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(DELHI REGION)
COMPUTER SCIENCE (083)
CLASS XII
MARKING SCHEME
SET 2

MM: 70 TIME: 3Hrs.

General Instructions

- ***The question paper is divided into 4 sections – A, B, C and D***
- ***Section A, consists of 14 questions (1-14). Each question carries 1 marks.***
- ***Section B, consists of 16 questions (15-30). Each question carries 2 marks.***
- ***Section C, consists of 4 questions (31-34). Each question carries 3 marks.***
- ***Section D, consists of 3 questions (35-37). Each question carries 4marks.***
- ***Internal choices have been given for question numbers 21, 34 and 35.***

SECTION A		
Q1.	What will be the output of the following Python code? R=(23,34,57,80) R.pop(57) print(R) (a) (23,34,80) (b) Error (c) (23,34,57,80) (d) (57)	1
Ans.	(b) Error	
Q2.	The readlines() method returns_____ a str (b) a list of lines (c) a list of single characters (d) a list of integers	1
Ans.	(b) a list of lines	
Q3.	The variable declared inside a function is called a global variable.(True/False)	1
Ans.	False	
Q4.	_____ is a network device that forwards data from one network to another.	1
Ans.	Router is a network device that forwards data from one network to another.	
Q5.	Suggest a switching technique in which the information is transferred using Store and Forward mechanism.	1
Ans.	Message Switching	
Q6.	Write one advantages of using an optical Fiber cable over a Twisted Pair cable to connect two service stations, which are 230m away from each other.	1
Ans.	Advantages of using an optical Fiber : i. Faster speed than ethernet. ii. Lower attenuation (Any One Advantage)	
Q7.	Write any one difference between LAN and WAN.	1
Ans.	A LAN (local area network) is a group of computers and network devices connected together, usually within the same building. A WAN connects several LANs, and may be limited to an enterprise (a corporation or an organization) or accessible to the public. The technology is high speed and relatively expensive.	
Q8	Define any of the following one term: Web server or Web Hosting	1
Ans.	Web server:- A web server is a special computer system, running on HTTP through web pages. It is used to store and deliver the contents of a website to clients such as a browser that request it. Web Hosting:- Web hosting is a service that allows us to put a website or a web page onto the Internet, and make it a part of the World Wide Web so that users across the globe can access.	
Q9.	Define URL ?	1
Ans.	URL	

	A URL (Uniform Resource Locator) is a unique identifier used to locate a resource on the Internet. It is also referred to as a web address. URLs consist of multiple parts -- including a protocol and domain name – that tell a web browser how and where to retrieve a resource	
Q10.	_____ provides a connection –oriented reliable service for sending messages.	1
Ans.	TCP	
Q11.	Which command in MySQL is used to delete a database?	1
Ans.	drop database	
Q12.	Rohit is learning MySQL for managing different databases and tables for his Python based Application / software. Tell him the SQL command to show pre-existing databases.	1
Ans.	show databases;	
Q13.	A table “Customer" in a database has 20 columns and 50 records. What is the degree and Cardinality of this table?	1
Ans.	Degree: 20 and Cardinality : 50	
Q14.	Give one point of difference between primary key and foreign key.	1
Ans.	A primary key is used to assure the value in the particular column is unique. The foreign key provides the link between the two tables.	

Q15.	What will be the output of following Python Code:
	if 6<9 or 7:
	  print("Hello"*3)
	  print("Welcome*3")
	else:
	  print("Welcome"*1)
		2

Ans.	HelloHelloHello Welcome*3	1 1

Q16.	What will be the output of following Python Code:
	t,r=8,4
	for n in range(15,55,15):
	 t-=n
	 r*=n
	else:
	 print(t, "&", r)
	 print(n,"*")
		2

Ans.	-82 & 81000 45 *	1 1
Q17.	Consider the following code and find the correct output from the given options: num1=[5,12,58,41,11] print(num1.index(41)) print(num1[3])	2
Ans.	3 41	1 1
Q18.	What will be the result of the following code? d={"H":6,"P":5,"R":4} d.update({"Total":4}) print(d) d.pop("P") print(d)	2
Ans.	{'H': 6, 'P': 5, 'R': 4, 'Total': 4} {'H': 6, 'R': 4, 'Total': 4}	1 1

Q19.	What is the result of this code?
	def display(a):
	  print(2**a)
	  print(a*2)
	display(5)
		2

Ans.	32	1

	10	1

Q20.	Find and write the output of the following python code:
	def check(m,k=70):
	  m=m-k
	  k=m*k
	  print(m,"@",k)
	  return(90)
	g=40
	p=10
	g=check(g,p)
	print(g,"$",p)
		2

Ans.	30 @ 300 90 $ 10	1 1
Q21.	Write a function in python to count the number of lines in a text file 'notes.TXT' which is starting with an alphabet 'R' . **OR** Write a method/function PRINTWORDS() in python to read lines from a text file notes.TXT, and display those words, which are less than 6 characters.	2

Ans.	def COUNT ():
	file=open('NOTES.TXT','r')
	lines = file.readlines()
	count=0
	for w in lines:
	if w[0]=="R" or w[0]=="r":
	count=count+1
	print("Total lines ",count)
	file.close()
	
	OR
	def PRINTWORDS():
	c=0
	file=open('NOTES.TXT','r')
	line = file.read()
	word = line.split()
	for w in word:
	if len(w)<6:
	print(w)
	file.close()
		½
		½
		½
		½
		½
		½
		½

Q22.	Karan has written following program to copy notes.txt file data into file kahani.txt. Help Karan to complete fill in the blank.
	# Program to copy Story.txt file into new file Kahni.txt
	file1=open("notes.txt","r")
	file2=open("kahani.txt","w")
	data=_____ # to read data from notes.txt
	_____ # to write data in kahani.txt
	file1.close()
	file2.close()
	print("File copied")
		2

Ans.	file1.read() file2.write(data)	1 1
Q23.	Suppose the content of "check.txt" is :- What will be the output of the following Python code?	2

	One best book is equal to hundred good friends, but one good friend is equal to a library." f1=open("check.txt",'r') print(f1.tell(),end="#") f1.seek(5,0) data=f1.read(10) print(data) d=f1.read(5) print(d) f1.close()	
Ans.	0#est book i s equ	1 1

Q24.	Nidhi is trying to write an object t1 = (45,67,89,34,49) on a binary file "test.dat". Consider the following code written by her.
	import pickle
	t1 = (45,67,89,34,49)
	myfile = open("test.dat",'wb')
	pickle._____ #Statement 1
	myfile.close( )
		2

Ans.	dump(obj1, myfile) One mark for function and one mark for argments.	1 1
Q25.	What is the difference between hub and switch? Which is more preferable in a large network of computers and why?	2
Ans.	Hub forwards the message to every node connected and create a huge traffic in the network hence reduces efficiency whereas a Switch is also called intelligent hub since it redirects the received information/ packet to the intended node(s). In a large network a switch is preferred to reduce the unwanted traffic in the network which may also reduce the bandwidth and cause network congestion. (1 Mark For Each Correct Answer)	
Q26.	Explain any one switching technique.	2
Ans.	Circuit switching is referred to as the technology of data transfer that utilizes sending messages from one point to another. This involves sending messages from the receiver to the sender and back simultaneously. A physical connection gets established during this process along with the receiver a dedicated circuit is always present to handle data transmissions, through which data is sent. OR Packet switching can be used as an alternative to circuit switching. In the packet-switched networks, data is sent in discrete units that have variable length. (1 mark for each correct point)	
Q27.	Give two advantages and two disadvantages of bus topology.	2
Ans.	Two advantages and two disadvantages of bus topology: Advantages: ● It requires less cable length than a star topology. ● It is easy to implement and can be extended up to a certain limit. Disadvantages: ● If there is a fault or break in the main cable, the entire network shuts down. ● Fault isolation is difficult to detect if the entire network shuts down (1 mark each for 2 advantages and disadvantages)	
Q28.	Expand the following terms: HTTP,FTP,SMTP and XML	2
Ans.	Hyper Text Transfer Protocol , File Transfer Protocol, Simple Mail Transfer Protocol and Extensible Markup Language (½ mark for Each answer)	
Q29.	Differentiate between Candidate Key and Alternate Key.	2

Ans.	Candidate key: A column or a set of columns can be called as candidate key if they identify each row of a table uniquely. ... Alternate key: There can be more than one keys which can identify each row of the table uniquely. One of them is defined as primary key and rest of them is called alternate keys of the table. (1 mark for both each definition)	
Q30.	Choose correct DDL,DML,DCL and TCL commands from the following:- INSERT INTO, SELECT, CREATE, UPDATE, DELETE,ALTER	2
Ans.	DDL:CREATE, ALTER DML:INSERT INTO,SELECT,UPDATE, DELETE	
Q31.	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 TR=[4,5,7,8,9,10]; FROM=random.randint(1,3) TO=random.randint(2,4) for N in range(FROM,TO+1): print (TR[N],end="@") (i) 5@7@8@9@ (ii) 5@7@8@9 (iii) 4@5@7@8@ (iv) 7@8@9@10@	3
Ans.	(i) 5@7@8@9@ Maximum value FROM,TO is 3,4 (1 mark for correct option ,1 mark for both maximum values)	

Q32.	Rahul student of class 11 is writing a program to create a CSV file “student.csv” which will contain student-number, student-name and Fees for some entries. He has written the following code. As a programmer, help him to successfully execute the given task.
	
	import _____ #line-1
	#Function to add / write single student records
	def addstudent(record):
	file1=open(‘student.csv','a')
	csvobj=csv._____(file1) #line-2
	csvobj._____(record) #line-3
	file1.close()
	#Function to read student records
	def readstudent():
	file1=open('student.csv','___’) #line-4
	csvobj=csv._____(file1) #line-5
	for rec in csvobj:
	if int(rec[2])>15000:
	print(rec)
	file1.close()
	#main-coding
	rec1=[101,'Rekha',1500]
	rec2=[102,'Nitin',3500]
	rec3=[103,'Mohit',3000]
	addstudent(rec1)
	addstudent(rec2)
	addstudent(rec3)
	readstudent() #line-6
	1. Name the module he should import in Line 1.
	a) import csv b) import CSV c) import csv module d) import Csv
	2. Fill in the blank in Line 2 to create CSV object for writing.
	a) writer b) writerow c) writerows d) write
		3

	3. Fill in the blank in Line 3 to write record / data of one student in CSV file. a) writer b) writerow c) writerows d) writeline 4. Fill in the blank in Line 4 with file open mode for reading data from CSV file a) "r" b) "a" c) "w" d) "rb" 5.Fill in the blank in Line 5 to read data from CSV file. a) reader b) read c) readlines d) readline 6 Write the output Rahul will obtain while executing line 6 a) (102,'Nitin',3500) b) [102,'Nitin',3500] c) [103,'Mohit',3000] d) (103,'Mohit',3000)	
Ans.	1. a) import csv 2. a) writer 3. b) writerow 4. a) "r" 5. a) reader 6. b) [102,'sham',20000]	½ ½ ½ ½ ½ ½
Q33.	Explain push() and pop() operations of STACK in python. Give one example.	3
Ans.	PUSH Operation Push operation refers to inserting an element in the stack. Since there's only one position at which the new element can be inserted—Top of the stack, the new element is inserted at the top of the stack. POP Operation Pop operation refers to the removal of an element. Again, since we only have access to the element at the top of the stack, there's only one element that we can remove. We just remove the top of the stack. Example	1 1 1
Q34.	Charu's tutor has given instructions to write a table in MySQL as given below. Help her to get the solution. • Name of the relation should be Library • Column name with data type as : ➢ MId ,integer value and set constraint as Primary Key ➢ MemberName, which can hold at least 20 characters ➢ MemberAddress which can hold at least 15 variable characters ➢ MemberShip, which can hold decimal value in the format (4,2) OR Nandita is trying to connect Python with MySQL for her project. Help her to write the python statement on the following:- (i) Name the library, which should be imported to connect MySQL with Python. (ii)Name the function, used to run SQL query in Python. (iii) Write Python statement of connect function having the arguments values as : Host name :192.168.11.111 User : root Password: Admin Database : MYPROJECT	3
Ans.	create table employee(MId int PRIMARY KEY, MemberName char(20), MemberAddress varchar(20), MemberShip decimal(2,4)); OR (i) import mysql.connector (ii) execute () (iii)mysql.connector.connect(host="192.168.11.111",user="root",passwd="Admin",dat abase="MYPROJECT")	3 1 1 1
Q35.	Nakul has a list containing 6 integers. You need to help him create a program with two user defined functions to perform the following operations based on this list.	4

	● Traverse the content of the list and push those numbers into a stack which are divisible by both 2 and 4. ● Pop and display the content of the stack. For example: If the sample Content of the list is as follows: L=[45,60,8,90,15,20] Sample Output of the code should be: 20 90 8 60 OR Write a function in python, Push(Package) and Pop(Package) to add details of customer contain information (Custid, Cname and Price) in the form of tuple in Package and delete a Package from a List of Package Description, considering them to act as push and pop operations of the Stack data structure.	

Ans.	
	
	def PUSH(Arr,value):
	 s=[]
	 for x in range(0,len(Arr)):
	if Arr[x]%2 and Arr[x]%4==0:
	 s.append(Arr[x])
	if len(s)==0:
	 print("Empty Stack")
	else:
	 print(s)
	def popStack(st) :
	 if len(st)==0: # If stack is empty
	 print("Underflow")
	 else:
	 print(“Element deleted is”,st.pop( ))
	OR
	def Push(Package):
	 Custid=int(input(“Enter Id of Customer: "))
	 Cname=input(“Enter Name of Customer”)
	 Price= int(input(“Enter Price of an Customer”))
	 T=(Custid, Cname , Price)
	 Package.append(T)
	def Pop(Package):
	 if (Package==[]):
	 print("Stack empty")
	 else:
	 print ("Deleted element:",Package.pop())
		½
		
		½
		
		½
		
		½
		
		½
		
		1
		
		½
		
		½
		
		½
		
		½
		
		½
		
		1

Q36.	A Car showroom is maintaining car details using MYSQL to store the data. As a database expert , Nikhil has decided following specifications of database: 1. Name of the database: showroom 2. Name of the table: cardetails 3. The attribute of cardetails table are as follows: Ccode: Integer, Cname: characters of size 15 Manufacturer:character of size 20 Colour : character of size 10 Capacity: integer Chatges: integer	4

Ccode	Cname	Manufacturer	Colour	Capacity	Charges
201	Triber	Renault	Yellow	7	1000

208	Innova	Toyota	Silver	8	3000
212	Duster	Renault	Red	6	2500
217	Ertiga	Suzuki	Grey	7	2300

Write the answers of the questions (a) to (d) based on the table, **CARDETAILS** given below:

(a) Write the names of most appropriate columns, which can be considered as Primary KEY. Justify your answer.
(b) What is the degree and cardinality of the above table?
(c) Which command is to display the structure of above given table.
(d) Write command to create database cardetails.

Ans.

(a) Ccode : Unique and not null — 1
(b) Degree-6 — ½
Cardinality-4 — ½
(c) desc cardetails — 1
(d) create database showroom — 1

Q37 — 4

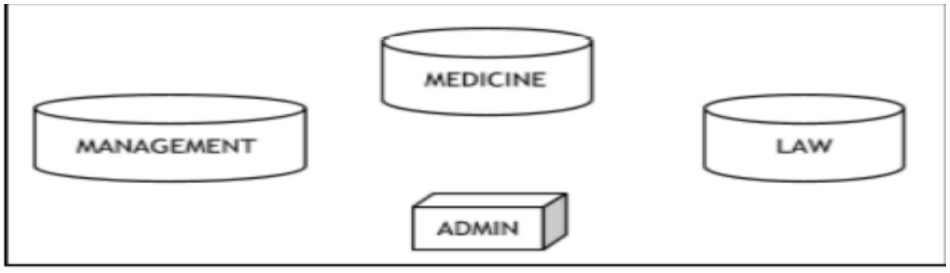
TMP Institute is planning to set up its centre in Orisha with four specialised blocks for Medicine, Management, Law courses along with an Admission block in separate buildings. The physical distances between these blocks and the number of computers to be installed in these blocks are given below. You as a network expert have to answer the queries raised by their board of directors as given in (i) to (iv).

Shortest distances between various locations in metres

Admin Block to Management Block	50
Admin Block to Medicine Block	30
Admin Block to Law Block	65
Management Block to Medicine Block	40
Management Block to Law Block	125
Law Block to Medicine Block	35

Number of Computers installed at various locations are as follows:

Admin Block	250
Management Block	100
Medicine Block	45
Law Block	95



(i). Suggest the most suitable location to install the main server of this institution to get efficient connectivity.
(ii). Suggest by drawing the best cable layout for effective network connectivity of the blocks having server with all the other blocks.
(iii). Suggest the device to be installed in each of these buildings for connecting computers installed within the building.
(iv) Suggest the most suitable wired medium for efficiently connecting each computer installed in every building out of the following network cables:

- Coaxial Cable
- Ethernet Cable
- Single Pair
- Telephone Cable

Ans.	i) Admin Block (1 mark for correct answer) (ii)  (1 mark for correct answer) (iii) Modem or Switch or Router (1 mark for correct answer) (iv)Ethernet Cable (1 mark for correct answer)	