SAMPE PAPER- 5 Class-XII

Subject: Computer Science (083)

Marking Scheme Cum Model Answer-Sheet

SECTION-A(1*21=21 MARKS)		
QN	Answer of Question	
1.	Ans. True, as continue keyword skips remaining part of an iteration in a loop.	1
2.	Ans. (c) “uter”, as it counts from 4 index to last index	1
3.	Ans: (b) True, as firstly “not” performed then “And” performed and at last “Or” performed. True or not True and False True or False and False True or False True	1
4.	Ans. (d) dict_student.update(dict_marks), as we use update method for dictionary merging with syntax dict1.update(dict2)	1
5.	Ans. (b) tuple, as Elements enclosed in parentheses( ) represents by tuple.	1
6.	Ans: (d) (40,60), as this expression will slice the given tuple starting with index position 3 and selecting every second element till index number 7.	1
7.	Ans. (c) None, as it is empty value.	1
8.	Ans. (c) 512, as 2**3**2= 2**9=512 is the answer.	1
9.	Ans. (b) Statement 4, as string’s individual element can’t assigned new value so S[0]= '@' # Statement 4 give error.	1
10.	Ans. (c) F=open(‘Notes.txt’) print(F.read(10)) As read method in python is used to read at most n bytes from the file associated with the given file descriptor. If the end of the file has been reached while reading bytes from the given file descriptor, os.read( ) method will return an empty bytes object for all bytes left to be read.	1
11.	Ans. (a) Pickling, as pickling is used for object serialization in handling of Binary Files.	1
12.	Ans. (d) n is local and x is global variable As n is defined within function body and x is defined outside the function body.	1
13.	Alter- Add command is used to add a new column in table in SQL.	1
14.	Ans. (b) DISTNICT, as DISTNICT Keyword is used to obtain Non-duplicated values in a SELECT query.	1
15.	Ans. (c) sum( ), as it’s used for summation of numeric values in a column.	1
16.	Ans. (a) Mycur.fetch(), as it’s not a valid method for fetching.	1
17.	Ans. (c) Both Modualtion & Demodulation, as MODEM does both tasks.	1
18.	Ans. (c) HomePage, as it is the first page that normally view at a website.	1
19.	Ans: Topology is the way of connecting the networking devices.	1
20.	Ans: (a) Both A and R are true and R is the correct explanation for A As global variables are accessed anywhere in the program and local variables are accessed only within the boundary of loop/ condition/ function.	1

21.	Ans: b) Both A and R are true and R is not the correct explanation for A	1
	SECTION-B (2*7=14 MARKS)	
22.	Valid identifier(s) (i)Total (iv) great (vi) li1 (viii) _Data As identifier(s) names may be started with alphabet or underscore. A digit may be there between the name. Invalid identifier(s) (ii) @selute (iii) Que$tion (v) 4th Sem (vii) No# As identifier(s) name does not have any special character except underscore. Name should not start with digit and not any space is there in name.	½ *4= 2
23.	i) Names of any two data types available in python: int, float or any other valid datatype in python. ii) Any 2 operators name used in python: Arithmetic, Logical, Relational or any other valid operator in python.	1+1 =2
24.	(i)A) str="PYTHON@LANGUAGE" print(str[2: :]) **OR** B) d=dict( ) (ii)A) s="LANGUAGE" l=list(s) **OR** B) t=tuple( )	2
25.	Lower = r.randint(1,3) means Lower will have value 1,2, or 3 Upper =r.randint(2,4) means Upper will have value 2, 3, or 4 So K will be from (1, 2, 3) to (2, 3, 4) Means if K=1, then upper limit (2,3,4) If K=2, then upper limit (2,3,4) If K=3, then upper limit (2,3,4) **So correct answer (ii) 30#40#50#** **Maximum values of variables Lower and Upper are 3 and 4.**	2
26.	COUNT(*) returns the count of all rows in the table, whereas COUNT (COLUMN_NAME) is used with Column_Name passed as argument and counts the number of non-NULL values in the particular column that is given as argument. Example: A MySQL table, sales have 10 rows with many columns, one column name is DISCOUNT. This DISCOUNT column has 6 valid values and 4 empty/ null values. When we run the Following queries on sales table. SELECT COUNT(*) FROM sales; COUNT(*) | 10 SELECT COUNT(DISCOUNT) FROM sales; COUNT(DISCOUNT) | 6 As in table, there are 10 rows so count(*) gives 10 and discount column is having 6 valid values with 4 NULLvalues so it gives 6.	2
27	i)	1+1

.	A) Default constraint should be applied on a table's column to provide it the default value when column does not have any value. **OR** B) Unique constraint should be applied on a table's column so that NULL value is allowed in that column and duplicate values are not allowed. **ii)** **A)** SQL command to add one more column in previously defined table, named CELL. Column name is CELL_ID with size 10 of integral type should be added in the table Alter table CELL ADD CELL_ID(10) int; **OR** DROP table CELL;	=2
28 .	(A) VOIP-Voice Over Internet Protocol Utility-VoIP is used to transfer audio (voice) and video over internet URL- Uniform Resource Locator Utility-Place for typing website names in web browser. **OR** **(B)** **IP Address** | **MAC Address** Internet Protocol Address | Media Access Control Address It is 4 bytes address in IPV4 and 6 bytes address in IPV6 | It is 6 bytes address. Or any other valid difference between the two. **(1 mark for ANY ONE difference)**	2
	SECTION-C (3*3= 9 Marks)	

29 .	**A)**
	def countlines_et():
	f=open("report.txt",'r')
	lines=f.readlines()
	linee=0
	linet=0
	for i in lines:
	if i[0]=='E':
	linee+=1
	elif i[0]=='T':
	linet+=1
	print("No.of Lines with E:",linee)
	print("No.of Lines with T:",linet)
	countlines_et()
	
	OR
	B)
	def show_todo():
	f=open("abc.txt",'r')
	lines=f.readlines()
	for i in lines:
	if "TO" in i or "DO" in i:
	print(i)
	show_todo()
		3

30 .	A)	3

	data = [1,2,3,4,5,6,7,8]
	stack = []
	def push(stack, data):
	for x in data:
	if x % 2 == 0:
	stack.append(x)
	def pop(stack):
	if len(stack)==0:
	return "stack empty"
	else:
	return stack.pop()
	push(stack,Data)
	print(pop(stack)
	(½ mark should be deducted for all incorrect syntax. Full marks to beawarded for any other logic that produces the correct result.)
	
	OR
	
	B)
	def push(EventDetails):
	BigEvents=[]
	count=0
	for i in EventDetails:
	if EventDetails[i]>200:
	BigEvents.append(i)
	count+=1
	print("The count of elements in the stack is",count)
	def pop(EventDetails):
	if len(EventDetails)==0:
	return "Dictionary is empty"
	else:
	return EventDetails.pop()
	push(EventDetails)
	print(pop(EventDetails))
	(½ mark should be deducted for all incorrect syntax. Full marks to beawarded for any other logic that produces the correct result.)	

31	A) (i) SELECT EMP_NAME, BASIC+DA+HRA+NPS AS "GROSS SALARY" FROM EMPLOYEE; (ii)UPDATE EMPLOYEE SET DA=DA+0.03*BASIC; (iii)ALTER TABLE EMPLOYEE DROP COLUMN EMP_DESIG; **OR** B) (i) SELECT COUNT(*) FROM EMPLOYEE; (ii) SELECT * FROM EMPLOYEE ORDER BY basic desc; (iii) SELECT SUM(hra) FROM EMPLOYEE;	1*3 =3
	SECTION-D (4*4= 16 Marks)	
32.	A) i) When the value passed in the index operator is greater than the actual size of the tuple or list, Index Out of Range is thrown by python. ii) value=[1,2,3,4] data=0 try: data=value[4]	1+3 =4

	except IndexError:
	  print("list index out of range is not allowed", end='')
	except:
	  print("Some Error occurred", end='')
	
	OR
	B)
	i) When the division or modulo by zero takes place for all numeric types, ZeroDivisionError Exception is thrown by python.
	ii)
	def division(x,y):
	  try:
	  div=x/y
	  print(div, end='')
	  except ZeroDivisionError as e:
	  print(" ZeroDivisionError Exception occured", e, end='')
	  except:
	  print("Some Error occurred", end='')	

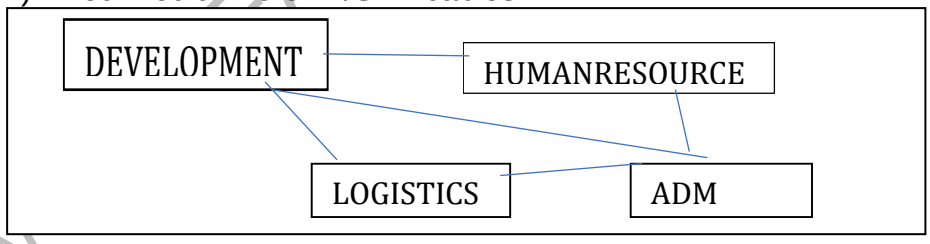
33.	import **csv**
	def AddNewRec(Country,Capital):
	  f=open("CAPITAL.CSV",'a')
	  fwriter=csv.writer(f)
	  fwriter.writerow([Country,Capital])
	  f.close()
	def ShowRec():
	  with open("CAPITAL.CSV","r") as NF:
	  NewReader=csv.reader(NF)
	  for rec in NewReader:
	  print(rec[0],rec[1])
	AddNewRec("INDIA", "NEW DELHI")
	AddNewRec("CHINA", "BEIJING")
	ShowRec()
	
	Output:
	INDIA NEW DELHI
	CHINA BEIJING
		2+2=4

34.	i)SELECT SUM (PERIODS), SUBJECT FROM SCHOOL GROUP BY SUBJECT ;
	
	ii) SELECT MIN(EXPERIENCE), MAX(CODE) FROM SCHOOL;
	
	iii)SELECT TEACHERNAME, GENDER FROM SCHOOL, ADMIN WHERE
	  DESIGNATION = 'COORDINATOR' AND
	SCHOOL.CODE=ADMIN.CODE;
	iv)
	  A) SELECT COUNT(DISTINCT SUBJECT) FROM SCHOOL;
	  OR
	  B) SELECT COUNT(), GENDER FROM ADMIN GROUP BY GENDER;
	(1 mark for each correct query)
		1*4=4

35.	import mysql.connector as cnt
	def Emp_Database():
	  con=cnt.connect(host="localhost", user="root", password="tiger",
	  database="company")
	  mycursor= con.cursor()
		4

	print("Display Employee whose age is more than 55 years:") mycursor.execute("select * from Emp where age>55") EmpRec= mycursor.fetchall() for rec in EmpRec: print(rec)	
	SECTION-E (2*5= 10 Marks)	

36	**Binary Files-** It is usually much smaller than a text file.For image, video and audio data this type of file is important and it's extension is .det or .dat. Compiler does not need to convert these files as these files are in the machine readable form hence these files consumes less time to execute and process faster.
	(a) import pickle
	def AddOrder():
	f=open("Stock.dat",'ab')
	OrderId=input("Enter Order Id")
	MedicineName=input("Enter Medicine Name")
	Qty=int(input("Enter Quantity:"))
	Price=int(input("Enter Price:"))
	data=[OrderId,MedicineName,Qty,Price]
	pickle.dump(data,f)
	f.close()
	AddOrder()
	(b)
	def DisplayPrice():
	f=open("Stock.dat",'rb')
	try:
	while True:
	data=pickle.load(f)
	if data[3]>500:
	print(data[0],data[1],data[2],data[3],sep="\t")
	except:
	f.close()
	DisplayPrice()
		1+2
		+2=
		5

37	i) ADM Block Justification- It has maximum number of computers. Reduce traffic. ii) wired medium is UTP/STP cables  iii) (a) Switches in all the blocks since the computers need to be connected to the network. (b) Repeaters between ADM and HUMANRESOURCE block & ADM and Logistics block. The reason being the distance is morethan 100m. iv) Modem should be placed in the Server building v) (c)OFC-Optical Fiber cable, this connection is high-speed wired communication medium. **OR** LAN will be set up among computers connected in Campus.	1*5 =5

अनुक्रमांक/ROLL NO | सेट/SET : 01

केंद्रीय विद्यालय संगठन ,जयपुर संभाग

KENDRIYA VIDYALAYA SANGATHAN, JAIPUR REGION

प्रथम प्री बोर्ड परीक्षा / 1ST PRE BOARD EXAMINATION :2024-25

कक्षा/ CLASS :XII

विषय /SUB : कंप्यूटर विज्ञानं (83) /COMPUTER SCIENCE (83)

अधिकतम अवधि / Time Allowed :03 Hours **अधिकतम अंक Maximum Marks : 70**

सामान्य निर्देश / General Instructions

- This question paper contains 37 questions.
- All questions are compulsory. However, internal choices have been provided in some questions. Attempt only one of the choices in such questions
- The paper is divided into 5 Sections- A, B, C, D and E.
- Section A consists of 21 questions (1 to 21). Each question carries 1 Mark.
- Section B consists of 7 questions (22 to 28). Each question carries 2 Marks.
- Section C consists of 3 questions (29 to 31). Each question carries 3 Marks.
- Section D consists of 4 questions (32 to 35). Each question carries 4 Marks.
- Section E consists of 2 questions (36 to 37). Each question carries 5 Marks.
- All programming questions are to be answered using Python Language only.
- In the case of MCQ, the text of the correct answer should also be written.

Q.	Section-A (21 x 1 = 21 Marks)	Mark
1	State True or False: The keys of a dictionary must be of immutable types.	1
2	Identify the output of the following code snippet: str = "KENDRIYA VIDYALAYA" str=str.replace('YA','*') print(str) (a) KENDRIYA VIDYALAYA (b) KENDRI*A VID*ALAYA (c) KENDRI* VID*LA* (d) * KENDRI* VID*LA*	1
3	What will be the output of following expression? (5<10) and (10< 5) or (3<18) and not 8<18 (a) True (b) False (c) Error (d) No output	1
4	What is the output of the expression? St1=”abc@pink@city” print(St1.split("@")) (a) (“abc”, “@”, “pink”, “@”, “city”) (b) [“abc”, “@”, “pink”,”@’,”city”] (c) [“abc”, “pink”, “city”] (d) Error	1
5	What will be the output of the following code snippet? message= "Satyamev Jayate" print(message[-2::-2])	1
6	Which of the following options will not result in an error when performed on types in python where tp = (5,2,7,0,3) ? (a) Tp[1] = 2 (b) tp.append(2) (c) tp1 = tp+tp (d) tp.sum( )	1

7	If my_dict is a dictionary as defined below, then which of the following statements will raise an exception? my_dict = {'aman': 10, 'sumit': 20, 'suresh': 30} (a) my_dict.get('suresh') (b) print(my_dict['aman', 'sumit']) (c) my_dict['aman']=20 (d) print(str(my_dict))	1
8	Which of the following can delete an element from a list if the index of the element is given? (a) pop( ) (b) remove( ) (c) clear( ) (d) all of these	1
9	Which of the following attributes can be considered as a choice for primary key? (a) Name (b) Street (c) Roll No (d) Subject	1

10	Write the missing statement to complete the following code:
	file = open("abc.txt", "r")
	d = file.read(50)
	_____ #Move the file pointer to the beginning of the file
	next_data = file.read(75)
	file.close()
		1

11	State whether the following statement is True or False: An exception may be raised even if the program is syntactically correct.	1
12	What will be the output of the following Python code ? v = 50 def Change(n): global v v, n = n, v print(v, n, sep = "#", end = "@") Change(20) print(v) (a) 20#50@20 (b) 50@20#50 (c) 50#50#50 (d) 20@50#20	1
13	Which statement is used to modify data in a table? (a) CHANGE (b) MODIFY (c) UPDATE (d) ALTER	1
14	How would you return all the rows from a table named "Item" sorted in descending order on the column "IName"? (a) SELECT * FROM Item SORT 'IName' DESC; (b) SELECT * FROM Item ORDER BY IName DESC ; (c) SELECT * FROM Item ORDER IName DESC ; (d) SELECT * FROM Item SORT BY 'IName' DESC;	1
15	LIKE clause is used for. (a) For pattern matching (b) For table matching (c) For inserting similar data in a table (d) For deleting data from a table	1
16	Count(*) method count (a) NULL values only (b)Empty Values (c) ALL the values (d) None of these	1
17	The term HTTP stands for? (a) Hyper terminal tracing program (b) Hypertext tracing protocol (c) Hypertext transfer protocol (d) Hypertext transfer program	1
18	A device that connects networks with different protocols – (a) Switch (b) Hub (c) Gateway (d) Proxy Server	1
19	Which switching technique follows the store and forward mechanism?	1

	Q20 and Q21 are Assertion(A) and Reason(R) based questions. Mark the correct choice as: (a) Both A and R are true and R is the correct explanation for A (b) Both A and R are true and R is not the correct explanation for A (c) A is True but R is False (d) A is False but R is True	
20	Assertion :- A parameter having a default value in the function header is known as a default parameter. Reason:- The default values for parameters are considered only if no value is provided for that parameter in the function call statement.	1
21	Assertion :- Both WHERE and HAVING clauses are used to specify conditions. Reason :- The WHERE and HAVING clauses are interchangeable.	

Q	Section-B (7 x 2=14 Marks)	Mark
22	What are immutable and mutable types? List immutable and mutable types of python.	2
23	If given A=2,B=1,C=3, What will be the output of following expressions: (i) print((A>B) and (B>C) or(C>A)) (ii) print(A**B**C)	2
24	Write the most appropriate list method to perform the following tasks. (I) A) To delete a given element from the list L1. OR B) To sort the elements of list L1 in ascending order. (II) A) To add an element in the beginning of the list L1. OR B) To add elements of a list L2 in the end of a list L1.	2
25	What possible outputs(s) are expected to be displayed on screen at the time of execution of the program from the following code? Also specify the maximum values that can be assigned to each of the variables FROM and TO. import random AR=[20,30,40,50,60,70] FROM=random.randint(1,3) TO=random.randint(2,4) for K in range(FROM,TO): print (AR[K],end="#") (i)10#40#70# (ii)30#40#50# (iii)50#60#70# (iv)40#50#70#	2
26	Rewrite the following code in Python after removing all syntax error(s). Underline each correction done in the code. p=30 for c in range(0,p) If c%4==0: print (c*4) Elseif c%5==0: print (c+3) else print(c+10)	2
27	(i) (A) What constraint should be applied on a table column so that duplicate values are not allowed in that column, but NULL is allowed. OR	2

	(B) What constraint should be applied on a table column so that NULL is not allowed in that column, but duplicate values are allowed. (ii) (A) Write an SQL command to remove the Primary Key constraint from a table, named MOBILE. M_ID is the primary key of the table. OR B) Write an SQL command to make the column M_ID the Primary Key of an already existing table, named MOBILE.	
28	(A) How is it easier to diagnose fault in Star topology than in Bus topology ? OR (B) Nirmala is a bit confused between the terms Web server and Web browsers. Help her in understanding both the terms with the help of suitable example.	2

Q	Section-C (3 x 3 = 9 Marks)	Mark
29	(A) Write a Python function that count the lines start with the word “the” in a file “xyz.txt” and display it at the end. OR B) Write a Python function that **Count total number of vowels in a file “abc.txt”.**	3
30	(A) Madhuri has a list containing 10 integers. You need to help him create a program with separate user defined functions to perform the following operations based on this list. ● Traverse the content of the list and push the ODD numbers into a stack. ● Pop and display the content of the stack. For Example: If the sample Content of the list is as follows: N=[12, 13, 34, 56, 21, 79, 98, 22, 35, 38] Sample Output of the code should be: 13,21,89,35 OR (B) Saroj have a list of 10 numbers . You need to help him create a program with separate user defined functions to perform the following operations based on this list. ● Traverse the content of the list and push the numbers into a stack which are divisible by 5. ● Pop and display the content of the stack. For Example: If the sample Content of the list is as follows: N=[2,5,10,13,20,23,45,56,60,78] Sample Output of the code should be: 5,10,20,45,60	3
31	(A) Predict the output of the Python code given below: def func(n1 = 1, n2= 2): n1= n1 * n2 n2= n2 + 2 print(n1, n2) func( ) func(2,3)	3

OR

(B) Predict the output of the Python code given below:

```
T= ["20", "50", "30", "40"]
Counter=3
Total= 0
for I in [7,5,4,6]:
    newT=T[Counter]
    Total= float (newT) + I
    print(Total)
    Counter=Counter-1
```

Q	Section-D (4 x 4 = 16 Marks)	Mark

32 Write SQL queries for (i)to(iv),which are based on the table: ACTIVITY given below: **4**

Table:ACTIVITY

ACode	ActivityName	ParticipantsNum	PrizeMoney	ScheduleDate
1001	Relay100x4	16	10000	23-Jan-2004
1002	Highjump	10	12000	12-Dec-2003
1003	ShotPut	12	8000	14-Feb-2004
1005	LongJump	12	9000	01-Jan-2004
1008	DiscussThrow	10	15000	19-Mar-2004

(i) To display the name of all activities with their Acodes in descending order.

(ii) To display sum of PrizeMoney for each of the Number of participants groupings (as shown in column ParticipantsNum(10,12,16).

(iii) To display the Schedule Date and Participants Number for the activity Relay100x4.

(iv) To increase PrizeMoney by 500 for High jump activity

OR

Write output for SQL queries(i) to(iii) and query for (iv),which are based on the table: ACTIVITY:

(i) select count(distinct ParticipantsNum) from ACTIVITY;
(ii) select max(ScheduleDate),min(ScheduleDate) from ACTIVITY;
(iii) select sum(PrizeMoney) from ACTIVITY;
(iv) Write a query to delete the record of Acode 1003.

33 Abhishek is making a software on "Countries & their Capitals" in which various records are to be stored/retrieved in CAPITAL.CSV data file. It consists of some records. As a programmer, you have to help him to successfully execute the program. **4**

(A) Write a function in Python named AddNewRec(Country,Capital) to append following records in the file "CAPITAL.CSV".
["FRANCE","PARIS"]
["SRILANKA","COLOMBO"]
(B) Write a function in Python named ShowRec( ) that will show all the contents of CAPITAL.CSV

34 Write SQL commands for the queries (i) to (iii) and output for (iv) & (v) based on a table COMPANY and CUSTOMER . **4**

COMPANY

CID	CNAME	CITY	PRODUCTNAME
111	SONY	DELHI	TV
222	NOKIA	MUMBAI	MOBILE
333	ONIDA	DELHI	TV
444	SONY	MUMBAI	MOBILE
555	BLACKBERRY	MADRAS	MOBILE
666	DELL	DELHI	LAPTOP

CUSTOMER

CUSTID	NAME	PRICE	QTY	CID
101	Rohan Sharma	70000	20	222
102	Deepak Kumar	50000	10	666
103	Mohan Kumar	30000	5	111
104	Sahil Bansal	35000	3	333
105	Neha Soni	25000	7	444
106	Sonal Aggarwal	20000	5	333
107	Arjun Singh	50000	15	666

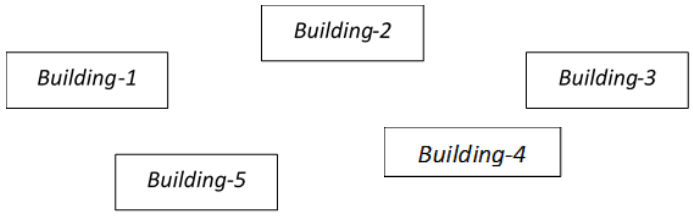
(i) To display those company name along with price which are having price less than 30000.
(ii) To display the name and price of the companies whose price is between 20000 to 35000.
(iii) To increase the price by 1000 for those customer whose name starts with 'S'
(iv) To display those product name, city and price which are having product name as MOBILE.

35 Kabir wants to write a program in Python to insert the following record in the table named Student in MYSQL database, SCHOOL: 4
- rno(Roll number) – integer
- name(Name) – string
- DOB(Date of Birth) – Date
- Fee – float

Note the following to establish connectivity between Pythonand MySQL:
- Username – root
- Password – tiger
- Host – localhost

The values of fieldsrno, name, DOB and fee has to be accepted from the user. Help Kabir to write the program in Python.

Q	Section-E (2 x 5 = 10 Marks)	Mark
36	Amit is a manager working in a recruitment agency. He needs to manage the records of various candidates. For this, he wants the following information of each candidate to be stored: - Candidate_ID – integer Candidate_Name – string Designation – string Experience – float	5

	You, as a programmer of the company, have been assigned to do this job for Amit. (i) Write a function to input the data of a candidate and append it in a binary file. (ii) Write a function to update the data of candidates whose experience is more than 12 years and change their designation to "Sr. Manager". (iii) Write a function to read the data from the binary file and display the data of all those candidates who are not "Sr. Manager".	
37	PVS Computers decided to open a new office at Ernakulum, the office consist of Five Buildings and each contains number of computers. The details are shown below.  Distance between the buildings Building 1 and 2 — 20 Meters Building 2 and 3 — 50 Meters Building 3 and 4 — 120 Meters Building 3 and 5 — 70 Meters Building 1 and 5 — 65 Meters Building 2 and 5 — 50 Meters Building — No of computers 1 — 40 2 — 45 3 — 110 4 — 70 5 — 60 The Company has now decided to connect network in buildings. (i)Suggest the most suitable place (i.e. building) to house the server of this organization. Also give a reason to justify your suggested location. (ii) Where would you place Hub/Switch? Answer with justification. (iii) Suggest a cable layout of connection between the buildings (Topology). (iv) Do you think anywhere Repeaters required in the campus? Why (v) Suggest a protocol that shall be needed to provide Video Conferencing solution between Ernakulum Campus and Ranchi Campus. OR What type of network (PAN, LAN, MAN, or WAN) will be set up among the computers connected in the Ernakulum campus?	5