



M.G.M HIGHER SECONDARY SCHOOL

Sector-4F, Bokaro Steel City, Jharkhand

Sample Question Paper

Computer Science-083

Set-1 (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.
 - b. **Section-II** is long answer questions of 3 marks.
 - c. **Section-III** is very long answer questions of 5 marks.
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	Which among the following is not a keyword? a) None b) def c) while d) Backslash	1
2	What will be the output of below Python code? list1=[8,0,9,5] print(list1[::-1]) a) [5,9,0,8] b) [8,0,9] c) [8,0,9,5] d) [0,9,5]	1
3	Expand the term CSV.	1
4	Which of the following has the highest precedence? a) ** b) % c) & d) d //	1
5	Suppose t = (1, 2, 4, 3), which of the following is incorrect? a) print(t[3]) b) t[3] = 45 c) print(max(t)) d) print(len(t))	1
6	Which of the following will give error? Suppose dict1={"a":1,"b":2,"c":3} a) print(len(dict1)) b) print(dict1.get("b")) c) dict1["a"]=5 d) None of these.	1

7	<p>What will be the output of the following Python code?</p> <pre>>>>t=(1,2) >>>2*t</pre> <p>a) (1, 2, 1, 2) b) [1, 2, 1, 2] c) (1, 1, 2, 2) d) [1, 1, 2, 2]</p>	1
8	Expand SMTP.	1
9	<p>CREATE TABLE employee (name VARCHAR, id INTEGER)</p> <p>What type of statement is this?</p> <p>a) DML b) DDL c) View d) Integrity constraint</p>	1
10	<p>"Parity bits" are used for which of the following purposes?</p> <p>a) Encryption of data b) To transmit faster c) To detect errors d) To identify the user</p>	1
11	In SQL, write the query to display the list of tables stored in a database.	1
12	Name the built-in mathematical function / method that is used to return an absolute value of a number.	1
13	<p>Which one of the following is the most common internet protocol?</p> <p>a) HTML b) NetBEUI c) TCP/IP d) IPX/SPX</p>	1
14	What is the difference between list and tuple?	1
15	<p>To remove a relation from an SQL database, we use the _____ command.</p> <p>a) Delete b) Purge c) Remove d) Drop table</p>	1



<p>16</p>	<p>Which software prevents the external access to a system?</p> <p>a) Firewall b) Gateway c) Router d) Virus checker</p>	<p>1</p>
<p>17</p>	<p>SELECT * FROM employee WHERE dept name= “ Information Technology”</p> <p>In the SQL given above there is an error. Identify the error.</p> <p>a) Dept_name b) Employee c) “Information Technology” d) From</p>	<p>1</p>
<p>18</p>	<p>Which of the following is False?</p> <p>a) String is immutable. b) capitalize() function in string is used to return a string by converting the whole given string into uppercase. c) lower() function in string is used to return a string by converting the whole given string into lowercase. d) None of these.</p>	<p>1</p>
<p>19</p>	<p>What kind of transmission medium is most appropriate to carry data in a computer network that is exposed to electrical interferences?</p> <p>a) Unshielded twisted pair b) Optical fiber c) Coaxial cable d) Microwave</p>	<p>1</p>
<p>20</p>	<p>The term attribute refers to a _____ of a table.</p> <p>a) Record b) Column c) Tuple d) Key</p>	<p>1</p>
<p>21</p>	<p>The maximum length (in bytes) of an IPv4 datagram is?</p> <p>a) 32 b) 1024</p>	<p>1</p>



c) 65535

d) 512

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																																										
22	<p>A Multinational Company XYZ is considering to maintain the records of their employee using SQL to store the data. As a database administrator, Abhinay has decided that :</p> <ul style="list-style-type: none">Name of the database - dbName of the table - EMPLOYEE <p>EMPLOYEE</p> <table border="1"><thead><tr><th>EMPID</th><th>FIRSTNAME</th><th>LASTNAME</th><th>Hire Date</th><th>ADDRESS</th><th>CITY</th></tr></thead><tbody><tr><td>1001</td><td>George</td><td>Smith</td><td>11-May-06</td><td>83 first street</td><td>Paris</td></tr><tr><td>1002</td><td>Mary</td><td>Jones</td><td>25-Feb-08</td><td>842 Vine Ave</td><td>Losantiville</td></tr><tr><td>1012</td><td>Sam</td><td>Tones</td><td>12-Sep-05</td><td>33 Elm St.</td><td>Paris</td></tr><tr><td>1015</td><td>Peter</td><td>Thompson</td><td>19-Dec-06</td><td>11 Red Road</td><td>Paris</td></tr><tr><td>1016</td><td>Sarath</td><td>Sharma</td><td>22-Aug-07</td><td>440 MG Road</td><td>New Delhi</td></tr><tr><td>1020</td><td>Monika</td><td>Gupta</td><td>07-Jun-08</td><td>9 Bandra</td><td>Mumbai</td></tr></tbody></table>	EMPID	FIRSTNAME	LASTNAME	Hire Date	ADDRESS	CITY	1001	George	Smith	11-May-06	83 first street	Paris	1002	Mary	Jones	25-Feb-08	842 Vine Ave	Losantiville	1012	Sam	Tones	12-Sep-05	33 Elm St.	Paris	1015	Peter	Thompson	19-Dec-06	11 Red Road	Paris	1016	Sarath	Sharma	22-Aug-07	440 MG Road	New Delhi	1020	Monika	Gupta	07-Jun-08	9 Bandra	Mumbai	
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	(a) Identify the attribute best suitable to be declared as a primary key as well as foreign key.	1																																										
	(b) Write the degree and cardinality of the table EMPLOYEE.	1																																										
	(c) Insert the following data into the attributes EMPID, FIRSTNAME, LASTNAME, Hire_Date ADDRESS and CITY respectively in the given table EMPLOYEE. EMPID=1201, FIRSTNAME=Amit, LASTNAME=Singh, Hire_Date=01-Aug-2020 ADDRESS=222E South City and CITY= Kolkata.	1																																										
	(d) Abhinay want to remove the table EMPLOYEE from the database db. Which command will he use from the following: a) DELETE FROM employee; b) DROP TABLE employee; c) DROP DATABASE db; d) DELETE employee FROM db;	1																																										



	(e) Now Abhinay wants to display the structure of the table EMPLOYEE, i.e, name of the attributes and their respective data types that he has used in the table. Write the query to display the same.	1
23	<p>Rohit Ranjan class teacher of class XII is writing a program to create a Binary file “Studrecord.dat” which will contain roll no., name of student, total marks obtained and overall grade of 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 def write(): f=open("Studrecord.dat",'_____') #line 2 while True: roll=int(input("ENTER ROLL NO.: ")) name=input("ENTER NAME OF STUDENT: ") marks=int(input("ENTER THE TOTAL MARKS OBTAINED: ")) grade=input("ENTER THE GRADE: ") Rec=[roll,name,marks,grade] pickle._____ (Rec,f) # line 3 ch=input("DO YOU WANT INSERT MORE ENTRIES (y/n): ") if ch=='n' or ch=='N': break f.close() def read(): f=open("Studrecord.dat",'_____') #line 4 try: while True: lst=pickle._____ (f) #line 5 print(lst) except EOFError: f.close() write() read() </pre>	



	Name the module that should be imported in line 1.	1
	Write the mode in which the file should be opened to write data into it in line 2.	1
	Write down the name of the function that is responsible for writing data into binary file in line 3.	1
	Write the mode in which the file should be opened to read data from the file at line 4.	1
	Write down the name of the function that is responsible for extracting data from binary file into python sequences in line 5.	1

PART B

Section-I-Short Answer Type Questions

QUESTION NO.	QUESTION	MARKS ALLOCATED
24	Consider the following expressions. a) $a, b = 3, 6$ $c = b/a$ b) $a, b = 3, 6.0$ $c = b \% a$ What will be the final result and final data type?	2
25	Expand the following terms: a) HTTP b) HTML c) XML d) Wi-Fi	2
26	What are the basic steps to connect Python with MYSQL using table Members present in the database 'Society'?	2
27	How is having clause different from where clause? Explain with the help of an example.	2
28	Explain with the help of examples: a) Primary Key b) Foreign Key	2



29	What do you mean by web browser and web server? Explain with examples.	2
30	<p>Rewrite the following code in Python after removing all syntax error(s). Underline each correction done in the code.</p> <pre> a = int(input("Value:")) b = 0 for c in range(1, a, 2) b += c if c%2 = 0: Print(c*3) Else: print(c*) print(b) </pre>	2
31	<p>Find the output of the following:</p> <pre> L1 = [100,900,300,400,500] START = 1 SUM = 0 for C in range(START,4): SUM = SUM + L1[C] print(C, ":", SUM) SUM = SUM + L1[0]*10 print(SUM) </pre>	2
32	<p>What are the possible outcomes executed from the following code? Also, specify the maximum and minimum values that can be assigned to variable COUNT.</p> <pre> import random TEXT = "CBSEONLINE" COUNT = random.randint(0,3) C=9 while TEXT[C] != 'L': print(TEXT[C]+TEXT[COUNT]+' ',end=" ") COUNT= COUNT + 1 C = C-1 </pre> <p>(i) EC* NB* IS*</p> <p>(ii) NS* IE* LO*</p>	2



	(iii) ES* NE* IO* (iv) LE* NO* ON*	
33	When is a global statement used? Why is its use not recommended?	2

Section-II-Long Answer Type Questions

QUESTION NO.	QUESTION	MARKS ALLOCATED																																																			
34	<p>Consider the following tables GAMES and PLAYER:</p> <p style="text-align: center;">Table: GAMES</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>GCode</th> <th>Game Name</th> <th>Type</th> <th>Number</th> <th>Prize Money</th> <th>Schedule Date</th> </tr> </thead> <tbody> <tr> <td>101</td> <td>Carom Board</td> <td>Indoor</td> <td>2</td> <td>5000</td> <td>23-Jan-2004</td> </tr> <tr> <td>102</td> <td>Badminton</td> <td>Outdoor</td> <td>2</td> <td>12000</td> <td>12-Dec-2003</td> </tr> <tr> <td>103</td> <td>Table Tennis</td> <td>Indoor</td> <td>4</td> <td>8000</td> <td>14-Feb-2004</td> </tr> <tr> <td>105</td> <td>Chess</td> <td>Indoor</td> <td>2</td> <td>9000</td> <td>01-Jan-2004</td> </tr> <tr> <td>108</td> <td>Lawn Tennis</td> <td>Outdoor</td> <td>4</td> <td>25000</td> <td>19-Mar-2004</td> </tr> </tbody> </table> <p style="text-align: center;">Table: PLAYER</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>PCode</th> <th>Name</th> <th>GCode</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Nabi Ahmad</td> <td>101</td> </tr> <tr> <td>2</td> <td>Ravi Sahai</td> <td>108</td> </tr> <tr> <td>3</td> <td>Jatin</td> <td>101</td> </tr> <tr> <td>4</td> <td>Nazneen</td> <td>103</td> </tr> </tbody> </table> <p>Write the output of the following SQL queries;</p> <p>a) SELECT COUNT(DISTINCT Number) FROM GAMES;</p> <p>b) SELECT MAX(ScheduleDate), MIN(ScheduleDate) FROM GAMES</p> <p>c) SELECT Name, GameName FROM GAMES G, PLAYER P WHERE (G.Gcode=P.Gcode AND G.PrizeMoney>10000);</p>	GCode	Game Name	Type	Number	Prize Money	Schedule Date	101	Carom Board	Indoor	2	5000	23-Jan-2004	102	Badminton	Outdoor	2	12000	12-Dec-2003	103	Table Tennis	Indoor	4	8000	14-Feb-2004	105	Chess	Indoor	2	9000	01-Jan-2004	108	Lawn Tennis	Outdoor	4	25000	19-Mar-2004	PCode	Name	GCode	1	Nabi Ahmad	101	2	Ravi Sahai	108	3	Jatin	101	4	Nazneen	103	3
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35	Write AddCustomer(Customer) and DeleteCustomer(Customer) methods in Python to add a new customer and delete a Customer from a List of Customer Names, considering them to act as push and pop operations of the stack data structure.	3																																																			
36	Write a user-defined function named Count() that will read the contents of text file named "Report.txt" and count the number of lines which start with either "I" or "M" and display the count. E.g. In the following paragraph, there are 3 lines starting with "I" or "M":	3																																																			



	"India is the fastest growing economy. India is looking for more investments around the globe. The whole world is looking at India as a great market. Most of the Indians can foresee the heights that India is capable of reaching."															
37	<p>Write the definition of a function Reverse(X) in Python to display the elements in reverse order such that each displayed element is four times the original element (element*4) of the List X in the following manner:</p> <p>Example:</p> <p>If List X contains 7 integers as follows:</p> <table border="1"> <tr> <td>X[0]</td> <td>X[1]</td> <td>X[2]</td> <td>X[3]</td> <td>X[4]</td> <td>X[5]</td> <td>X[6]</td> </tr> <tr> <td>4</td> <td>6</td> <td>9</td> <td>12</td> <td>5</td> <td>8</td> <td>7</td> </tr> </table> <p>After executing the function, the array content should be displayed as follows:</p> <p>28 32 20 48 36 24 16</p>	X[0]	X[1]	X[2]	X[3]	X[4]	X[5]	X[6]	4	6	9	12	5	8	7	3
X[0]	X[1]	X[2]	X[3]	X[4]	X[5]	X[6]										
4	6	9	12	5	8	7										

Section-III-Very Long Answer Type Questions

QUESTION NO.	QUESTION	MARKS ALLOCATED																																																														
38	<p>Write SQL commands for the following queries (i) to (v) based on the relations Shoppe and Accessories given below:</p> <p align="center">TABLE : SHOPPE</p> <table border="1"> <thead> <tr> <th>ID</th> <th>SName</th> <th>Area</th> </tr> </thead> <tbody> <tr> <td>S001</td> <td>ABC Computronics</td> <td>CP</td> </tr> <tr> <td>S002</td> <td>All Infotech Media</td> <td>GK II</td> </tr> <tr> <td>S003</td> <td>Tech Shoppe</td> <td>CP</td> </tr> <tr> <td>S004</td> <td>Geeks Tecno Soft</td> <td>Nehru Place</td> </tr> <tr> <td>S005</td> <td>Hitech Tech Store</td> <td>Nehru Place</td> </tr> </tbody> </table> <p align="center">TABLE : ACCESSORIES</p> <table border="1"> <thead> <tr> <th>No</th> <th>Name</th> <th>Price</th> <th>ID</th> </tr> </thead> <tbody> <tr> <td>A01</td> <td>Mother Board</td> <td>12000</td> <td>S01</td> </tr> <tr> <td>A02</td> <td>Hard Disk</td> <td>5000</td> <td>S01</td> </tr> <tr> <td>A03</td> <td>Keyboard</td> <td>500</td> <td>S02</td> </tr> <tr> <td>A04</td> <td>Mouse</td> <td>300</td> <td>S01</td> </tr> <tr> <td>A05</td> <td>Mother Board</td> <td>13000</td> <td>S02</td> </tr> <tr> <td>A06</td> <td>Keyboard</td> <td>400</td> <td>S03</td> </tr> <tr> <td>A07</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>	ID	SName	Area	S001	ABC Computronics	CP	S002	All Infotech Media	GK II	S003	Tech Shoppe	CP	S004	Geeks Tecno Soft	Nehru Place	S005	Hitech Tech Store	Nehru Place	No	Name	Price	ID	A01	Mother Board	12000	S01	A02	Hard Disk	5000	S01	A03	Keyboard	500	S02	A04	Mouse	300	S01	A05	Mother Board	13000	S02	A06	Keyboard	400	S03	A07	LCD	6000	S04	T08	LCD	5500	S05	T09	Mouse	350	S05	T10	Hard Disk	4500	S03	5
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- (i) to display name and price of all the accessories in ascending order of their price.
- (ii) to display id and sname of all shoppe located in nehru place.
- (iii) to display minimum and maximum price of each name of accessories.
- (iv) to display name, price of all accessories and their respective sname where they are available.
- (v) to count the total number of items available from accessories table.

39

SunRise Pvt. Ltd. is setting up the network in Ahmedabad. There are four departments—MrktDept, FunDept, LegalDept, SalesDept.

5



Distance between various buildings is as under:

MrktDept to FunDept	80 m
MrktDept to LegalDept	180 m
MrktDept to SalesDept	100 m
LegalDept to SalesDept	150 m
LegalDept to FunDept	100 m
FunDept to SalesDept	50 m

Number of computers in the buildings:

MrktDept	20
LegalDept	10
FunDept	08
SalesDept	42

- (i) Suggest the network type between the Departments and specify topology.
- (ii) Suggest the most suitable building to place the server with a suitable reason.
- (iii) Suggest the placement of (i) modem, (ii) Hub/Switch in the network.
- (iv) The organization is planning to link its sale counters situated in various parts of the same city. Which type of network out of LAN, WAN, MAN will be formed? Justify.



40	A binary file “Studentrec.dat” 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.dat . ii. Write a function <i>CountRec(Roll_No)</i> in Python which accepts the Roll_No as parameter and count the total number of student and return the name of those students who are having total marks greater than 450.	5
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