FIRST PRE-BAORD EXAMINATION: 2020-21
SUBJECT: COMPUTER SCIENCE(083)
CLASS: XII

DURATION: 3 HOURS	**MAX. MARKS: 70**

General Instructions:
1. This question paper contains two parts A and B. Each part is compulsory.
2. Both Part A and Part B have choices.
3. 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 sub-parts. An examinee is to attempt any 4 out of the 5 subparts.
4. Part - B is Descriptive Paper.
5. 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 in which one question has internal option.
6. All programming questions are to be answered using Python Language only.

Question No.	Part-A	Marks allocated
	Section-I **Select the most appropriate option out of the options given for each question.** **Attempt any 15 questions from question no 1 to 21.**	
1	Which of the following is not a keyword? (a) eval (b) assert (c) nonlocal (d) pass	1
2	Which among the following list of operators has the highest precedence? +, -, **, %, /, <<, >>, | (a) <<, >> (b) ** (c) | (d) %	1
3	Given the lists L=[1,3,6,82,5,7,11,92] , write the output of print(L[2:5])	1
4	Which is the default delimiter character in csv files? Can we change delimiter character in csv files?	1
5	Suppose a list T is declared as T = [10, 20, 30, 40], what is the output of the following statements? T[2]=[100,200] print(T)	1
6	What will be the output of the following code snippet? D={'a':2, 'b':3, 'c':1} E={ } for c in D: E[D[c]]=c print(E)	1
7	What is the difference between capitalize() & upper( ) method?	1
8	Name the Python Library modules which need to be imported to invoke the following functions: (a) dump() (b) writerow()	1
9	Astitva & Gauravi are relative and living in different cities. They generally communicate by either through chatting or video conferencing. Can you help them	1

	to find the name of the protocols which are used in chatting and video conferencing? (Write only one protocol for each)		
10	The following statement explains for which type of cybercrime: "when someone receives an unsolicited commercial message sent via email, SMS, MMS and any other similar electronic messaging media." (a) Phishing (b) Cyber Stalking (c) Spamming (d) Cyber Bullying	1	
11	Explain why the following queries give different outputs on execution: → **SELECT COUNT(ENAME) FROM EMP;** Output: 5 → **SELECT Count(*) FROM EMP;** Output: 8	1	
12	A table has 5 rows and 4 columns. If we add 5 more rows then what will be the degree of this table.	1	
13	Astitva has created a table named Orders, he has been asked to increase the value of a column named salesamount by 20. He has written the following query for the same. **Alter table Orders Add salesamount =salesamount+20;** Is it the correct sql command? Justify.	1	
14	Write any two aggregate functions used in SQL.	1	
15	Why are the pair of wires twisted around each other in twisted pair cables?	1	
16	Write a Python statement to declare a dictionary whose keys are 'Apple', 'Mango', 'Banana' and values are 100, 250, 60 .	1	
17	If the following code is executed, what will be the output of the following code? Comment="Year 2020 will be remembered for covid-19" print(Comment[2:20:5])	1	
18	In SQL, write the sql command to display the structure or schema of a table stored in a database.	1	
19	Write the expanded form of WiFi and WiMax.	1	
20	Which of the following types of table constraints will ensure that no two rows have the same value in the specified column(s)? (a) UNIQUE (b) DEFAULT (c) PRIMARY KEY (d) CHECK	1	
21	What is the difference between MBps and Mbps, units use to measure data transfer speed for a communication channel?	1	

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

22	A departmental store MyStore is considering to maintain their inventory using SQL to store the data. As a database administer, Abhay has decided that:
	• Name of the database - mystore
	• Name of the table - STORE
	• The attributes of STORE are as follows:
	    ItemNo - numeric
	    ItemName – character of size 20
	    Scode - numeric
	    Quantity – numeric
	    SupplierName - character of size 20

Table : STORE				
ItemNo	**ItemName**	**Scode**	**Quantity**	**SupplierName**
2005	Sharpener Classic	23	60	Tilak Enterprise
2003	Ball Pen 0.25	22	50	Magna Trader
2002	Get Pen Premium	21	150	Gupta Industries
2006	Get Pen Classic	21	250	Gupta Industries
2001	Eraser Small	22	220	Khan Brothers
2004	Eraser Big	22	110	Khan Brothers

	(a) ItemNo attribute is best suitable to be declared as a primary key, why?	1
	(b) Write the degree and cardinality of the table STORE.	1
	(c) Insert the following data into the attributes ItemNo, ItemName and SCode respectively in the given table STORE. ItemNo = 2010, ItemName = "Note Book" and Scode = 25	1
	(d) Abhay want to delete data from the table STORE from the database MyStore. Which command will he use from the following: a) DELETE FROM store; b) DROP TABLE store; c) DROP DATABASE mystore; d) DELETE store FROM mystore;	1
	(e) Abhay wants to display total quantity available of all items in STORE table. Write the sql command to display the same.	1
23	Gauravi is writing a program to create a CSV file "books.csv" which will contain the book name and author name. She wants to display the details of all the books.	
	(a) Name the module she should import in the program.	1
	(b) In which mode, she should open the file to read all the data.	1
	(c) Name the in-built function which is used to read the data from csv file.	1
	(d) Write a function to close the csv file.	1
	(e) If Gauravi wants to add a new record in the csv file, write the statement to help her in opening the file.	1
	Part – B	
	Section-I	
24	Evaluate the following expressions: a) (5 < 10) and (10 < 5) or (3 < 18) and not 8 < 18 b) 47 // 5 + 10 **2 – 25+12	2
25	Differentiate between Viruses and Worms in context of networking and data communication threats. OR Differentiate between Web server and web browser. Write any two popular web browsers.	2
26	Expand the following terms: (a) SIP (b) WLL (c) GPRS (d) IPR	2
27	What is the difference between a local variable & a global variable? Also, give a suitable python code to illustrate both. OR Consider below given function headers. Identify which of these will cause error & why? (a) def func(a=1,b): (b) def func(a=1,b,c=2):	2

	(c) def func(a=1,b=2,c=3): (d) def func(a=1,b=1,c=3,d):	

28	Find errors in the following code (if any) and correct the code by rewriting it and underline the corrections:
	x=int("Enter value for x : "))
	for in range range[0,11]:
	    if x == y
	        print x + y
	    else:
	        print x - y
		2

29	What possible output(s) are expected to be displayed on screen at the time of execution of the program from the following code? Also specify the minimum and maximum values that can be assigned to the list A.
	A=[ ]
	for C in range(5):
	    A.append(random.randint(0,C) +10)
	for C in range(3, -1, -1):
	    print(A[C], end="@")
	(a) 13@10@11@10
	(b) 15@14@12@10@
	(c) 12@11@13@10
	(d) 12@11@10@10
		2

30	What do you understand by Foreign Key in a table? Give a suitable example of Foreign Key from the tables containing some meaningful data.	2
31	Write python code to connect to a mysql database namely School and then fetch all those records from table Student where grade is "A".	2
32	What is the difference between DDL and DML? Write any two commands of DDL in SQL.	2

33	Find and write the output of the following Python code:
	Text1="AISSCE 2021"
	Text2=""
	I=0
	while I<len(Text1):
	  if Text1[I]>="0" and Text1[I]<="9":
	    Val = int(Text1[I])
	    Val = Val + 1
	    Text2=Text2 + str(Val)
	  elif Text1[I]>="A" and Text1[I] <="Z":
	    Text2=Text2 + (Text1[I+1])
	  else:
	    Text2=Text2 + "*"
	  I=I+1
	print(Text2)
		2

Section- II		
34	Write definition of a method/function DoubletheOdd(Nums) to add and display twice of odd values from the list of Nums. For example : If the Nums contains [25,24,35,20,32,41] The function should display Twice of Odd Sum: 202	3

35	Write a method/function BIGLINES() in Python to read lines from a text file CONTENT.TXT, and display those lines, which are bigger than 20 characters.	3
	OR	
	Write a function in Python that counts the number of "Me" or "My" words present in a text file "STORY.TXT". If the "STORY.TXT" contents are as follows: My first book was Me and My Family. It gave me chance to be Known to the world. The output of the function should be: Count of Me/My in file: 4	

36	Write the outputs of the SQL queries (i) to (iii) based on the relations TRAINS and PASSENGERS given below:	3

Table: TRAINS

TNO	TNAME	START	END
11096	Ahimsa Express	Pune Junction	Ahmedabad Junction
12015	Ajmer Shatabdi	New Delhi	Ajmer Junction
1651	Pune Hbj Special	Pune Junction	Habibganj
13005	Amritsar Mail	Howrah Junction	Amritsar Junction
12002	Bhopal Shatabdi	New Delhi	Habibganj
12417	Prayag Raj Express	Allahabad Junction	New Delhi
14673	Shaheed Express	Jaynagar	Amritsar Junction
12314	Sealdah Rajdhani	New Delhi	Sealdah
12498	Shane Punjab	Amritsar Junction	New Delhi
12451	Shram Shakti Express	Kanpur Central	New Delhi
12030	Swarna Shatabdi	Amritsar Junction	New Dehi

Table: PASSENGERS

PNR	TNO	PNAME	GENDER	AGE	TRAVELDATE
P001	13005	R N AGARWAL	MALE	45	2018-12-25
P002	12015	P TIWARY	MALE	28	2018-11-10
P003	12015	S TIWARY	FEMALE	22	2018-11-10
P004	12030	S K SAXENA	MALE	42	2018-10-12
P005	12030	S SAXENA	FEMALE	35	2018-10-12
P006	12030	P SAXENA	FEMALE	12	2018-10-12
P007	13005	N S SINGH	MALE	52	2018-05-09
P008	12030	J K SHARMA	MALE	65	2018-05-09
P009	12030	R SHARMA	FEMALE	58	2018-05-09

i) SELECT MAX(TRAVELDATE), MIN(TRAVELDATE) FROM PASSENGERS
   WHERE GENDER= 'FEMALE' ;

ii) SELECT END, COUNT(*) FROM TRAINS
   GROUP BY END HAVING COUNT(*) > 1 ;

iii) SELECT TNAME, PNAME FROM TRAINS T, PASSENGERS P
   FROM T.TNO = P.TNO AND AGE BETWEEN 50 AND 60 ;

37	Write the functions in python, MakePush(Package) and MakePop(Package) to add a new Package and delete a Package from a list Package Description, considering them to act as push and pop operations of the Stack data structure.	3
	OR	

	Write a function in Python PUSH(Arr), where Arr is a list of numbers. From this list push all numbers divisible by 5 into a stack implemented by using a list. Display the stack if it has at least one element, otherwise display appropriate error message.	
	Section-III	
38	ABC Pvt Ltd has set up its new Branch at Jammu for its office and web-based activities. It has 4 Wings of buildings as shown in the diagram: Center to center distance between various blocks:	5
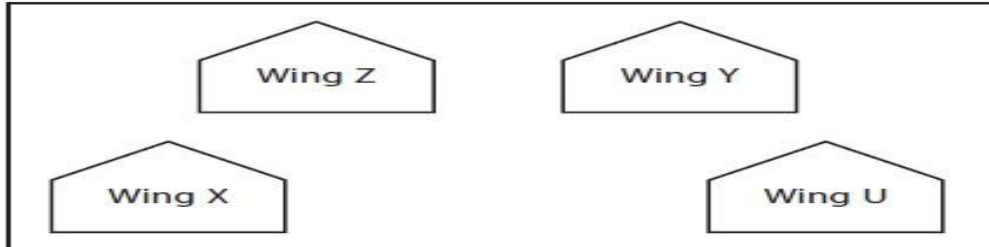
Wing X to Wing Z	50 m
Wing Z to Wing Y	70 m
Wing Y to Wing X	125 m
Wing Y to Wing U	80 m
Wing X to Wing U	175 m
Wing Z to Wing U	90 m

Number of computers:

Wing X	50
Wing Z	30
Wing Y	150
Wing U	15

(a) Suggest an ideal layout/most suitable connection for connecting these Wings for a wired connectivity and name the network topology.

(b) Suggest the most suitable place (i.e., Wing) to house the server of this organization with a suitable reason, with justification.

(c) Suggest the placement of a Repeater in the network with justification.

(d) Which device will you suggest to be placed/installed in each of these blocks/centers to efficiently connect all the computers within these blocks/centers.

(e) The organization is planning to link its head office situated in Delhi with the offices at Jammu. Suggest an economic way to connect it; the company is ready to compromise on the speed of connectivity. Justify your answer.

39	Write SQL commands for the following queries (i) to (v) based on the relations TRAINER and COURSE given below:	5

TRAINER

TID	TNAME	CITY	HIREDATE	SALARY
101	SUNAINA	MUMBAI	1998-10-15	90000
102	ANAMIKA	DELHI	1994-12-24	80000
103	DEEPTI	CHANDIGARG	2001-12-21	82000
104	MEENAKSHI	DELHI	2002-12-25	78000
105	RICHA	MUMBAI	1996-01-12	95000
106	MANIPRABHA	CHENNAI	2001-12-12	69000

COURSE

CID	CNAME	FEES	STARTDATE	TID
C201	AGDCA	12000	2018-07-02	101
C202	ADCA	15000	2018-07-15	103
C203	DCA	10000	2018-10-01	102
C204	DDTP	9000	2018-09-15	104
C205	DHN	20000	2018-08-01	101
C206	O LEVEL	18000	2018-07-25	105

	(i) To Display the Trainer Name, City & Salary in descending order of their Hiredate. (ii) To display the TNAME and CITY of Trainer who joined the Institute in the month of December 2001. (iii) To display TNAME, HIREDATE, CNAME, STARTDATE from tables TRAINER and COURSE of all those courses whose FEES is less than or equal to 10000. (iv) To display number of Trainers from each city. (v) To display the details of all the trainers whose names are starting from "SUN".		
40	A binary file "Book.dat" has structure [BookNo, Book_Name, Author, Price]. i. Write a user defined function CreateFile() to input data for a record and add to Book.dat . ii. Write a function CountRec(Author) in Python which accepts the Author name as parameter and count and return number of books by the given Author are stored in the binary file "Book.dat" OR A binary file "STUDENT.DAT" has structure (admission_number, Name, Percentage). Write a function countrec() in Python that would read contents of the file "STUDENT.DAT" and display the details of those students whose percentage is above 75. Also display number of students scoring above 75%	5