



# M.G.M HIGHER SECONDARY SCHOOL

Sector-4F, Bokaro Steel City, Jharkhand

Sample Question Paper

## COMPUTER SCIENCE-083

Set-2 (Theory)

Class-XII

Total Marks- 70

Total Time- 3 Hours

### General Instructions:

1. This question paper contains two parts A and B. Each part is compulsory.
2. **Part-A** has two 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.
3. **Part - B** is Descriptive Paper.
4. **Part- B** has three sections:
  - a. **Section-I** is short answer questions of 2 marks each.
  - b. **Section-II** is long answer questions of 3 marks each.
  - c. **Section-III** is very long answer questions of 5 marks each.
5. All programming questions are to be answered using Python Language only.

**PART A****Section-I- Short Answer Type Questions****Attempt any 15 questions from question no 1 to 21.**

QUESTION NO.	QUESTION	MARKS ALLOCATED
1	In order to find square root and power which module is to be imported?	1
2	What will be the output of following Python code? <pre>list1=["Python","Java","c","C","C++"] print(min(list1))</pre> <p>a) C b) C++ c) C d) min function cannot be used on string elements</p>	1
3	Name the function that is responsible to write data into CSV format.	1
4	Write the use of string.isalnum() function.	1
5	What will be the output of the following Python code? <pre>&gt;&gt;&gt; my_tuple = (1,2,3,4) &gt;&gt;&gt; my_tuple.append((5,6,7)) &gt;&gt;&gt;print len(my_tuple)</pre> <p>a) 1 b) 2 c) 5 d) Error</p>	
6	Which of the following is not a declaration of the dictionary? <p>a) {1: 'A', 2: 'B'} b) dict([[1,"A"],[2,"B"]]) c) {1,"A",2"B"} d) { }</p>	1
7	What is the output of the following code: <pre>&gt;&gt;&gt; aTuple = (100, 200, 300, 400, 500) &gt;&gt;&gt; aTuple[1]=800 &gt;&gt;&gt; print(aTuple)</pre>	

	<ul style="list-style-type: none"> <li>a) TypeError</li> <li>b) (100, 800, 200, 300, 400, 500)</li> <li>c) (800, 100, 200, 300, 400, 500)</li> </ul>	
<b>8</b>	Expand POP3.	<b>1</b>
<b>9</b>	<p>In SQL the spaces at the end of the string are removed by _____ function.</p> <ul style="list-style-type: none"> <li>a) Upper</li> <li>b) String</li> <li>c) Trim</li> <li>d) Lower</li> </ul>	<b>1</b>
<b>10</b>	<p>A _____ is the physical path over which a message travels.</p> <ul style="list-style-type: none"> <li>a) Path</li> <li>b) Medium</li> <li>c) Protocol</li> <li>d) Route</li> </ul>	<b>1</b>
<b>11</b>	What are the different types of statements supported by SQL?	<b>1</b>
<b>12</b>	Name the built-in mathematical function / method that is used to return a natural logarithm for a number.	<b>1</b>
<b>13</b>	<p>Which of this is not a network edge device?</p> <ul style="list-style-type: none"> <li>a) PC</li> <li>b) Smartphones</li> <li>c) Servers</li> <li>d) Switch</li> </ul>	<b>1</b>
<b>14</b>	What is the similarity between list and string?	<b>1</b>
<b>15</b>	<p>_____ clause is an additional filter that is applied to the result.</p> <ul style="list-style-type: none"> <li>a) Select</li> <li>b) Group-by</li> <li>c) Having</li> <li>d) Order by</li> </ul>	<b>1</b>
<b>16</b>	<p>How many versions available of IP?</p> <ul style="list-style-type: none"> <li>a) 6 version</li> <li>b) 4 version</li> <li>c) 2 version</li> <li>d) 1 version</li> </ul>	

17	<p>In an employee table to include the attributes whose value always have some value which of the following constraint must be used?</p> <p>a) Null b) Not null c) Unique d) Distinct</p>	1
18	<p>What will be the output of below Python code?</p> <pre>&gt;&gt;&gt; str1="Aplication" &gt;&gt;&gt; str2=str1.replace('a','A') &gt;&gt;&gt; print(str2)</pre> <p>a) application b) Application c) ApplicAtion d) applicAtion</p>	1
19	<p>Consider the following:</p> <p>a) Twisted pair cables b) Microwaves and Satellite Signals c) Repeaters d) Analog Transmissions e) Fiber optics</p> <p>Which of the above is consider as (a) signal transmission medium is data communications?</p> <p>a) (1) and (5) b) (1) and (2) c) (1) (2) and (5) d) (1) (2) (3) and (5)</p>	1
20	<p><b>SELECT COUNT</b> (____ ID) <b>FROM</b> teaches <b>WHERE</b> semester = 'Spring' <b>AND YEAR</b> = 2010;</p>	1

	<p>If we do want to eliminate duplicates, we use the keyword _____ in the aggregate expression.</p> <p>a) Distinct b) Count c) Avg d) Primary key</p>	
<b>21</b>	<p>When the mail server sends mail to other mail servers it becomes ____ ?</p> <p>a) SMTP client b) SMTP server c) Peer d) Master</p>	<b>1</b>

**Section-II Case Studies Questions**

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

QUESTION NO.	QUESTION	MARKS ALLOCATED																																																
<b>22</b>	<p>A shoe making company XYZ is considering to maintain the records of their worker using SQL to store the data. As a database administrator, Abhishek has decided that :</p> <ul style="list-style-type: none"> <li>• Name of the database – Worker_details</li> <li>• Name of the table - WORKER</li> </ul> <div style="text-align: center; margin: 10px 0;"> <p><b>Table : WORKER</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">WNO</th> <th style="text-align: left;">NAME</th> <th style="text-align: left;">DOJ</th> <th style="text-align: left;">DOB</th> <th style="text-align: left;">GENDER</th> <th style="text-align: left;">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> </div>	WNO	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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	<p>(a) Identify the attribute best suitable to be declared as a primary key as well as foreign key.</p>	<b>1</b>																																																

	(b) Write the degree and cardinality of the table WORKER.	<b>1</b>
	(c) How Abhishek will get the total number of worker working in this company?	<b>1</b>
	(d) Abhishek want to remove the name of Jaya Priya from the table. How it is possible?	<b>1</b>
	(e) Now Abhishek wants to add one more entry of new worker Amisha with number 1010, Date of birth being 02-02-1994. How he will do this?	<b>1</b>
<b>23</b>	<p>Rajeev sir class teacher of class XI is writing a program to create a Comma Separated file “Studrecord.dat” which will contain roll no., name of student and total marks obtained by the students of his class. He has written the following code. As a programmer, help him to successfully execute the given task.</p> <pre> import _____ #Line 1 f=open("student.csv","w",newline=") s=csv._____ (f) #Line 2 s.writerow(['RollNo','Name','Marks']) rec=[] while ____: #Line 3     print("ENTER STUDENT DETAILS: ")     r=int(input("ENTER ROLL NO.: "))     n=input("ENTER NAME: ")     m=int(input("ENTER MARKS: "))     stu=[r,n,m]     rec.____(stu) #Line 4 ch=input("DO YOU WANT TO INSERT MORE RECORDS (Y/N): ") if ch=='n' or ch=='N':     break for i in rec:     s.____(i) #Line 5 f.close() </pre>	
	Name the module that should be imported in line 1.	<b>1</b>
	Write the method through which sir will able to write data's into the file in line 2.	<b>1</b>

	Write down the condition for while loop in order to insert more data's into the file in line 3.	<b>1</b>
	Write the method through which data can be added with the empty list in line 4.	<b>1</b>
	Write the function through which sir will able to store data's into the file in line 5 one by one.	<b>1</b>

## PART B

### Section-I- Short Answer Type Questions

QUESTION NO.	QUESTION	MARKS ALLOCATED																									
<b>24</b>	Differentiate between mutable and immutable objects in Python with example.	<b>2</b>																									
<b>25</b>	Expand the following terms: a) TCP b) VoIP c) SSL d) FTP	<b>2</b>																									
<b>26</b>	Write a MySQL-Python connectivity to retrieve data, one record at a time, from city table for employees with id less than 10.	<b>2</b>																									
<b>27</b>	Observe the table 'Club' given below: <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Member_id</th> <th>Member_Name</th> <th>Address</th> <th>Age</th> <th>Fee</th> </tr> </thead> <tbody> <tr> <td>M001</td> <td>Sumit</td> <td>New Delhi</td> <td>20</td> <td>2000</td> </tr> <tr> <td>M002</td> <td>Amit</td> <td>Punjab</td> <td>23</td> <td>2100</td> </tr> <tr> <td>M003</td> <td>Sachin</td> <td>Mumbai</td> <td>23</td> <td>2000</td> </tr> <tr> <td>M004</td> <td>Ayushi</td> <td>Faridabad</td> <td>22</td> <td>2200</td> </tr> </tbody> </table> <p>a) What is the cardinality and degree of the above given table? b) If a new column contact_no has been added and three more members have joined the club then how these changes will affect the degree and cardinality of the above given table.</p>	Member_id	Member_Name	Address	Age	Fee	M001	Sumit	New Delhi	20	2000	M002	Amit	Punjab	23	2100	M003	Sachin	Mumbai	23	2000	M004	Ayushi	Faridabad	22	2200	<b>2</b>
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<b>28</b>	Explain with the help of examples: a) Degree b) Cardinality	<b>2</b>																									

29	What is firewall? Explain its use in modern scenario.	2
30	<p>Rewrite the following code in python after removing all syntax error(s). Underlining each correction done in the code.</p> <pre>30=x For I in range(2,6)     if x&gt;30:         print("true")     else         Print("False")</pre>	2
31	<p>Give output of the following:</p> <pre>def ChangeLst(): L=[] L1=[] L2=[] for i in range(1,10):     L.append(i) for i in range(10,1,-2):     L1.append(i) for i in range(len(L1)):     L2.append(L1[i]+L[i]) L2.append(len(L)-len(L1)) print(L2)</pre>	2
32	<p>What possible outputs are expected to be displayed on the 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 variable c.</p> <pre>import random temp=[10,20,30,40,50,60] c=random.randint(0,4) for I in range(0, c):     print(temp[i],”#”)</pre> <p>a) 10#20# b) 10#20#30#40#50#</p>	2



	c) 10#20#30# d) 50#60#	
33	Can a function return multiple values? How?	2

**Section-II-Long Answer Questions**

QUESTION NO.	QUESTION	MARKS ALLOCATED																																																														
34	<p>Consider the following tables <b>store</b> and <b>item</b>.</p> <p align="center"><b>TABLE : STORE</b></p> <table border="1"> <thead> <tr> <th>SNo</th> <th>SName</th> <th>Area</th> </tr> </thead> <tbody> <tr> <td>S01</td> <td>ABC Computronics</td> <td>GK II</td> </tr> <tr> <td>S02</td> <td>All Infotech Media</td> <td>CP</td> </tr> <tr> <td>S03</td> <td>Tech Shoppe</td> <td>Nehru Place</td> </tr> <tr> <td>S04</td> <td>Geeks Tecno Soft</td> <td>Nehru Place</td> </tr> <tr> <td>S05</td> <td>Hitech Tech Store</td> <td>CP</td> </tr> </tbody> </table> <p align="center"><b>TABLE : ITEM</b></p> <table border="1"> <thead> <tr> <th>INo</th> <th>IName</th> <th>Price</th> <th>SNo</th> </tr> </thead> <tbody> <tr> <td>T01</td> <td>Mother Board</td> <td>12000</td> <td>S01</td> </tr> <tr> <td>T02</td> <td>Hard Disk</td> <td>5000</td> <td>S01</td> </tr> <tr> <td>T03</td> <td>Keyboard</td> <td>500</td> <td>S02</td> </tr> <tr> <td>T04</td> <td>Mouse</td> <td>300</td> <td>S01</td> </tr> <tr> <td>T05</td> <td>Mother Board</td> <td>13000</td> <td>S02</td> </tr> <tr> <td>T06</td> <td>Keyboard</td> <td>400</td> <td>S03</td> </tr> <tr> <td>T07</td> <td>LCD</td> <td>6000</td> <td>S04</td> </tr> <tr> <td>T08</td> <td>LCD</td> <td>5500</td> <td>S05</td> </tr> <tr> <td>T09</td> <td>Mouse</td> <td>350</td> <td>S05</td> </tr> <tr> <td>T10</td> <td>Hard Disk</td> <td>4500</td> <td>S03</td> </tr> </tbody> </table> <p>Write the output of the following SQL commands:</p> <p>(i) select distinct iname from item Where price &gt;=5000;</p> <p>(ii) select area, count(*) From store group by area;</p> <p>(iii) select count(distinct area) from store;</p>	SNo	SName	Area	S01	ABC Computronics	GK II	S02	All Infotech Media	CP	S03	Tech Shoppe	Nehru Place	S04	Geeks Tecno Soft	Nehru Place	S05	Hitech Tech Store	CP	INo	IName	Price	SNo	T01	Mother Board	12000	S01	T02	Hard Disk	5000	S01	T03	Keyboard	500	S02	T04	Mouse	300	S01	T05	Mother Board	13000	S02	T06	Keyboard	400	S03	T07	LCD	6000	S04	T08	LCD	5500	S05	T09	Mouse	350	S05	T10	Hard Disk	4500	S03	3
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35	<p>Astha wants to create a program that accepts a string and display the character in the reverse order in the same line using stack. She has created the following code , help her by completing the definitions on the basis of requirements given below :</p> <pre> class mystack: def  init (self): self.mystr=                # Accept a string self.mylist =              # Convert mystr to a list </pre>	3																																																														

	# Write code to display while removing element from the stack. def display(self): : : :	
36	Write a user defined function in Python that displays number of lines starting with 'H' present in the text file Poem.txt.	3
37	Write the definition of a function reverse(X) in Python to display the elements in reverse order such that each displayed element is twice of the original element of the list X. For example: if the input List X is [4,8,7,5,6,11,10] then the function produces output as – 20, 22, 12, 10, 14, 16, 8	3

**Section-III-Very Long Answer Type Questions**

QUESTION NO.	QUESTION	MARKS ALLOCATED																																																																								
38	<p>Consider the following tables <b>CUSTOMER</b> and <b>ONLINESHOP</b>:</p> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="5">TABLE : CUSTOMER</th> </tr> <tr> <th>CID</th> <th>CNAME</th> <th>GENDER</th> <th>SID</th> <th>AREA</th> </tr> </thead> <tbody> <tr><td>1001</td><td>R SHARMA</td><td>FEMALE</td><td>101</td><td>NORTH</td></tr> <tr><td>1002</td><td>M R TIWARY</td><td>MALE</td><td>102</td><td>SOUTH</td></tr> <tr><td>1003</td><td>M K KHAN</td><td>MALE</td><td>103</td><td>EAST</td></tr> <tr><td>1004</td><td>A K SINGH</td><td>MALE</td><td>102</td><td>EAST</td></tr> <tr><td>1005</td><td>S SEN</td><td>FEMALE</td><td>101</td><td>WEST</td></tr> <tr><td>1006</td><td>R DUBEY</td><td>MALE</td><td>104</td><td>NORTH</td></tr> <tr><td>1007</td><td>M AGARWAL</td><td>FEMALE</td><td>104</td><td>NORTH</td></tr> <tr><td>1008</td><td>S DAS</td><td>FEMALE</td><td>103</td><td>SOUTH</td></tr> <tr><td>1009</td><td>R K PATIL</td><td>MALE</td><td>102</td><td>NORTH</td></tr> <tr><td>1010</td><td>N KRISHNA MURTY</td><td>MALE</td><td>102</td><td>SOUTH</td></tr> </tbody> </table> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2">TABLE : ONLINESHOP</th> </tr> <tr> <th>SID</th> <th>SHOP</th> </tr> </thead> <tbody> <tr><td>101</td><td>MY BUY</td></tr> <tr><td>102</td><td>ECO BUY</td></tr> <tr><td>103</td><td>JUST SHOPPING</td></tr> <tr><td>104</td><td>SHOPPING EASY</td></tr> </tbody> </table> <p>Write SQL commands for the statements (i) to (v)</p> <p>I. To display cname, area of field where customers are female from CUSTOMER table.</p> <p>II. To display the details of all the customers in ascending order of CNAME within SID.</p>	TABLE : CUSTOMER					CID	CNAME	GENDER	SID	AREA	1001	R SHARMA	FEMALE	101	NORTH	1002	M R TIWARY	MALE	102	SOUTH	1003	M K KHAN	MALE	103	EAST	1004	A K SINGH	MALE	102	EAST	1005	S SEN	FEMALE	101	WEST	1006	R DUBEY	MALE	104	NORTH	1007	M AGARWAL	FEMALE	104	NORTH	1008	S DAS	FEMALE	103	SOUTH	1009	R K PATIL	MALE	102	NORTH	1010	N KRISHNA MURTY	MALE	102	SOUTH	TABLE : ONLINESHOP		SID	SHOP	101	MY BUY	102	ECO BUY	103	JUST SHOPPING	104	SHOPPING EASY	5
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- III. To display the total number of customers for each area from CUSTOMER table.
- IV. To display cname and corresponding shop from CUSTOMER table and ONLINESHOP table.
- V. To count the total of male and female customer.

39

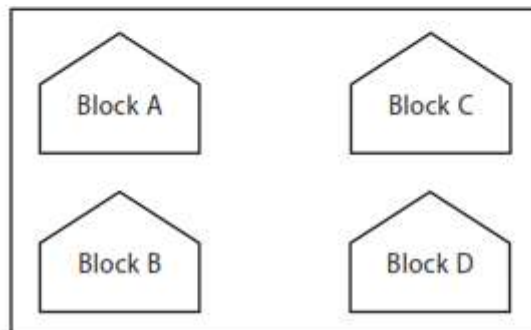
Knowledge Supplement Organization has set up its new centre at Mangalore for its office and web-based activities. It has 4 blocks of buildings as shown in the diagram below:

Centre to centre distances between various blocks:

Block A to Block B	50 m
Block B to Block C	150 m
Block C to Block D	25 m
Block A to Block D	170 m
Block B to Block D	125 m
Block A to Block C	90 m

Number of computers:

Block A	25
Block B	50
Block C	125
Block D	10



- (i) Suggest the network implemented.
- (ii) Suggest the most suitable place (*i.e.*, block) to house the server of this organization with a suitable reason.
- (iii) Suggest the placement of the following devices with justification:
  - (a) Repeater
  - (b) Hub/Switch

5

	(iv) The organization is planning to link its front office situated in the city in a hilly region where cable connection is not feasible. Suggest an economic way to connect it with reasonably high speed.	
<b>40</b>	A CSV file “Studentrec.csv” has structure [Roll_No, Student_Name, Total_marks_obtained,Overall_grade].  i. Write a user defined function <i>CreateFile()</i> to input data for a record and add to Studentrec.csv.  ii. Write a function <i>ReadRec()</i> in Python which will read the record and display it.	<b>5</b>

