

Series ISWK P1

083/1/1

Code No.

SET-1

Roll No.

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Candidates must write the Code on the title page of the answer-book.

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.

COMPUTER SCIENCE

Time allowed: 3 hours

Maximum Marks:

70

Qn 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 a relational operator? i. /= ii. <= iii. => iv. #	1
2	Write the type of tokens from the following. i. 3.14159 ii. Avg_Price	1
3	Name the python library module which is to be imported to invoke the following functions. i. load()	1

	ii. ceil()	
4	<p>Rewrite the following code in python after removing all syntax error(s). Underline each correction done in the code.</p> <pre> From=50 for J IN range(From, 0, -5): if J%2 = 0 AND J%3 == 0: Ans = J * 10 Else: Ans = J *20 print("Answer = ", Ans) </pre>	1
5	<p>Find the output of the following code:</p> <pre> T2=(100,80,45,21,16,18) s=0 t=0 for i in range(s,len(tup)): if T2[i] % 3 == 0: t=t+T2[i] print(t) </pre>	1
6	Name the operations performed over a Queue	1
7	<p>Identify the odd one out in Python from the following:</p> <p>i) continue ii) else iii) WHILE iv) break</p>	1
8	Write the difference between SMTP and POP	1
9	What do you mean by GROUP BY clause in SQL?	1
10	Write a statement in Python to create a dictionary STORE with "Biscuit", "Bread", "Milk" as keys and 35, 15 and 50 as values.	1
11	What do you mean by transmission medium?	1
12	<p>Given the tuple SalaryList = (5025,4985,3990,4150,3735,6390,1750)</p> <p>write the output of the following code:</p> <pre> print(SalaryList[2:5]) print(MarkList[-4:]) </pre>	1
13	What do you mean by domain?	1
14	<p>Find the invalid identifier(s) from the following</p> <p>a) price2 b) while c) Else d) 5Max</p>	1
15	<p>What will be the output of the following code?</p> <pre> X= (25,32,40,35,40,50,35,15,20) print (min(X)) </pre>	1
16	What do you mean by IN clause in SQL?	1
17	List any two DML commands.	1
18	Expand: WLL	1
19	What is the difference between WHERE clause and HAVING clause?	1
20	Write methods used in pickle module.	1
21	Define: Phishing and Spamming	1

22	<p>Consider the following table STATIONARY:</p> <table border="1" data-bbox="284 304 1157 651"> <thead> <tr> <th>ItemNo</th> <th>Item</th> <th>Dcode</th> <th>Qty</th> <th>UnitPrice</th> <th>StockDate</th> </tr> </thead> <tbody> <tr> <td>5005</td> <td>Ball Pen 0.5</td> <td>102</td> <td>100</td> <td>16</td> <td>2018-03-10</td> </tr> <tr> <td>5003</td> <td>Ball Pen 0.25</td> <td>102</td> <td>150</td> <td>20</td> <td>2017-05-17</td> </tr> <tr> <td>5002</td> <td>Gel Pen Premium</td> <td>101</td> <td>125</td> <td>14</td> <td>2018-04-20</td> </tr> <tr> <td>5006</td> <td>Gel Pen Classic</td> <td>101</td> <td>200</td> <td>22</td> <td>2018-10-08</td> </tr> <tr> <td>5001</td> <td>Eraser Small</td> <td>102</td> <td>210</td> <td>5</td> <td>2018-03-11</td> </tr> <tr> <td>5004</td> <td>Eraser Big</td> <td>102</td> <td>60</td> <td>10</td> <td>2017-11-18</td> </tr> <tr> <td>5009</td> <td>Sharpener Classic</td> <td>NULL</td> <td>160</td> <td>8</td> <td>2017-06-12</td> </tr> </tbody> </table>	ItemNo	Item	Dcode	Qty	UnitPrice	StockDate	5005	Ball Pen 0.5	102	100	16	2018-03-10	5003	Ball Pen 0.25	102	150	20	2017-05-17	5002	Gel Pen Premium	101	125	14	2018-04-20	5006	Gel Pen Classic	101	200	22	2018-10-08	5001	Eraser Small	102	210	5	2018-03-11	5004	Eraser Big	102	60	10	2017-11-18	5009	Sharpener Classic	NULL	160	8	2017-06-12	4
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	Identify candidate keys from the above table.																																																	
	What is the degree and cardinality of the above table after adding 2 columns and removing 3 column?																																																	
	Insert a record in the above table for ITEMNO : 5026, ITEM: WRITING PAD and UNIT PRICE : 15																																																	
	Remove the column STOCKDATE from the table.																																																	
	Find output of the following: SELECT DCODE, AVG(QTY) FROM STATIONARY GROUP BY DCODE HAVING SUM(QTY) > 500;																																																	
23	<pre>import _____ #Line1 F1=open("emp.csv", _____newline="\n") #Line2 open the file for writing records dt = writer(f) while True: ecode= int(input("Enter emp code")) ename = input("Enter emp name:") sal = int(input("Enter salary:")) dt._writeros([ecode, ename, sal]) print("Record has been added.") print("Want to add more record?Type YES!!!") ch = input() ch = ch.upper() if ch=="YES": print("*****") else: break F1._____ #Line 3 to close the file record = list() with open('emp.csv', _____) as f: #Line 4 to open the file in read mode data = csv._____ (f) #Line 5 for row in data: record.append(row)</pre>	4																																																
	Fill in the blank in Line1																																																	
	Fill in the mathblank in Line2																																																	
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	Fill in the blank in Line5	
	Part – B	
	Section – I	
24	<p>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 values that can be assigned to each of the variables Low and High</p> <pre>import random Num = [5,10,15,20,25,30,35,40,45,50] Low=random.randint(1,3) High=random.randint(Low,5) For J in range (Low, High+1): print(Num[J],"*")</pre> <p>(i) 20*25*30* (ii) 20*25*30*35* (iii) 25*30*35*40* (iv) 25*30*35*40*45*</p>	2
25	Explain about alternate keys and candidate keys in dbms.	2
26	Expand the following terms: a. ICMP b. LAN c. TCP d. SMTP	2
27	<p>Rewrite the following code in python after removing all syntax error(s). Underline each correction done in the code.</p> <pre>Num = Int(input("Number:")) SUM = 0 for K in range(10, Num, 2): SUM=+ K if K%2 != 0 print (K*5) else: Print (K*10) print (Sum)</pre>	2
28	Write a short note on Trojan Horse virus.	2
29	What is the use of fetchone() and fetchone() method in python mysql connectivity.	2
30	<p>Find and write the output of the following Python code:</p> <pre>def makenew(mystr): newstr = "" count = 0 for i in mystr: if count%2 != 0: newstr = newstr + str(count) else: if i.isupper(): newstr = newstr + i.lower() else: newstr = newstr + i.upper() count += 1 newstr = newstr + mystr[:1] print("The new string is:", newstr)</pre>	2

	makenew("Cellular Technology")																																																																															
31	What do you mean by formal parameter and actual parameter in function?	2																																																																														
32	Evaluate the following expressions: a) $10 ** 3 * 5 + 20 - 5$ b) $22 > 65$ and $40 > 26$ or $20 > 30$	2																																																																														
33	Explain the primary key and unique constraint in mysql with example.	2																																																																														
	Section – II																																																																															
34	<p>Write outputs for SQL queries (i) to (iii), which are based on the following tables, CUSTOMERS and PURCHASES:</p> <p>CUSTOMERS</p> <table border="1"> <thead> <tr> <th>CNO</th> <th>CNAME</th> <th>CITY</th> </tr> </thead> <tbody> <tr> <td>C1</td> <td>SANYAM</td> <td>DELHI</td> </tr> <tr> <td>C2</td> <td>SHRUTI</td> <td>DELHI</td> </tr> <tr> <td>C3</td> <td>MAHER</td> <td>MUMBAI</td> </tr> <tr> <td>C4</td> <td>SAKSHI</td> <td>CHENNAI</td> </tr> <tr> <td>C5</td> <td>RITESH</td> <td>INDORE</td> </tr> <tr> <td>C6</td> <td>RAHUL</td> <td>DELHI</td> </tr> <tr> <td>C7</td> <td>AMEER</td> <td>CHENNAI</td> </tr> <tr> <td>C8</td> <td>MINAKSHI</td> <td>BANGALORE</td> </tr> <tr> <td>C9</td> <td>ANSHUL</td> <td>MUMBAI</td> </tr> </tbody> </table> <p>PURCHASES</p> <table border="1"> <thead> <tr> <th>SNO</th> <th>QTY</th> <th>PUR_DATE</th> <th>CNO</th> </tr> </thead> <tbody> <tr> <td>S1</td> <td>15</td> <td>2018-11-25</td> <td>C2</td> </tr> <tr> <td>S2</td> <td>10</td> <td>2018-11-10</td> <td>C1</td> </tr> <tr> <td>S3</td> <td>12</td> <td>2018-11-10</td> <td>C4</td> </tr> <tr> <td>S4</td> <td>7</td> <td>2019-01-12</td> <td>C7</td> </tr> <tr> <td>S5</td> <td>11</td> <td>2019-02-12</td> <td>C2</td> </tr> <tr> <td>S6</td> <td>10</td> <td>2018-10-12</td> <td>C6</td> </tr> <tr> <td>S7</td> <td>5</td> <td>2019-05-09</td> <td>C8</td> </tr> <tr> <td>S8</td> <td>20</td> <td>2019-05-09</td> <td>C3</td> </tr> <tr> <td>S9</td> <td>8</td> <td>2018-05-09</td> <td>C9</td> </tr> <tr> <td>S10</td> <td>15</td> <td>2018-11-12</td> <td>C5</td> </tr> <tr> <td>S11</td> <td>6</td> <td>2018-08-04</td> <td>C7</td> </tr> </tbody> </table> <p>i) SELECT DISTINCT CITY FROM CUSTOMERS; ii) SELECT MAX(QTY), MIN(QTY) FROM PURCHASES WHERE CNO IN ("C1","C4","C7"); iii) SELECT CNAME, QTY, PUR_DATE FROM CUSTOMERS, PURCHASES WHERE CUSTOMERS.CNO=PURCHASE.CNO AND QTY < 10;</p>	CNO	CNAME	CITY	C1	SANYAM	DELHI	C2	SHRUTI	DELHI	C3	MAHER	MUMBAI	C4	SAKSHI	CHENNAI	C5	RITESH	INDORE	C6	RAHUL	DELHI	C7	AMEER	CHENNAI	C8	MINAKSHI	BANGALORE	C9	ANSHUL	MUMBAI	SNO	QTY	PUR_DATE	CNO	S1	15	2018-11-25	C2	S2	10	2018-11-10	C1	S3	12	2018-11-10	C4	S4	7	2019-01-12	C7	S5	11	2019-02-12	C2	S6	10	2018-10-12	C6	S7	5	2019-05-09	C8	S8	20	2019-05-09	C3	S9	8	2018-05-09	C9	S10	15	2018-11-12	C5	S11	6	2018-08-04	C7	3
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35	Write a function in Python ADDQ(AR), where AR is a Queue implemented by a list of numbers. From this list insert all the even numbers a Queue implemented by using a list. Display the Queue if it has at least one element, otherwise display appropriate error message..	3																																																																														

36	Write a function CountPET() in Python, which should read each character of a text file SCIENCE.TXT, should count and display the occurrence of vowels (P or E or T – only upper case letters).	3																																																																						
37	Write a python method/function CountSum(L1) to find and display the count and sum of all even numbers and odd numbers separately from the list L1 passes as an argument. Also find the difference between the sum of Even and Odd Nos.	3																																																																						
Section – III																																																																								
38	<p>Hindustan Connecting World Association⁴ is planning to start their offices in four major cities in India to provide regional IT infrastructure support in the field of Education & Culture. The company has planned to set up their head office in New Delhi in three locations and have named their New Delhi offices as "Sales Office", "Head Office" and "Tech Office". The company's regional offices are located at "Coimbatore", "Kolkata" and "Ahmedabad".</p> <p>A rough layout of the same is as follows: Approximate distances between these offices as per network survey team is as follows:</p> <table border="1" data-bbox="268 584 662 705"> <thead> <tr> <th>Place From</th> <th>Place To</th> <th>Distance</th> </tr> </thead> <tbody> <tr> <td>Head Office</td> <td>Sales Office</td> <td>10 KM</td> </tr> <tr> <td>Head Office</td> <td>Tech Office</td> <td>70 Meter Head</td> </tr> <tr> <td>Office</td> <td>Kolkata Office</td> <td>1291 KM Head</td> </tr> <tr> <td>Office</td> <td>Ahmedabad Office</td> <td>790 KM Head</td> </tr> <tr> <td>Office</td> <td>Coimbatore Office</td> <td>1952 KM</td> </tr> </tbody> </table> <p>In continuation of the above, the company experts have planned to install the following number of computers in each of their offices:</p> <table border="1" data-bbox="268 712 662 784"> <tbody> <tr> <td>Head Office</td> <td>100</td> </tr> <tr> <td>Sales Office</td> <td>20</td> </tr> <tr> <td>Tech Office</td> <td>50</td> </tr> <tr> <td>Kolkata Office</td> <td>50</td> </tr> <tr> <td>Ahmedabad Office</td> <td>50</td> </tr> <tr> <td>Coimbatore Office</td> <td>50</td> </tr> </tbody> </table> <p>(i) Suggest network type (out of LAN, MAN, WAN) for connecting each of the following set of their offices: - Head Office and Tech Office - Head Office and Coimbatore Office -</p> <p>(ii) Which device will you suggest to be procured by the company for connecting all the computers within each of their offices out of the following devices? - Modem - Telephone - Switch/ Hub -</p> <p>(iii) Which of the following communication media, will you suggest to be procured by the company for connecting their local offices in New Delhi for very effective and fast communication? - Ethernet Cable - Optical Fiber - Telephone Cable</p> <p>(iv) Suggest a cable/ wiring layout for connecting the company's local offices located in New Delhi.</p> <p>(v) Also suggest most suitable cable layout for the above setup.</p>	Place From	Place To	Distance	Head Office	Sales Office	10 KM	Head Office	Tech Office	70 Meter Head	Office	Kolkata Office	1291 KM Head	Office	Ahmedabad Office	790 KM Head	Office	Coimbatore Office	1952 KM	Head Office	100	Sales Office	20	Tech Office	50	Kolkata Office	50	Ahmedabad Office	50	Coimbatore Office	50	5																																								
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39	<p>Consider the following table EMPLOYEE and write answer of the following queries(i to vi)</p> <table border="1" data-bbox="268 1579 885 1859"> <thead> <tr> <th>EmployeeID</th> <th>EmployeeName</th> <th>EmployeeCity</th> <th>DeptName</th> <th>Salary</th> </tr> </thead> <tbody> <tr> <td>127323</td> <td>Amit Sharma</td> <td>Bhopal</td> <td>STORE</td> <td>12000</td> </tr> <tr> <td>526689</td> <td>Deepak Tiwari</td> <td>Indore</td> <td>ACCOUNTS</td> <td>15000</td> </tr> <tr> <td>843795</td> <td>Monika Baranwal</td> <td>Indore</td> <td>PURCHASE</td> <td>25000</td> </tr> <tr> <td>328717</td> <td>Joseph Mathew</td> <td>Jabalpur</td> <td>PURCHASE</td> <td>30000</td> </tr> <tr> <td>444527</td> <td>Kadar Khan</td> <td>Balaghat</td> <td>STORE</td> <td>16000</td> </tr> <tr> <td>659831</td> <td>Shirish Jain</td> <td>Balaghat</td> <td>STORE</td> <td>16000</td> </tr> <tr> <td>847674</td> <td>Sunita Gupta</td> <td>Balaghat</td> <td>STORE</td> <td>10000</td> </tr> <tr> <td>748681</td> <td>Kamlesh Singh</td> <td>Jabalpur</td> <td>ACCOUNTS</td> <td>17000</td> </tr> <tr> <td>555935</td> <td>Hemant Thakur</td> <td>Jabalpur</td> <td>ACCOUNTS</td> <td>32000</td> </tr> <tr> <td>539569</td> <td>Manoj Tamrakar</td> <td>Indore</td> <td>ACCOUNTS</td> <td>5000</td> </tr> <tr> <td>733843</td> <td>Shailendra Borker</td> <td>Bhopal</td> <td>COMPUTER</td> <td>18000</td> </tr> <tr> <td>631548</td> <td>Pradeep Namdeo</td> <td>Bhopal</td> <td>COMPUTER</td> <td>20000</td> </tr> <tr> <td>839139</td> <td>Sarita Mishra</td> <td>Indore</td> <td>STORE</td> <td>6000</td> </tr> </tbody> </table> <p>1. Write SQL command to show the details of all employees in ascending order of their name.</p> <p>2. Write SQL command to show total number of employees in each department</p>	EmployeeID	EmployeeName	EmployeeCity	DeptName	Salary	127323	Amit Sharma	Bhopal	STORE	12000	526689	Deepak Tiwari	Indore	ACCOUNTS	15000	843795	Monika Baranwal	Indore	PURCHASE	25000	328717	Joseph Mathew	Jabalpur	PURCHASE	30000	444527	Kadar Khan	Balaghat	STORE	16000	659831	Shirish Jain	Balaghat	STORE	16000	847674	Sunita Gupta	Balaghat	STORE	10000	748681	Kamlesh Singh	Jabalpur	ACCOUNTS	17000	555935	Hemant Thakur	Jabalpur	ACCOUNTS	32000	539569	Manoj Tamrakar	Indore	ACCOUNTS	5000	733843	Shailendra Borker	Bhopal	COMPUTER	18000	631548	Pradeep Namdeo	Bhopal	COMPUTER	20000	839139	Sarita Mishra	Indore	STORE	6000	5
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	<p>3. Write SQL command to show City wise total salary where total salary is more than 50000</p> <p>4. Write output for SELECT EmployeeCity, COUNT(*) "Total Employees" FROM EMPLOYEE GROUP BY EmployeeCity</p> <p>5. Write output for SELECT MAX(Salary), DeptName FROM EMPLOYEE GROUP BY DeptName HAVING SUM(Salary)>50000</p>	
40	<p>A binary file "Stock.dat" has structure (itemno, itemname, itemprice, itemdiscount). Write a function CountItems() in Python that would read contents of the file "Stock.dat" and display the details of those stocks whose price is less than Rs. 1,000. Also display number of item with the price less than Rs. 1,000.</p>	5

All the Best

I.VERY SHORT ANSWER: - 15x1=15