

Advertisement no. CORP/GR.A/02/2021

Recruitment Exam for post of TO and STO for C-DAC, Silchar

Online Exam Date – 18th August 2021

Answer Key – Computer Science Stream

Question No.	Question	Correct Answer
Q.1	Which one of the following reasons would one consider as more as possible for the warning lights to be on? A. There was a shower of debris. B. Jack was yelling. C. A catastrophe was imminent. D. The moon was looming close and big.	C
Q.2	Which one of the following phrases best helps to bring out the precise meaning of 'loathsome creatures'? A. Security bug and slimy tentacles B. Fearful dream and slug-like animals C. slug-like animals and security bug D. Slimy tentacles and slug-like animals	D
Q.3	The best way to win a friend is to avoid A. Security bug and slimy tentacles B. Fearful dream and slug-like animals C. slug-like animals and security bug D. Slimy tentacles and slug-like animals	A
Q.4	Speech can be curse, because it can A. hurt others B. create misunderstanding C. lead to carelessness D. reveal our intentions	B
Q.5	Choose the word which best expresses the meaning of the word CORPULENT A. Lean B. Gaunt C. Emaciated D. Obese	D

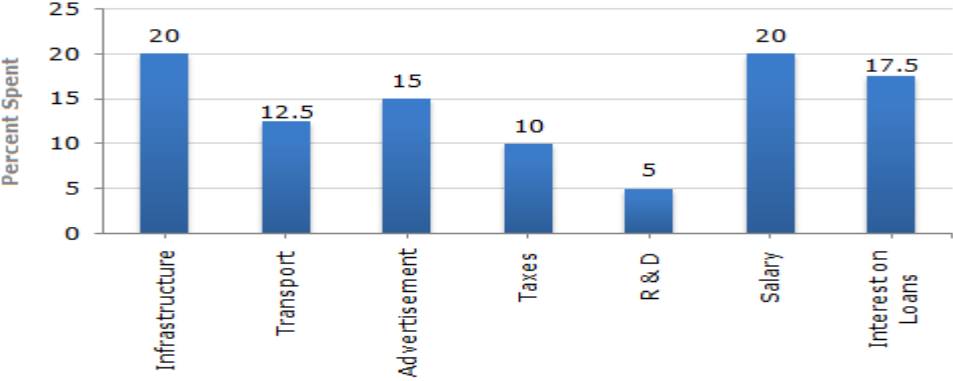
Question No.	Question	Correct Answer
Q.6	<p>Choose the word which is the exact OPPOSITE of the word QUIESCENT</p> <p>A. ACTIVE B. Dormant C. Weak D. Unconcerned</p>	A
Q.7	<p>Find the correctly spelt word.</p> <p>A. Palete B. Palet C. Palate D. Pelate</p>	C
Q.8	<p>Choose the correct meaning of proverb/idiom,</p> <p>To drive home</p> <p>A. To find one's roots B. To return to place of rest C. Back to original position D. To emphasize</p>	D
Q.9	<p>Choose the correct meaning of proverb/idiom,</p> <p>To smell a rat</p> <p>A. To see signs of plague epidemic B. To get bad smell of a bad dead rat C. To suspect foul dealings D. To be in a bad mood</p>	C
Q.10	<p>Choose the alternative which best expresses the meaning of idiom/phrase. (Italicized and underlined)</p> <p>This matter has been <u>hanging fire</u> for the last many months and must therefore be decided one way or the other.</p> <p>A. hotly debated B. going on slowly C. stuck up D. ignored</p>	B

Question No.	Question	Correct Answer
Q.11	<p>Choose the alternative which best expresses the meaning of idiom/phrase. (Italicized and Underlined)</p> <p>I cannot get along with a man who <i><u>plays fast and loose</u></i></p> <p>A. behaves in an unreliable and insincere way B. has a loose tongue C. lives a life of ease and luxury D. does not know how to behave himself</p>	A
Q.12	<p>Pick out the most effective word from the given words to fill in the blank to make the sentence meaningfully complete.</p> <p>Rohan and Rohit are twin brothers, but they do not look.....</p> <p>A. unique B. different C. likely D. alike</p>	D
Q.13	<p>Pick out the most effective word from the given words to fill in the blank to make the sentence meaningfully complete.</p> <p>An employment advertisement should the number of vacancies.</p> <p>A. provide B. specify C. contain D. declare</p>	B
Q.14	<p>From the given alternatives, choose the one which best expresses the given sentence in Passive/Active voice.</p> <p>Who is creating this mess?</p> <p>A. Who has been created this mess? B. By whom has this mess been created? C. By whom is this mess being created? D. By whom this mess is being created?</p>	C

Question No.	Question	Correct Answer
Q.15	<p>From the given alternatives, choose the one which best expresses the given sentence in Passive/Active voice.</p> <p style="text-align: center;">He is said to be very rich.</p> <p>A. He said he is very rich. B. People say he is very rich. C. He said it is very rich. D. People say it is very rich.</p>	B
Q.16	<p>From the given alternatives, choose the one which best expresses the given sentence in Indirect/Direct speech.</p> <p style="text-align: center;">She said to her friend, "I know where is everyone"</p> <p>A. She told her friend that she knew where was everyone. B. She told that she knew where was everyone. C. She told her friend that she knew where is everyone. D. She told her friend that she knows where was everyone.</p>	A
Q.17	<p>From the given alternatives, choose the one which best expresses the given sentence in Indirect/Direct speech.</p> <p style="text-align: center;">My cousin said, "My room-mate had snored throughout the night."</p> <p>A. my cousin complained to me that her room-mate is snoring throughout the night. B. my cousin told me that her room-mate snored throughout the night. C. my cousin said that her room-mate snored throughout the night. D. my cousin felt that her room-mate may be snoring throughout the night.</p>	C
Q.18	<p>Choose the one word which can be substituted for the given sentence.</p> <p style="text-align: center;">That which cannot be corrected</p> <p>A. Unintelligible B. Indelible C. Illegible D. Incurable</p>	D

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Q.19	<p>Choose the one word which can be substituted for the given sentence.</p> <p>State in which the few govern the many</p> <p>A. Monarchy B. Oligarchy C. Plutocracy D. Autocracy</p>	B																													
Q.20	<p>Choose the one word which can be substituted for the given sentence.</p> <p>A style in which a writer makes a display of his knowledge</p> <p>A. Pedantic B. Verbose C. Pompous D. Ornate</p>	A																													
<p align="center">Study the following table and answer the questions(21-25).</p> <p align="center">Classification of 100 Students based on the Marks Obtained by them in Physics and Chemistry in an Examination.</p> <table border="1" data-bbox="267 1052 1382 1436"> <thead> <tr> <th rowspan="2">Subject</th> <th colspan="5">Marks out of 50</th> </tr> <tr> <th>40 and above</th> <th>30 and above</th> <th>20 and above</th> <th>10 and above</th> <th>0 and above</th> </tr> </thead> <tbody> <tr> <td>Physics</td> <td>9</td> <td>32</td> <td>80</td> <td>92</td> <td>100</td> </tr> <tr> <td>Chemistry</td> <td>4</td> <td>21</td> <td>66</td> <td>81</td> <td>100</td> </tr> <tr> <td>Average (Aggregate)</td> <td>7</td> <td>27</td> <td>73</td> <td>87</td> <td>100</td> </tr> </tbody> </table>			Subject	Marks out of 50					40 and above	30 and above	20 and above	10 and above	0 and above	Physics	9	32	80	92	100	Chemistry	4	21	66	81	100	Average (Aggregate)	7	27	73	87	100
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Q.21	<p>What is the different between the number of students passed with 30 as cut-off marks in Chemistry and those passed with 30 as cut-off marks in aggregate?</p> <p>A. 3 B. 4 C. 5 D. 6</p>	D																													

Question No.	Question	Correct Answer
Q.22	<p>If at least 60% marks in Physics are required for pursuing higher studies in Physics, how many students will be eligible to pursue higher studies in Physics?</p> <p>A. 27 B. 32 C. 34 D. 41</p>	B
Q.23	<p>The percentage of number of students getting at least 60% marks in Chemistry over those getting at least 40% marks in aggregate, is approximately?</p> <p>A. 21% B. 27% C. 29% D. 31%</p>	C
Q.24	<p>The number of students scoring less than 40% marks in aggregate is?</p> <p>A. 13 B. 19 C. 20 D. 27</p>	D
Q.25	<p>If it is known that at least 23 students were eligible for a Symposium on Chemistry, then the minimum qualifying marks in Chemistry for eligibility to Symposium would lie in the range?</p> <p>A. 40-45 B. 30-40 C. 20-30 D. Below 20</p>	C

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<p>Answer the questions from 26-30</p> <p>The bar graph given below shows the percentage distribution of the total expenditures of a company under various expense heads during 2003.</p> <p>Percentage Distribution of Total Expenditure of a Company</p>  <table border="1" data-bbox="354 512 1300 890"> <caption>Percentage Distribution of Total Expenditure of a Company</caption> <thead> <tr> <th>Expense Head</th> <th>Percent Spent</th> </tr> </thead> <tbody> <tr> <td>Infrastructure</td> <td>20</td> </tr> <tr> <td>Transport</td> <td>12.5</td> </tr> <tr> <td>Advertisement</td> <td>15</td> </tr> <tr> <td>Taxes</td> <td>10</td> </tr> <tr> <td>R & D</td> <td>5</td> </tr> <tr> <td>Salary</td> <td>20</td> </tr> <tr> <td>Interest on Loans</td> <td>17.5</td> </tr> </tbody> </table>			Expense Head	Percent Spent	Infrastructure	20	Transport	12.5	Advertisement	15	Taxes	10	R & D	5	Salary	20	Interest on Loans	17.5
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Q.26	<p>The total amount of expenditures of the company is how many times of expenditure on research and development?</p> <p>A. 27 B. 20 C. 18 D. 8</p>	B																
Q.27	<p>If the expenditure on advertisement is 2.10 crores then the difference between the expenditure on transport and taxes is?</p> <p>A. Rs. 1.25 crores B. Rs. 95 lakhs C. Rs. 65 lakhs D. Rs. 35 lakhs</p>	D																
Q.28	<p>What is the ratio of the total expenditure on infrastructure and transport to the total expenditure on taxes and interest on loans?</p> <p>A. 5:4 B. 8:7 C. 9:7 D. 13:11</p>	D																

Question No.	Question	Correct Answer
Q.29	<p>If the interest on loans amounted to Rs. 2.45 crores then the total amount of expenditure on advertisement, taxes and research and development is?</p> <p>A. Rs. 7 crores B. Rs. 5.4 crores C. Rs. 4.2 crores D. Rs. 3 crores</p>	C
Q.30	<p>The expenditure on the interest on loans is by what percent more than the expenditure on transport?</p> <p>A. 5% B. 10% C. 20% D. 40%</p>	D
Q.31	<p>A bag contains 4 white, 5 red and 6 blue balls. Three balls are drawn at random from the bag. The probability that all of them are red, is:</p> <p>A. $2 / 91$ B. $3 / 22$ C. $1 / 22$ D. $2 / 77$</p>	A
Q.32	<p>If $\log 2 = 0.30103$, the number of digits in 2^{64} is:</p> <p>A. 18 B. 19 C. 20 D. 21</p>	C
Q.33	<p>In how many different ways can the letters of the word 'OPTICAL' be arranged so that the vowels always come together?</p> <p>A. 720 B. 120 C. 4320 D. 2160</p>	A

Question No.	Question	Correct Answer
Q.34	<p>A milk vendor has 2 cans of milk. The first contains 25% water and the rest milk. The second contains 50% water. How much milk should he mix from each of the containers so as to get 12 liters of milk such that the ratio of water to milk is 3 : 5?</p> <p>A. 4 liters, 8 liters B. 6 liters, 6 liters C. 5 liters, 7 liters D. 7 liters, 5 liters</p>	B
Q.35	<p>A merchant has 1000 kg of sugar, part of which he sells at 8% profit and the rest at 18% profit. He gains 14% on the whole. The quantity sold at 18% profit is:</p> <p>A. 400 kg B. 560 kg C. 600 kg D. 640 kg</p>	C
Q.36	<p>A flagstaff 17.5 m high casts a shadow of length 40.25 m. The height of the building, which casts a shadow of length 28.75 m under similar conditions will be:</p> <p>A. 10 m B. 12.5 m C. 17.5 m D. 21.25 m</p>	B
Q.37	<p>A hollow iron pipe is 21 cm long and its external diameter is 8 cm. If the thickness of the pipe is 1 cm and iron weighs 8 g/cm^3, then the weight of the pipe is:</p> <p>A. 3.6 kg B. 3.696 kg C. 36 kg D. 36.9 kg</p>	B
Q.38	<p>The sum of the present ages of a father and his son is 60 years. Six years ago, father's age was five times the age of the son. After 6 years, son's age will be:</p> <p>A. 12 years B. 14 years C. 18 years D. 20 years</p>	D

Question No.	Question	Correct Answer
Q.39	<p>A two-digit number is such that the product of the digits is 8. When 18 is added to the number, then the digits are reversed. The number is:</p> <p>A. 18 B. 24 C. 42 D. 81</p>	B
Q.40	<p>From a point P on a level ground, the angle of elevation of the top tower is 30°. If the tower is 100 m high, the distance of point P from the foot of the tower is:</p> <p>A. 149 m B. 156 m C. 173 m D. 200 m</p>	C
Q.41	<p>Consider the following JAVA program:</p> <pre>public class First { public static int CBSE (int x) { if (x < 100) x = CBSE (x +10); return (x - 1); } public static void main (String[] args){ System.out.print(First.CBSE(60)); } }</pre> <p>What does this program print?</p> <p>A. 59 B. 95 C. 69 D. 99</p>	B
Q.42	<p>Which of the following is used to make an Abstract class?</p> <p>A. Making atleast one member function as pure virtual function B. Making atleast one member function as virtual function C. Declaring as Abstract class using virtual keyword D. Declaring as Abstract class using static keyword</p>	A

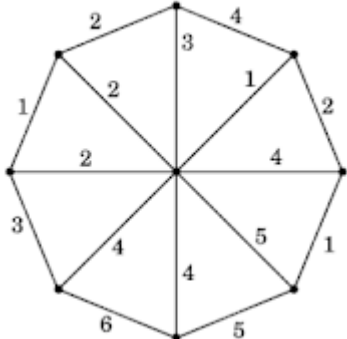
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Q.43	<p>Match the following with reference to object oriented modelling:</p> <table border="0" style="width: 100%;"> <tr> <td style="text-align: center; width: 50%;">List - I</td> <td style="text-align: center; width: 50%;">List - II</td> </tr> <tr> <td>a. Polymorphism</td> <td>(i) Picking both operator and attributes with operations appropriate to model an object</td> </tr> <tr> <td>b. Inheritance</td> <td>(ii) Hiding implementation details of methods from users of objects</td> </tr> <tr> <td>c. Encapsulation</td> <td>(iii) Using similar operations to do similar things</td> </tr> <tr> <td>d. Abstraction</td> <td>(iv) Create new classes from existing class</td> </tr> </table> <p style="margin-left: 40px;">a. b. c. d.</p> <p>A. (iv) (iii) (i) (ii) B. (iii) (iv) (i) (ii) C. (iii) (i) (ii) (iv) D. (iv) (iii) (ii) (i)</p>	List - I	List - II	a. Polymorphism	(i) Picking both operator and attributes with operations appropriate to model an object	b. Inheritance	(ii) Hiding implementation details of methods from users of objects	c. Encapsulation	(iii) Using similar operations to do similar things	d. Abstraction	(iv) Create new classes from existing class	B
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Q.44	<p>Which one of the following is correct, when a class grants friend status to another class?</p> <p>A. The member functions of the class generating friendship can access the members of the friend class. B. All member functions of the class granted friendship have unrestricted access to the members of the class granting the friendship. C. Class friendship is reciprocal to each other D. There is no such concept.</p>	B										
Q.45	<p>When a method in a subclass has the same name and type signatures as a method in the superclass, then the method in the subclass the method in the superclass.</p> <p>A. Overloads B. Friendships C. Inherits D. Overrides</p>	D										
Q.46	What is the value returned by the function f given below when n = 100?	A										

Question No.	Question	Correct Answer
	<pre>int f(int n) { if (n==0) then return n; else return n + f(n-2); }</pre> <p>A. 2550 B. 2556 C. 5220 D. 5520</p>	
Q.47	<p>Which of the following are not Node.js web application frameworks for?</p> <p>A. Express.js B. Geddy C. Aurelia D. Locomotive</p>	C
Q.48	<p>The following statement in 'C'</p> <pre>int(*f())[];</pre> <p>declares</p> <p>A. a function returning a pointer to an array of integers. B. a function returning an array of pointers to integers. C. array of functions returning pointers to integers. D. an illegal statement.</p>	A
Q.49	<p>What is the output of the following program in Python?</p> <pre>print 0.1 + 0.2 == 0.3</pre> <p>A. True B. False C. Machine dependent D. Error</p>	B

Question No.	Question	Correct Answer
Q.50	<p>Consider the following recursive Java function f that takes two long arguments and returns a float value:</p> <pre>public static float f(long m, long n) { float result = (float) m / (float) n; if (m < 0 n < 0) return 0.0f; else result += f(m*2, n*3); return result; }</pre> <p>Which of the following integers best approximates the value of f(2,3)?</p> <p>A. 0 B. 1 C. 2 D. 3</p>	C
Q.51	<p>In order traversal of binary search tree will produce.....</p> <p>A. sorted list B. reverse of input C. unsorted list D. none of the above</p>	A
Q.52	<p>In binary heap, whenever the root is removed then the rightmost element of last level is replaced by the root. Why?</p> <p>A. To make sure that it is still complete binary tree. B. It is the easiest possible way. C. Because left and right subtree might be missing. D. None of these</p>	A
Q.53	<p>In order to get the contents of a Binary search tree in ascending order, one has to traverse it In.....</p> <p>A. pre-order B. in-order C. post order D. not possible</p>	B
Q.54	The prefix form of an infix expression $p + q - r * t$ is :	C

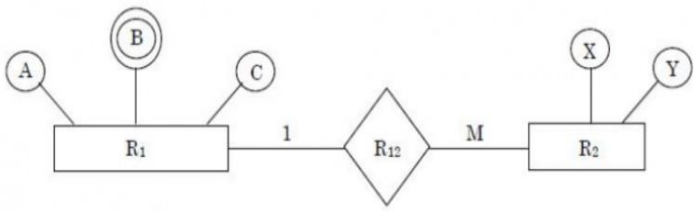
Question No.	Question	Correct Answer
	<p>A. + pq - *rt B. - +pqr * t C. - +pq * rt D. - + * pqrt</p>	
Q.55	<p>Postorder traversal of a given binary search tree T produces following sequence of keys: 3, 5, 7, 9, 4, 17, 16, 20, 18, 15, 14</p> <p>Which one of the following sequences of keys can be the result of an in-order traversal of the tree T?</p> <p>A. 3, 4, 5, 7, 9, 14, 20, 18, 17, 16, 15 B. 20, 18, 17, 16, 15, 14, 3, 4, 5, 7, 9 C. 20, 18, 17, 16, 15, 14, 9, 7, 5, 4, 3 D. 3, 4, 5, 7, 9, 14, 15, 16, 17, 18, 20</p>	D
Q.56	<p>The elements 42,25,30,40,22,35,26 are inserted one by one in the given order into a max-heap. The resultant max-heap is sorted in an array implementation as</p> <p>A. <42,40,35,25,22,30,26> B. <42,35,40,22,25,30,26> C. <42,40,35,25,22,26,30> D. <42,35,40,22,25,26,30></p>	A
Q.57	<p>In binary search, average number of comparison required for searching an element in a list of n numbers is:</p> <p>A. $\log_2 n$ B. $n / 2$ C. n D. $n - 1$</p>	A
Q.58	<p>If there are n integers to sort, each integer has d digits and each digit is in the set {1,2, ..., k}, radix sort can sort the numbers in:</p> <p>A. $O(d n k)$ B. $O(d n^k)$ C. $O((d+n)k)$ D. $O(d(n+k))$</p>	D
Q.59	<p>Suppose you are given a binary tree with n nodes, such that each node has exactly either zero or two children. The maximum height of the tree will be</p>	C

Question No.	Question	Correct Answer
	A. $n/2 - 1$ B. $n/2 + 1$ C. $(n-1)/2$ D. $(n+1)/2$	
Q.60	A binary search tree is constructed by inserting the following numbers in order: 60, 25, 72, 15, 30, 68, 101, 13, 18, 47, 70, 34 The number of nodes in the left subtree is A. 5 B. 6 C. 7 D. 3	C
Q.61	Give asymptotic upper and lower bound for $T(n)$ given below. Assume $T(n)$ is constant for $n \leq 2$. $T(n) = 4T(\sqrt{n}) + \lg^2 n$ A. $T(n) = \vartheta(\lg^*(\lg^2 n) \lg n)$ B. $T(n) = \vartheta(\lg^2 n \lg n)$ C. $T(n) = \vartheta(\lg^2 n \lg \lg n)$ D. $T(n) = \vartheta(\lg(\lg n) \lg n)$	B
Q.62	Floyd-Warshall algorithm utilizes to solve the all-pairs shortest paths problem on a directed graph in time A. Greedy algorithm, $\theta(V^3)$ B. Greedy algorithm, $\theta(V^2 \lg n)$ C. Dynamic programming, $\theta(V^3)$ D. Dynamic programming, $\theta(V^2 \lg n)$	C
Q.63	When using Dijkstra's algorithm to find shortest path in a graph, which of the following statement is not true? A. Shortest path always passes through least number of vertices B. Every time a new node is visited, we choose the node with smallest known distance/cost (weight) to visit first C. It can find shortest path within the same graph data structure D. The graph needs to have a non-negative weight on every edge	A

Question No.	Question	Correct Answer		
Q.64	<p>Consider the graph shown below:</p>  <p>Use Kruskal's algorithm to find the minimum spanning tree of the graph. The weight of this minimum spanning tree is</p> <p>A. 17 B. 14 C. 16 D. 13</p>	C		
Q.65	<p>Match the following with respect to algorithm paradigms:</p> <table border="0" style="width: 100%;"> <tr> <td style="vertical-align: top;"> <p>List-I</p> <p>a. Merge sort</p> <p>b. Huffman coding</p> <p>c. Optimal polygon triangulation</p> <p>d. Subset sum problem</p> </td> <td style="vertical-align: top;"> <p>List-II</p> <p>i. Dynamic programming</p> <p>ii. Greedy approach</p> <p>iii. Divide and conquer</p> <p>iv. Back tracking</p> </td> </tr> </table> <p>a b c d</p> <p>A. iii i ii iv B. ii i iv iii C. ii i iii iv D. iii ii i iv</p>	<p>List-I</p> <p>a. Merge sort</p> <p>b. Huffman coding</p> <p>c. Optimal polygon triangulation</p> <p>d. Subset sum problem</p>	<p>List-II</p> <p>i. Dynamic programming</p> <p>ii. Greedy approach</p> <p>iii. Divide and conquer</p> <p>iv. Back tracking</p>	D
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Q.66	<p>Which one of the following is used to represent the supporting many-one relationships of a weak entity set in an entity-relationship diagram?</p>	D		

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	A. Rectangles with double/bold border B. Ovals with double/bold border C. Ovals that contain underlined identifiers D. Diamonds with double/bold border																																																													
Q.67	<p>Consider a relational database containing the following schemas</p> <table border="1" data-bbox="367 533 537 930"> <caption>Catalogue</caption> <thead> <tr> <th><u>sno</u></th> <th><u>pno</u></th> <th>cost</th> </tr> </thead> <tbody> <tr><td>S1</td><td>P1</td><td>150</td></tr> <tr><td>S1</td><td>P2</td><td>50</td></tr> <tr><td>S1</td><td>P3</td><td>100</td></tr> <tr><td>S2</td><td>P4</td><td>200</td></tr> <tr><td>S2</td><td>P5</td><td>250</td></tr> <tr><td>S3</td><td>P1</td><td>250</td></tr> <tr><td>S3</td><td>P2</td><td>150</td></tr> <tr><td>S3</td><td>P5</td><td>300</td></tr> <tr><td>S3</td><td>P4</td><td>250</td></tr> </tbody> </table> <table border="1" data-bbox="591 562 899 720"> <caption>Suppliers</caption> <thead> <tr> <th><u>sno</u></th> <th>sname</th> <th>location</th> </tr> </thead> <tbody> <tr><td>S1</td><td>M/s Royal furniture</td><td>Delhi</td></tr> <tr><td>S2</td><td>M/s Balaji furniture</td><td>Bangalore</td></tr> <tr><td>S3</td><td>M/s Premium furniture</td><td>Chennai</td></tr> </tbody> </table> <table border="1" data-bbox="591 762 841 993"> <caption>Parts</caption> <thead> <tr> <th><u>pno</u></th> <th>pname</th> <th>part_spec</th> </tr> </thead> <tbody> <tr><td>P1</td><td>Table</td><td>Wood</td></tr> <tr><td>P2</td><td>Chair</td><td>Wood</td></tr> <tr><td>P3</td><td>Table</td><td>Steel</td></tr> <tr><td>P4</td><td>Almirah</td><td>Steel</td></tr> <tr><td>P5</td><td>Almirah</td><td>Wood</td></tr> </tbody> </table> <p>The primary key of each table is indicated by underlining the constituent fields.</p> <pre> SELECT s.sno, s.sname FROM Suppliers s, Catalogue c WHERE s.sno = c.sno AND cost > (SELECT AVG (cost) FROM Catalogue WHERE pno = 'P4' GROUP BY pno); </pre> <p>The number of rows returned by the above SQL query is</p> <p>A. 2 B. 5 C. 4 D. 0</p>	<u>sno</u>	<u>pno</u>	cost	S1	P1	150	S1	P2	50	S1	P3	100	S2	P4	200	S2	P5	250	S3	P1	250	S3	P2	150	S3	P5	300	S3	P4	250	<u>sno</u>	sname	location	S1	M/s Royal furniture	Delhi	S2	M/s Balaji furniture	Bangalore	S3	M/s Premium furniture	Chennai	<u>pno</u>	pname	part_spec	P1	Table	Wood	P2	Chair	Wood	P3	Table	Steel	P4	Almirah	Steel	P5	Almirah	Wood	C
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Q.68	<p>Consider the following two statements about database transaction schedules:</p> <p>I. Strict two-phase locking protocol generates conflict serializable schedules that are also recoverable.</p> <p>II. Timestamp-ordering concurrency control protocol with Thomas' Write Rule can generate view serializable schedules that are not conflict serializable.</p> <p>Which of the above statements is/are TRUE?</p> <p>A. Neither I nor II</p> <p>B. I only</p> <p>C. II only</p> <p>D. Both I and II</p>	D
Q.69	<p>Let the set of functional dependencies $F = \{QR \rightarrow S, R \rightarrow P, S \rightarrow Q\}$ hold on a relation schema $X = (PQRS)$. X is not in BCNF. Suppose X is decomposed into two schemas Y and Z where $Y = (PR)$ and $Z = (QRS)$.</p> <p>Consider the two statements given below:</p> <p>I. Both Y and Z are in BCNF</p> <p>II. Decomposition of X into Y and Z is dependency preserving and lossless</p> <p>Which of the above statements is/are correct?</p> <p>A. I only</p> <p>B. Neither I nor II</p> <p>C. Both I and II</p> <p>D. II only</p>	D

Question No.	Question	Correct Answer
Q.70	<p>Find minimum number of tables required for converting the following entity relationship diagram into relational database?</p>  <p>A. 2 B. 4 C. 3 D. 5</p>	C
Q.71	<p>Given two tables</p> <p>EMPLOYEE (<u>EID</u>, ENAME, DEPTNO) DEPARTMENT (<u>DEPTNO</u>, DEPTNAME)</p> <p>Find the most appropriate statement of the given query:</p> <pre>Select count (*) 'total' from EMPLOYEE where DEPTNO IN (D1,D2) group by DEPTNO having count (*) >5</pre> <p>A. Total number of employees in each department D1 and D2 B. Total number of employees of department D1 and D2 if their total is >5 C. Display total number of employees in both departments D1 and D2 D. The output of the query must have at least two rows</p>	B

Question No.	Question	Correct Answer
Q.72	<p>Let R=(A,B,C,D,E,F) be a relation scheme with the following dependencies:</p> <p style="text-align: center;">$C \rightarrow F, E \rightarrow A, EC \rightarrow D, A \rightarrow B.$</p> <p>Which of the following is a key for R?</p> <p>A. CD B. EC C. AE D. AC</p>	B
Q.73	<p>The relational algebra expression equivalent to the tuple calculus expression</p> <p style="text-align: center;">$\{ t \mid t \in r \wedge (t[A] = 10 \wedge t[B] = 20) \}$ is</p> <p>A. $\sigma_{(A=10 \vee B=20)}(r)$ B. $\sigma_{(A=10)}(r) \cup \sigma_{(B=20)}(r)$ C. $\sigma_{(A=10)}(r) \cap \sigma_{(B=20)}(r)$ D. $\sigma_{(A=10)}(r) - \sigma_{(B=20)}(r)$</p>	C
Q.74	<p>The order of a leaf node in a B⁺ - tree is the maximum number of (value, data record pointer) pairs it can hold. Given that the block size is 1 K bytes, data record pointer is 7 bytes long, the value field is 9 bytes long and a block pointer is 6 bytes long, what is the order of the leaf node?</p> <p>A. 63 B. 64 C. 67 D. 68</p>	A
Q.75	<p>Suppose the following functional dependencies hold on a relation U with attributes P, Q, R, S, and T:</p> <p style="text-align: center;">$P \rightarrow QR$ $RS \rightarrow TS$</p> <p>Which of the following functional dependencies cannot be inferred from the above functional dependencies?</p> <p>A. $PS \rightarrow T$ B. $R \rightarrow T$ C. $P \rightarrow R$ D. $PS \rightarrow Q$</p>	B

Question No.	Question	Correct Answer																							
Q.76	<p>Match the terms related to Software Configuration Management (SCM) in List-I with the descriptions in List-II.</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 30%;">List-1</td> <td>List-II</td> </tr> <tr> <td>I. Version</td> <td>a. An instance of a system that is distributed to customers.</td> </tr> <tr> <td>II. Release</td> <td>b. An instance of a system which is functionally identical to other instances, but designed for different hardware/software configurations.</td> </tr> <tr> <td>III. Variant</td> <td>c. An instance of a system that differs, in some way, from other instances.</td> </tr> </table> <table border="0" style="width: 100%;"> <tr> <td style="width: 30%;"></td> <td style="width: 30%; text-align: center;">I II III</td> <td style="width: 30%;"></td> </tr> <tr> <td>A.</td> <td>b c a</td> <td></td> </tr> <tr> <td>B.</td> <td>c a b</td> <td></td> </tr> <tr> <td>C.</td> <td>c b a</td> <td></td> </tr> <tr> <td>D.</td> <td>b a c</td> <td></td> </tr> </table>	List-1	List-II	I. Version	a. An instance of a system that is distributed to customers.	II. Release	b. An instance of a system which is functionally identical to other instances, but designed for different hardware/software configurations.	III. Variant	c. An instance of a system that differs, in some way, from other instances.		I II III		A.	b c a		B.	c a b		C.	c b a		D.	b a c		B
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Q.77	<p>A software project was estimated at 352 Function Points (FP). A four person team will be assigned to this project consisting of an architect, two programmers, and a tester. The salary of the architect is Rs.80,000 per month, the programmer Rs.60,000 per month and the tester Rs.50,000 per month. The average productivity for the team is 8 FP per person month. Which of the following represents the projected cost of the project?</p> <p>A. Rs.28,16,000 B. Rs.20,90,000 C. Rs.26,95,000 D. Rs.27,50,000</p>	D																							
Q.78	<p>Complete each of the following sentences in List-I on the left hand side by filling in the word or phrase from the List-II on the right hand side that best completes the sentence:</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%; text-align: center;">List-I</td> <td style="width: 50%; text-align: center;">List-II</td> </tr> <tr> <td>I. Determining whether you have built the right system is called</td> <td>a. Software testing</td> </tr> </table>	List-I	List-II	I. Determining whether you have built the right system is called	a. Software testing	D																			
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	<p>II. Determining whether you have built the system right is called</p> <p>III. is the process of demonstrating the existence of defects or providing confidence that they do not appear to be present.</p> <p>IV. is the process of discovering the cause of a defect and fixing it.</p> <p style="text-align: center;">I II III IV</p> <p>A. b d a c B. b d c a C. d b c a D. d b a c</p>							
Q.79	<p>A software company needs to develop a project that is estimated as 1000 function points and is planning to use JAVA as the programming language whose approximate lines of code per function point is accepted as 50. Considering $a=1.4$ as multiplicative factor, $b=1.0$ as exponentiation factor for the basic COCOMO effort equation and $c=3.0$ as multiplicative factor, $d=0.33$ as exponentiation factor for the basic COCOMO duration equation, approximately how long does the project take to complete?</p> <p>A. 11.2 months B. 12.2 months C. 13.2 months D. 10.2 months</p>	B						
Q.80	<p>Match List-I with List-II:</p> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center; width: 50%;">List-I</td> <td style="text-align: center; width: 50%;">List-II</td> </tr> <tr> <td style="text-align: center;">(Software Process Models)</td> <td style="text-align: center;">(Software Systems)</td> </tr> <tr> <td style="vertical-align: top;">a. Waterfall model</td> <td style="vertical-align: top;">(i) e-business software that starts with only the basic functionalities and then moves on to more advanced features.</td> </tr> </table>	List-I	List-II	(Software Process Models)	(Software Systems)	a. Waterfall model	(i) e-business software that starts with only the basic functionalities and then moves on to more advanced features.	D
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a. Waterfall model	(i) e-business software that starts with only the basic functionalities and then moves on to more advanced features.							

Question No.	Question	Correct Answer
	<p>b. Incremental development (ii) An inventory control system for a supermarket to be developed within three months.</p> <p>b. Prototyping (iii) A virtual reality system for simulating vehicle navigation in a highway.</p> <p>d. RAD (iv) Automate the manual system for student record maintenance in a school.</p> <p>Choose the correct option from those given below:</p> <p>A. a.-(ii), b.-(iv), c.-(i), d.-(iii)</p> <p>B. a.-(i), b.-(iii), c.-(iv), d.-(ii)</p> <p>C. a.-(iii), b.-(ii), c.-(iv), d.-(i)</p> <p>D. a.-(iv), b.-(i), c.-(iii), d.-(ii)</p>	
Q.81	<p>A network on the Internet has a subnet mask of 255.255.240.0. What is the maximum number of hosts it can handle?</p> <p>A. 1024 B. 2048 C. 4096 D. 8192</p>	C
Q.82	<p>Four bits are used for packed sequence numbering in a sliding window protocol used in a computer network. What is the maximum window size?</p> <p>A. 4 B. 8 C. 16 D. 15</p>	D

Question No.	Question	Correct Answer
Q.83	<p>If there are N people in the world and are using secret key encryption/decryption for privacy purpose, then number of secret keys required will be:</p> <p>A. N B. (N-1) C. $N(N-1)/2$ D. $N(N+1)/2$</p>	C
Q.84	<p>A network with bandwidth of 10 Mbps can pass only an average of 15,000 frames per minute with each frame carrying an average of 8,000 bits. What is the throughput of this network?</p> <p>A. 60 Mbps B. 2 Mbps C. 120 Mbps D. 10 Mbps</p>	B
Q.85	<p>Consider a subnet with 720 routers. If a three-level hierarchy is chosen with eight clusters, each containing 9 regions of 10 routers, then total number of entries in the routing table is</p> <p>A. 25 B. 27 C. 53 D. 72</p>	A
Q.86	<p>Which of the following HTML code will affect the vertical alignment of the table content?</p> <p>A. <code><td style = "vertical-align : middle">Text Here</td></code> B. <code><td valign = "centre">Text Here</td></code> C. <code><td style = "text-align : center">Text Here</td></code> D. <code><td align = "middle">Text Here</td></code></p>	A
Q.87	<p>Match the following with respect to HTML tags and usage.</p> <p>List - I a. CITE b. EM c. VAR d. SAMP</p> <p>List - II 1. Italic representation</p>	A

Question No.	Question	Correct Answer
	<p>2. Represents output from programs 3. Represents to other source 4. Argument to a program</p> <p>a b c d A. 3 1 4 2 B. 2 3 1 4 C. 4 2 3 1 D. 1 3 4 1</p>	
Q.88	<p>Which of the following statements is/are true with reference to the way of describing XML data ?</p> <p>(I) XML uses DTD to describe the data (II) XML uses XSL to describe the data (III) XML uses a description node to describe the data</p> <p>Codes : A. (I) only B. (II) only C. (I) and (II) D. (I) and (III)</p>	D
Q.89	<p>Which of the following statements is/are true?</p> <p>P: An XML document with correct syntax as specified by W3C is called “Well Formed”.</p> <p>Q: An XML documented validated against a DTD is both “Well formed” and “Valid”.</p> <p>R: <xml version = “1.0” encoding = “UTF-8”> is syntactly correct declaration for the version of an XML document.</p> <p>Select the correct answer from the options given below: A. P and Q only B. P and R only C. Q and R only D. All of P, Q and R</p>	A

Question No.	Question	Correct Answer
Q.90	<p>Which one is a collection of templates and rules?</p> <p>A. XML B. CSS C. DHTML D. XSL</p>	D
Q.91	<p>Which of the following is not a type of scanning?</p> <p>A. Xmas Tree Scan B. Cloud scan C. Null Scan D. SYN Stealth</p>	B
Q.92	<p>The term "CHAP" stands for</p> <p>A. Circuit Hardware Authentication Protocols B. Challenge Hardware Authentication Protocols C. Challenge Handshake Authentication Protocols D. Circuit Handshake Authentication Protocols</p>	C
Q.93	<p>The number of elements in the Open IoT Architecture?</p> <p>A. 7 elements B. 8 elements C. 6 elements D. 3 elements</p>	A
Q.94	<p>Who created Bitcoin?</p> <p>A. Satoshi Nakamoto B. Samsung C. John Mcafee D. China</p>	A
Q.95	<p>Natural language processing is divided into two subfields of</p> <p>A. symbolic and numeric B. time and motion C. algorithmic and heuristic D. understanding and generation</p>	A

Question No.	Question	Correct Answer
Q.96	<p>Which of the following is storage data interchange interface for stored data objects?</p> <p>A. OCC B. OCCI C. OCMI D. OCPI</p>	B
Q.97	<p>Point out the wrong statement.</p> <p>A. Cloud computing deployments must be monitored and managed in order to be optimized for best performance B. To the problems associated with analyzing distributed network applications, the cloud adds the complexity of virtual infrastructure C. Cloud management software provides capabilities for managing faults D. None of the mentioned</p>	D
Q.98	<p>..... is a framework tool for managing cloud infrastructure.</p> <p>A. IBM Tivoli Service Automation Manager B. Microsoft Tivoli Service Automation Manager C. Google Service Automation Manager D. Windows Live Hotmail</p>	A
Q.99	<p>Which of the following is considered an essential element in cloud computing by CSA?</p> <p>A. Multi-tenancy B. Identity and access management C. Virtualization D. All of the mentioned</p>	A
Q.100	<p>Which of the following is application and infrastructure management software for hybrid multi-clouds?</p> <p>A. VMware Hyperic B. Webmetrics C. Univa UD D. Tapinsystems</p>	C