Max Marks: 70   **Time: 2.30 Hrs**

General Instructions:

1. This question paper contains two **parts A and B**. Each part is compulsory.

2. **Part-A has 2 sections**: a. Section – I is short answer questions, to be answered in one word or one line. b. Section – II has two case studies questions. Each case study has 4 case-based subparts. An examinee is to attempt any 4 out of the 5 subparts.

3. **Part - B is Descriptive Paper**. Part- B has three sections a. Section-I is short answer questions of 2 marks each in which two question have internal options. b. Section-II is long answer questions of 3 marks each in which two questions have internal options. c. Section-III is very long answer questions of 5 marks each.

Part-A

SECTION-I

Attempt any 15 questions from question no 1 to 20. Each question carries 1 mark

Q1**.** Which amongst the following is a mutable data type in Python ?

   a) Int   b) String   c) tuple   d) list

Q2. Which is the correct form of declaration of dictionary ?

   a) Day={1:'Monday', 2:'tuesday', 3:'wednesday'}
   b) Day={1;'Monday', 2;'tuesday', 3;'wednesday'}
   c) Day=[1:'Monday',2:'tuesday',3:'wednesday']
   d) Day={1'Monday', 2'tuesday', 3'wednesday'}

Q3. What is the output produced by the following code ?

    alast=[1,2,3,4,5,6,7,8,9]

    print(alast[::3])

Q4. What will be the output of the following code

    rec={"Name": "python", "Age": "20"}

    r=rec.copy()

    print(id(r)==id(rec))

   a) True   b) False   c) 0   d) 1

Q5. What is the length of the tuple shown below ?

   T=(((('a',1),'b','c'),'d',2),'e',3)

Q6. Name the module to which following function belong

fabs()

Q7. The CSV files are actually _____ files.

Q8. Consider a text file "abc" , want to add some content to this file . In which mode text file should be open?

Q9. The device that can operate in place of hub is a:

  a) Switch   b) Bridge   c) Router   d) Gateway

Q10. A network of network is known as_____

Q11. A teacher provides https://www.XtSchool.com/default.aspx to her students to identify the domain name. Write Domain name.

Q12. After practicals, Atharv left the computer laboratory but forget to sign off from his email account. later his classmate Revaan start using some computer. he is now logged in as Atharv and send inflammatory email messages to some of his classmates using Atharv's email account. Revaan activity is an example of which of the following cyber crime?

Q13. Which type of network is found when you connect to mobile using Bluetooth to transfer a video?

Q14. Which clause is used for condition with group by command in SQL?

Q15. Write to example of DBMS software.

Q16. In SQL, if we want to store data off format 0132 in the column, which data type should we assign to the column?

Q17. Alter table is a _____SQL command

Q18. In SQL, which operator is used to display the records among the range of values?

Q19. Give the output of the following statements:
 str='Hello Python'
 str.istitle()

Q20. What would be the output of the following code snippets?
     print(4+9)
     print("4+9")

SECTION-II

Both the Case study based questions are compulsory. Attempt any 4 sub parts from each question. Each question carries 1 mark

Q21. From the given table, Answer the following questions:

TableName-House

House_Name	House_Captain	House_Points
Red Rose	Yathin	243
Lotus	Hari Narayan	298
Blue Bells	Anil Sharma	220

Sun Flower	Felicita	260

(i) Write the degree and cardinality of the above table.

(ii) Write the domain of House_Captain attribute.

(iii) Write a Query to insert House_Name=Tulip, House_Captain= Rajesh and House_Point=278

(iv) Any field of above table can be made Primary key

(v) If we want to add a new column in above table which SQL command we use

Q22. Pallavi of class 12 is writing a program to create a CSV file "Item.csv" which will contain Item_name, description and price for some entries. She has written the following code. As a programmer, help her to successfully execute the given task

Import _____   // line1

fg=open("Item.csv",____)   // line 2

Lwriter=csv.writer(fg)

ans='y'

itemrec=[['Item_Name','Description', 'Price']]

print("Enter item details")

while ans='y':

   iname=input("Enter Item code:")

   desc=input("Enter description:")

   iprice=input("Enter price:")

   itemrec.append([iname,desc,iprice])

else:

   l_writer._____(itemrec)   //line 3

fg.close()

with open(' Item.csv','rb') as newFile:

   newFileReader = csv._____(newFile)   // Line 4

  for row in newFileReader:

      print (row)

  newFile._____   //line 5

    (i)   Name the module he should import in Line 1.
    (ii)   In which mode, Pallavi should open the file to add data into the Item file
    (iii)   Fill in the blank in Line 3 to write the data into a csv file.
    (iv)   Fill in the blank in Line 5 to close the file.
    (v)   Is CSV file different from text file?

Part – B

Attempt all. Each question carries 2 marks

Q23. Write the output from the following code:

```
n = 50
i = 5
s = 0
while i<n:
   s+ = i
   i+ = 10
   print "i=",i
print "sum=",s
```

Q24. Add pair of parentheses to each expression so that it evaluates to True

     i)   0==1==2   ii) 1<-1==3>4

Q25. What are the possible outcome(s) executed from the following code? Also specify the maximum and minimum values that can be assigned to variable NUMBER.

```
String ='CBSEONLINE'

Number=random.randint(0,3)

N=9

while String[N]!='L':

   print(String[N]+String[Number]+'#')

   Number=Number+1

   N=N-1
```

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

Q26. Rewrite the following code in Python after removing all syntax error(s). Underline each correction done in the code.

a=int(input("Enter a value;"))

while a != 0:

   count=count+1

   a=int(input("Enter a value:")

 print("You entered", count,"values")

Q27. Find and write the output of the following Python code:

     def Funstring(St):

```
        while len(St)<=4:
            if St[-1]=='z':
                St=St[0:3]+ 'c'
            elif 'a' in St:
                St=St[0]+'bb'
            elif not int(St[0]):
                St='1'+St[1:]+'z'
            else:
                St=St+'*'
        print(St)
    Funstring("0xy")
```

Q28. Differentiate DDL and DML commands.

Q29. What is foreign key? What are the rules to define Primary key in your table?

Q30. What is connection? Which package must be imported in python to create a database connectivity application?

Q31. Identify which of these will cause error and why?

   (i) def func(a=1,b):   (ii) def func(a=1,b,c=2)   (iii) def func(a=1,b=1,c=2)
                        OR

   What is the difference between local variable and global variable? Give suitable Python code to illustrate both.

Q32. Expand the following term with respect to Networking:

   (i)   CDMA   (ii) GSM   (iii) XML   (iv) PPP
                                OR

   Differentiate between Hackers and Crakers?

SECTION- II

Attempt all. Each question carries 3 marks

Q33. Write a function Unique(lst) in Python , which accept linear list lst. Find out and return the number of unique elements in the list.

Q34. Write SQL commands for the queries based on the tables Watches' and Sale given below.

Watches

Watchid	Watch_Name	Price	Type	Qty_Store
W001	High Time	10000	Unisex	100
W002	Life Time	15000	Ladies	150
W003	Wave	20000	Gents	200
W004	High Fashion	7000	Unisex	250
W004	Golden Time	25000	Gents	100

1. TO DISPLAY ALL THE DETAILS OF THOSE WATCHES WHOSE NAME ENDS WITH 'TIME'
2. TO DISPLAY WATCH'S NAME AND PRICE OF THOSE WATCHES WHICH HAVE PRICE RANGE IN BETWEEN 5000-15000.
3. TO DISPLAY TOTAL QUANTITY IN STORE OF UNISEX TYPE WATCHES

Q35. Write a function in python to count the number of upper-case alphabets present in a text file "Article.txt".

OR

Write a function Displaywords() in python to read lines from text file story.txt and display those words which are less than 4 characters.

Q36. Write a function in Python PUSH(Arr), where Arr is a list of book details (bookno, book-name). Just implement PUSH operation to add book detail in STACK.

OR

Write a function in Python POP(Arr), where Arr is a list of book details (bookno, book-name). Just implement POP operation to delete a book details in STACK.
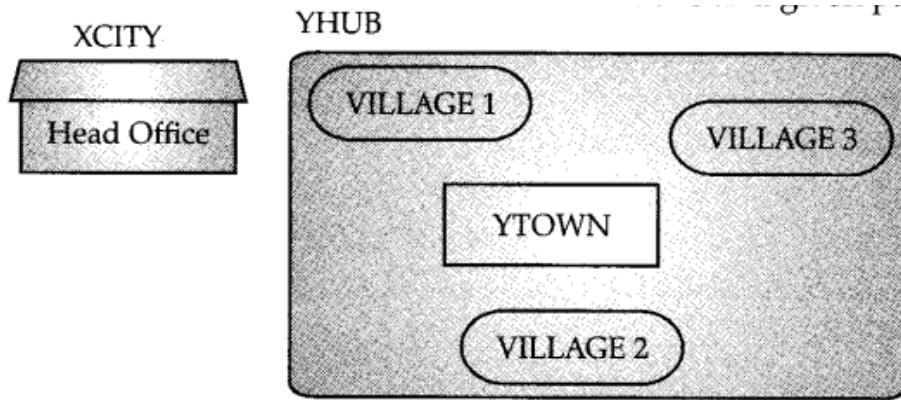
SECTION-III

Attempt all. Each question carries 5 marks

Q37. Intelligent Hub India is a knowledge community aimed to uplift the standard of skills and knowledge in the society. It is planning to setup its training centers in multiple towns and villages pan India with its head offices in the nearest cities. They have created a model of their network with a city, a town and 3 villages as given.
As a network consultant, you have to suggest the best network related solution for their issues/problems raised
in (i) to (v) keeping in mind the distance between various locations and given parameters.

Shortest distance between various locations:

VILLAGE 1 To YTOWN	2 KM
VILLAGE 2 To YTOWN	1.2 KM
VILLAGE 3 To YTOWN	3 KM
VILLAGE 1 To VILLAGE 2	3.5 KM
VILLAGE 1 To VILLAGE 3	4.5 KM
VILLAGE 2 To VILLAGE 3	3.5 KM
CITY Head office to YHUB	30 KM

Number of computers iinstalled at various locations are as follows:

YTOWN	100
VILLAGE 1	10
VILLAGE 2	15
VILLAGE 3	15
CITY OFFICE	5

Note:
• In Villages, there are community centers, in which one room has been given as training center to this organization to install computers.
• The organization has got financial support from the government and top IT companies.

I. Suggest the most appropriate location of the SERVER in the YHUB (out of the 4 locations), to get the best and effective connectivity. Justify your answer.
II. Draw the cable layout (location to location) to efficiently connect various locations within the YHUB.
III. Which hardware device will you suggest connecting all the computers within each location of YHUB?
IV. Which server/protocol will be most helpful to conduct live interaction of Experts from Head office and people at YHUB locations?
V. Suggest the best wired medium to efficiently connect various locations within the YHUB

Q38. Answer the questions (i) to (v) on the basis of the following tables SHOP and ACCESSORIES.

Table: SHOP

Id	SName	Area
S001	ABC computronics	CP
S002	All Infotech Media	GK II
S003	Tech Shop	CP
S004	Geeks Tecno Soft	Nehru Place
S005	Hitech Tech Store	Nehru Place

Table: ACCESSORIES

No	Name	Price	Id
A01	Mother Board	12000	S01
A02	Hard Disk	5000	S01
A03	Keyboard	500	S02
A04	Mouse	300	S01
A05	Mother Board	13000	S02
A06	Keyboard	400	S03
A07	LCD	6000	S04
T08	LCD	5500	S05
T09	Mouse	350	S05
T10	Hard Disk	4500	S03

Write the SQL queries:

i. To display Name and Price of all the Accessories in ascending order of their Price.
ii. To display Id and SName of all Shop located in Nehru Place.
iii. To display Minimum and Maximum Price of each type of Accessories.
iv. To display Name, Price of all Accessories and their respective SName where they are available.
v. Display number of item(Accessories) supply by each supplier.

Q39. Write a function to search and display details of all trains whose destination is Delhi" from binary file "Train.Dat". Assuming the binary file is containing the objects of the following dictionary type:

Train={'Tno':_____, 'From':____, 'To':___}