

SAMPLE PAPER 2020
COMPUTER SCIENCE (083)

2020

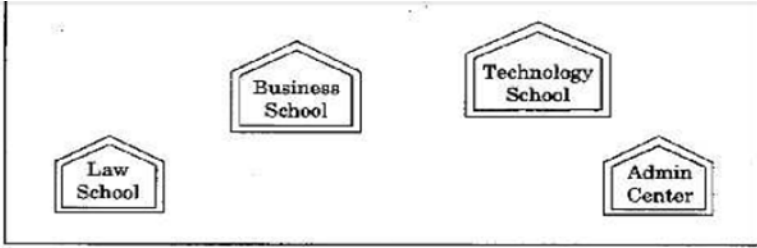
Time Allowed: 3 Hours

Maximum Marks: 70

1	(a)	Write down the output of following arithmetic expression, if A = 100, B = 30 print(A//B) print(A%B)	1
	(b)	Convert the following mathematical expression to Python expression: $AB+\sqrt{b}$	1
	(c)	Name the python library for the following functions: (i) sin() (ii) dump()	1
	(d)	Ramesh is working on a program of calculating the area of rectangle. He has written the following code but code is not working, identify the error(s) and re-write the program so that program execute successfully: length = input('Enter Length ') breadth = input('Enter Breadth') Area = length + breadth print('Area of Rectangle =' + area)	2
	(e)	Find and write the output of the following python code: d={} d[100]=100 d['200']=200 d[100.0]=50 sum=0 print(d) for i in d: sum+=d[i] print(sum)	2
	(f)	Find and write the output of the following python code: def fun1(a,b,c): c=a+b a=a+c b=a-c print(a,'#',b,'#',c) return c x=10 y=20 z=30 x = fun1(10,20,30) print(x,'@',y,'@',z) z = fun1(x,y,z) print(x,'@',y,'@',z)	3

	<p>(g) 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 BEGIN and END.</p> <pre>import random mylist = [10,20,30,40,'Red','Green','Blue'] while True: BEGIN = random.randint(1,3) END = random.randint(2,5) for i in range(BEGIN,END+1): print(mylist[i]) input()</pre> <table border="1" data-bbox="207 558 1377 863"> <tr> <td data-bbox="207 558 792 747">(a) 30 40 Red</td> <td data-bbox="792 558 1377 747">(b) 10 20 30 40 Red</td> </tr> <tr> <td data-bbox="207 747 792 863">(c) 40 Red Green</td> <td data-bbox="792 747 1377 863">(d) Red Green Blue</td> </tr> </table>	(a) 30 40 Red	(b) 10 20 30 40 Red	(c) 40 Red Green	(d) Red Green Blue	2
(a) 30 40 Red	(b) 10 20 30 40 Red					
(c) 40 Red Green	(d) Red Green Blue					
2	<p>(a) Identify the correct statement(s) to product the values between 10 to 20 using range() (i) range(10,20) (ii) range(10,21) (iii) range(10,19) (iv) range(20)</p>	1				
	<p>(b) What will be the output of following Python code? d={'Name':'Raj','Age':17} d2=d.copy() print(id(d)==id(d2))</p>	1				
	<p>(c) Identify the correct option to add new value 50 to existing tuple T T = (11,22,33,44,55) (i) T = T + 66 (ii) T = T + 66, (iii) T = T + (66,) (iv) T = T + (66)</p>	1				
	<p>(d) What will be the output of following Python code? mylist=[10,20,30,40] mylist[0]=0 for i in range(len(mylist)): mylist[i]*=2 mylist[3]+=100 print(mylist)</p>	1				
	<p>(e) Find and write the output of following Python code: def fun1(a): return a+100 def fun2(b): b = b + fun1(b) return b s=100 val = fun2(s) print(val)</p>	1				
	<p>(f) What is Keyword argument in function? Illustrate with example</p>	2				

(g)	<p>Write to create Pie chart for sequence con=[24.5,19.2,25,30,45] for Zones =['East','West','North','South','Central']</p> <ul style="list-style-type: none"> - Show % contribution for each zone - The Pie should be circular <p>OR</p> <p>Give the output of the following python code:</p> <pre>import matplotlib.pyplot as plt x=[1,2,3] y=[5,3,7] x2=[1,2,3] y2=[8,4,9] plt.xlabel('X Axis') plt.ylabel('Y Axis') plt.title('My First Chart\nHave fun!') plt.plot(x,y,label='Overs',color='r') plt.plot(x2,y2,label='Runs',color='g') plt.legend() plt.show()</pre>	2
(h)	<p>Write a function in python to count the number of lines in “POEM.txt” begins from “The” word.</p> <p style="text-align: center;">OR</p> <p>Write function definition of DISP3CHAR() in C++ to read the content of a text file KIDINME.TXT, and display all those words, which has three characters in it.</p> <p>Example :</p> <p>If the content of the file KIDINME.TXT is as follows :</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>When I was a small child, I used to play in the garden with my grand mom. Those days were amazingly funful and I remember all the moments of that time.</p> </div> <p>The function DISP3CHAR() should display the following :</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>was the mom and all the</p> </div>	2
(i)	<p>Write a Recursive function in python BinarySearch(Arr,l,R,X) to search the given element X to be searched from the List Arr having R elements where l represents lower bound and R represents upper bound.</p> <p style="text-align: center;">OR</p> <p>Write a recursive function GCD(P,Q) to return the GCD of P and Q.</p>	3
(j)	<p>Write a function in Python, INSERTQ(Arr,data) and DELETEQ(Arr) for performing insertion and deletion operations in a Queue. Arr is the list used for implementing queue and data is the value to be inserted.</p> <p style="text-align: center;">OR</p> <p>Write a function in python, Push(Emp) and Pop(Emp) to add a new Student and delete a Student from a List of Student, considering them to act as push and pop operations of the Stack data structure.</p>	4
SECTION B		
3	Question 3(a) to 3(c) are fill in the blanks	
(a)	_____ is a type of network where each computer can play a role of Client as well as Server	1
(b)	_____ is an extra bit attached to actual data before it is transmitted	1

(c)	_____ is used to provide short-range wireless connectivity between two electronic devices that within the distance of 4-5 cms.	1																				
(d)	Which out of the following, will you use to have an audio-visual chat with an expert sitting in a far-away place to fix up a technical issue? (i) VoIP (ii) Email (iii) FTP	1																				
(e)	Give the full form of: DNS NIC MAC Wi-Fi	2																				
(f)	What is Network congestion? What are the symptoms of network congestion?	2																				
(g)	What is Scam? Write any 2 measures to avoid scam to happen.	3																				
(h)	<p>Great Studies University is setting up its Academic schools at sunder nagar and planning to setup a network. The university has 3 academic schools and one Administration center as shown in the diagram below:</p>  <p>Center to center distance between various buildings is as follows:</p> <table border="1"> <tr> <td>Law School to Business School</td> <td>60m</td> </tr> <tr> <td>Law School to Technology School</td> <td>90m</td> </tr> <tr> <td>Law School to Admin Center</td> <td>115m</td> </tr> <tr> <td>Business School to Technology School</td> <td>40m</td> </tr> <tr> <td>Business School to Admin Center</td> <td>45m</td> </tr> <tr> <td>Technology School to Admin Center</td> <td>25m</td> </tr> </table> <p>Number of computers in each of the schools/Center is follows:</p> <table border="1"> <tr> <td>Law School</td> <td>25</td> </tr> <tr> <td>Technology School</td> <td>50</td> </tr> <tr> <td>Admin Center</td> <td>125</td> </tr> <tr> <td>Business School</td> <td>35</td> </tr> </table> <p>(i) Suggest the most suitable place to house the server of this University with suitable reason (ii) Suggest as ideal layout for connecting these schools/center for a wired connectivity (iii) Which device will you suggest to be placed/install in each of these schools/center to efficiently connect all the computer within these schools/center a) The university is planning to connect its admission office in the closest big city which is 350 KM from University. Identify the type of network LAN, MAN, PAN, WAN should be established for this.</p>	Law School to Business School	60m	Law School to Technology School	90m	Law School to Admin Center	115m	Business School to Technology School	40m	Business School to Admin Center	45m	Technology School to Admin Center	25m	Law School	25	Technology School	50	Admin Center	125	Business School	35	4
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4	(a)	What is the minimum number of column required in MySQL to create table?				1																																																
	(b)	Which command is used to remove the table from database?				1																																																
	(c)	Which command is used to add new record in table?				1																																																
	(d)	Which option is used for Ascending and Descending order sorting with ORDER BY?				1																																																
	(e)	What is the difference between WHERE and HAVING clause in a SQL Query?				2																																																
	(f)	Give the command (in related to Django) i) To start the Django server ii) To create new App in Django project.				2																																																
	(g)	Write the output of SQL Queries (i) to (iii) based on EMPLOYEE table Table : EMPLOYEE				3																																																
		<table border="1"> <thead> <tr> <th>ENO</th> <th>NAME</th> <th>DOJ</th> <th>DOB</th> <th>GENDER</th> <th>DCODE</th> </tr> </thead> <tbody> <tr> <td>1001</td> <td>George K</td> <td>2013-09-02</td> <td>1991-09-01</td> <td>MALE</td> <td>D01</td> </tr> <tr> <td>1002</td> <td>Ryma Sen</td> <td>2012-12-11</td> <td>1990-12-15</td> <td>FEMALE</td> <td>D03</td> </tr> <tr> <td>1003</td> <td>Mohitesh</td> <td>2013-02-03</td> <td>1987-09-04</td> <td>MALE</td> <td>D05</td> </tr> <tr> <td>1007</td> <td>Anil Jha</td> <td>2014-01-17</td> <td>1984-10-19</td> <td>MALE</td> <td>D04</td> </tr> <tr> <td>1004</td> <td>Manila Sahai</td> <td>2012-12-09</td> <td>1986-11-14</td> <td>FEMALE</td> <td>D01</td> </tr> <tr> <td>1005</td> <td>R SAHAY</td> <td>2013-11-18</td> <td>1987-03-31</td> <td>MALE</td> <td>D02</td> </tr> <tr> <td>1006</td> <td>Jaya Priya</td> <td>2014-06-09</td> <td>1985-06-23</td> <td>FEMALE</td> <td>D05</td> </tr> </tbody> </table>				ENO	NAME	DOJ	DOB	GENDER	DCODE	1001	George K	2013-09-02	1991-09-01	MALE	D01	1002	Ryma Sen	2012-12-11	1990-12-15	FEMALE	D03	1003	Mohitesh	2013-02-03	1987-09-04	MALE	D05	1007	Anil Jha	2014-01-17	1984-10-19	MALE	D04	1004	Manila Sahai	2012-12-09	1986-11-14	FEMALE	D01	1005	R SAHAY	2013-11-18	1987-03-31	MALE	D02	1006	Jaya Priya	2014-06-09	1985-06-23	FEMALE	D05	
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		(i) Select DECODE, count(*) from EMPLOYEE group by DCODE where count(*)>1																																																				
		(ii) Select Max(DOB), Min(DOB) from EMPLOYEE																																																				
		(iii) Select Name, Gender from Employee where Dcode in ('D01','D02','D05') and DOB like '%-09-%'																																																				
	(h)	Write SQL queries for (i) to (iv) which are based on ITEMS table: (i) To display all the information of employee whose name begins with M in ascending order of their DOB (ii) To display name and DOJ of female employees working in DCODE D01 or D02 (iii) To Display number of employee gender wise. (iv) To Display unique DCODE from table Employee				4																																																
5		SECTION D																																																				
	(a)	It is a network command used to get domain related information like when domain was registered, when it will expire, domain registered to etc.				1																																																
	(b)	What is the benefit of e-Waste Recycling?				1																																																
	(c)	What are the various ways to protect against Identity Theft?				2																																																
	(d)	Posing as someone else online and using his/her personnel/financial information shopping online or posting something is a common type of cyber-crime these days. (a) What are such types of cyber-crime collectively called (b) What measures can we take to stop these?				2																																																
	(e)	What is plagiarism? Why it is punishable offence.				2																																																
	(f)	Write any two possible solutions for disability issues.				2																																																