-admin start project <projectname><br>  iv.  django-admin startproject new project | 1 |
| | (e) | Differentiate between primary key and candidate key. | 2 |
| | (f) | Explain django GET and POST method. | 2 |
| | (g) | Write the output of SQL queries from (i) to (iii) based on the below table named 'CLUB' | 3 |

| id | coachname | age | sports | date | pay | sex |
|---|---|---|---|---|---|---|
| 1 | Kukreja | 35 | Karate | 1996-03-27 | 1000 | M |
| 2 | Ravina | 34 | Karate | 1998-01-20 | 1200 | F |
| 3 | Karan | 34 | Squash | 1998-02-19 | 2000 | M |
| 4 | Tarun | 33 | Basketball | 1998-01-01 | 1500 | M |
| 5 | Zubin | 36 | Swimming | 1998-01-12 | 750 | M |
| 6 | Ketaki | 36 | Swimming | 1998-02-24 | 800 | F |
| 7 | Ankita | 39 | Squash | 1998-02-20 | 2200 | F |
| 8 | Zareen | 37 | Karate | 1998-02-22 | 1100 | F |
| 9 | Kush | 41 | Swimming | 1998-01-13 | 900 | M |
| 10 | Shaliya | 37 | Basketball | 1998-02-19 | 1700 | M |

  i.  select sports, count(*) from club group by sports
  ii.  select avg(pay) from club where sports="squash"
  iii.  select name, sex from club where sports="swimming"

| | (h) | Write SQL queries for (i) to (iv) based on the table 'CLUB' given above.<br>  i.  To display records from club in alphabetical order of coachname.<br>  ii.  To display coachname, date and sports whose pay is between 1000 and 2000.<br>  iii.  To display sports and total number of coaches who have pay more than 1500, sports wise.<br>  iv.  To increase pay of all coaches by 100 whose sports is "swimming". | 4 |

## SECTION D

| Q5. | (a) | ---------------- is the fraudulent attempt to obtain sensitive information like username, password, credit/debit card details etc. | 1 |
|------|-----|---|---|
| | (b) | A person is using the social account of twitter of another person without his/her information and consent. What this is called and what will be your action when you know this? | 1 |
| | (c) | Explain briefly any two measures to recycle E-waste safely. | 2 |
| | (d) | What is open source software? Give any two examples. | 2 |
| | (e) | Explain any two disability issues that may rise while teaching using ICT tools. | 2 |
| | (f) | From: Internal Revenue Service [mailto:admin@irs.gov]<br>Sent: Wednesday, March 01, 2006: 12:45 PM<br>To: john.doe@jdoe.com<br>Subject: IRS Notification – Please read this<br><br>After the lat annual calculation of your fiscal activity we have determined that you are eligible for a tax refund of $63.80.<br>Please submit the tax refund request and allow us 6-9 days in order to process it.<br>To access the form for your tax refund, please click here.<br><br>John received the above mail and on clicking 'click here', he was taken to a site designed to imitate an official IRS website. he uploaded some important information there.<br><br>Identify and explain the cyber crfime being discussed in the above scenario. | 2 |

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