Itemcode : **CJ1001**

Q1: Given the following two statements

S1: A relation R = {A, B, C, D, E, F} is given with following set of functional dependencies: F = {AD → E, BE → F, B → C} and candidate key is ABD

S2: Every table with two single-valued attributes is in 1NF, 2NF, 3NF and BCNF.

Which one of the following is true?

A	S1 is false, S2 is false
B	S2 is true, S1 is false
C	S1 is true, S2 is true
D	S1 is true, S2 is false

Correct Ans: **C**

Itemcode : **CJ1002**

Q2: Block-level striping with distributed parity is known as

A	RAID 4
B	RAID 5
C	RAID 6
D	None of the above

Correct Ans: **B**

Itemcode : **CJ1003**

Q3: Integrity constraints ensure that changes made to the database by authorized users do not result into loss of data consistency. Which of the following statement(s) is (are) true with reference to the examples of integrity constraints?

S1) An instructor Id. No. cannot be null, provided Instructor Id No. being primary key.

S2) No two citizens have same Aadhar-Id.

S3) Budget of a company must be zero.

A	S1 and S2 are true but S3 is false
B	S1, S2, and S3 are true
C	S1, S2, and S3 are false
D	S1 is false but S2 and S3 are true

Correct Ans: **A**

Itemcode : **CJ1004**

Q4: Let R and S be two relations with the following schema R (P,Q,R1,R2,R3) and S (P,Q,S1,S2) respectively Where

{P, Q} is the key for both schemas. Which of the following queries are equivalent?

I. $\Pi_P(R \bowtie S)$
II. $\Pi_P(R) \bowtie \Pi_P(S)$
III. $\Pi_P(\Pi_{P,Q}(R) \cap \Pi_{P,Q}(S))$
IV. $\Pi_P(\Pi_{P,Q}(R) - (\Pi_{P,Q}(R) - \Pi_{P,Q}(S)))$

A	I and III only
B	I and IV only
C	I, II and III only
D	I, III and IV only

Correct Ans: **D**

Q5: Consider the following schedules involving two transactions: **S1:** r1(X); r1(Y); r2(X); r2(Y); w2(Y); w1(X) and **S2:** r1(X); r2(X); r2(Y); w2(Y); r1(Y); w1(X) Which of the following statement is true?

A	Both S1 and S2 are conflict serializable
B	Both S1 and S2 are not conflict serializable
C	S1 is conflict serializable S2 is not conflict serializable
D	S1 is not conflict serializable S2 is conflict serializable

Correct Ans: **D**

Q6: Match the following algorithms with their appropriate data structures.

List I	List II
A) BFS	i) Union Find
B) DFS	ii) Queue
C) Kruskal's Minimum Spanning Tree	iii) Priority Queue
D) Prim's Minimum Spanning Tree	iv) Stack

A	A-iv, B-ii, C-i, D-iii
B	A-ii, B-iv, C-iii, D-i
C	A-iv, B-ii, C-iii, D-i
D	A-ii, B-iv, C-i, D-iii

Correct Ans: **D**

Q7: Which of the following lines completes the code and what is the output of the following code?

```
#include<stdio.h>
int find_max(int a, int b)
{ if(a > b)
        return a;
        return b;}
int knapsack(int W, int *wt, int *val,int n)
{int ans[n + 1][W + 1];
int itm,w;
for(itm = 0; itm<= n; itm++)
ans[itm][0] = 0;
for(w = 0;w <= W; w++)
ans[0][w] = 0;
for(itm = 1; itm<= n; itm++)
{   for(w = 1; w <= W; w++)
{if(wt[itm - 1] <= w)
ans[itm][w] = find_max(ans[itm – 1][w – wt[itm – 1]] + val[itm – 1], ans[itm – 1][w]); else
ans[itm][w] = ans[itm - 1][w];
}}
    return ans[n][W];
}
int main()
{ int w[] = {10,20,30}, v[] = {60, 100, 120}, W = 50;
int ans = knapsack(W, w, v, 3);
printf("%d",ans);
    return 0;}
```

A	220
B	100
C	130
D	None of the above

Correct Ans: **A**

Itemcode : **CJ1008**

Q8: The elements 32, 15, 20, 30, 12, 25, 16 are inserted one by one in the given order into a Max Heap. Then what is resultant level by level order of this Max Heap?

A	32 25 30 12 15 20 16
B	32 30 25 15 12 20 16
C	32 30 25 15 12 16 20
D	32 25 30 12 15 16 20

Correct Ans: **B**

Itemcode : **CJ1009**

Q9: If matching tuples are not found, the kind of OUTER JOIN operation which keeps all the tuples of first relation out of the two relations is classified as

A	UPWARD JOIN
B	DOWNWARD JOIN
C	LEFT OUTER JOIN
D	RIGHT OUTER JOIN

Correct Ans: **C**

Itemcode : **CJ1010**	
Q10:	Suppose that we have numbers between 1 and 100 in a binary search tree and want to search for the number 55. Which of the following sequences CANNOT be the sequence of nodes examined?
A	{10, 85, 64, 42, 60, 57, 55}
B	{100,20,69,34,62,45,55}
C	{9,85,47,68,43,57,55}
D	All of the above
Correct Ans: **C**	

Itemcode : **CJ1011**	
Q11:	People in the village construct houses on the same side of the lane. A robber is planning on robbing the village. Without having the chance of being caught, he needs the full sum of money. The villagers realize, by any way, that their adjacent house is being raided or not and so they become alert. So a robber cannot rob two adjoining houses. Since the robber understands the sum of money deposited in each house and the path is straightforward and there is no turning. Which is the most powerful algorithmic technique used to solve this problem?
A	Dynamic Programming
B	Brute Force
C	Backtracking
D	Divide and Conquer
Correct Ans: **A**	

Itemcode : **CJ1012**	
Q12:	Simplify Y= A'BC'D + ABC'D + A'BCD + ABCD + A'B'C'D'
A	BC + A'B'C'D'
B	BC' + ABC'D'
C	D'(B' + A'BC)
D	BD + A'B'C'D'
Correct Ans: **D**	

Itemcode : **CJ1013**	
Q13:	What happens when a bit-string is XORed with itself n-times as shown: [B⊕ (B⊕ (B⊕ (B........ n times)]
A	Complements when n is even
B	Complements when n is odd
C	Divides by 2^n always
D	Remains unchanged when n is even
Correct Ans: **S**	**(S Denotes question scrapped and no credit to Candidates.)**

Itemcode : **CJ1014**	
Q14:	Let f(w, x, y, z) = Σ(0, 4, 5, 7, 8, 9, 13, 15). Which of the following expressions are NOT equivalent to f?

A	x'y'z' + w'xy' + wy'z + xz
B	w'y'z' + wx'y' + xz
C	w'y'z' + wx'y' + xyz + xy'z
D	x'y'z' + wx'y' + w'y

Correct Ans: **D**

Itemcode : **CJ1015**

Q15: Dependency between statements I1: add r1, r2, r3 and I2: mul r4, r2, r5 is _____.

A	Flow dependency
B	Anti-dependency
C	Output dependency
D	Loop dependency

Correct Ans: **S**   **(S Denotes question scrapped and no credit to Candidates.)**

Itemcode : **CJ1016**

Q16: The minimum number of flip flops required for a mod 10 ripple counter is?

A	5
B	4
C	3
D	10

Correct Ans: **B**

Itemcode : **CJ1017**

Q17: Match the following links with their output

List I
A) Unvisited Links
B) Visited Links
C) Active Links

List II
i) Purple in color and underlined
ii) Blue in color and underlined
iii) Red in color and underlined

A	A-i, B-ii, C-iii
B	A-ii, B-i, C-iii
C	A-i, B-iii, C-ii
D	A-ii, B-iii, C-i

Correct Ans: **B**

Itemcode : **CJ1018**

Q18: Identify the following statements as true/false

i) An XML application of HTML is defined as XHTML

ii) SVG is a followed XML format which is used to create vector graphics with the support for interactivity and animation

iii) You can add comments to your HTML source by using the following syntax:
   <!-- Write your comments here -->

iv) Canvas is a not a pixel-based graphics

A	T T T F
B	T F F F
C	T F T F
D	All are false

Correct Ans: **A**

Itemcode : **CJ1019**

Q19: Which of the following statement(s) is/are true with reference to the way of describing XML data?

S1) XML uses DTD to describe the data

S2) XML uses XSL to describe the data

S3) XML uses a description node to describe the data Codes:

A	S1 only
B	S2 only
C	S1 and S3
D	S1 and S2

Correct Ans: **C**

Itemcode : **CJ1020**

Q20: How to add a background image and background color using CSS. Identify the correct option given below:

A	body { background image: url("paper.gif"); background color: lightblue; }
B	body { background-image: url("paper.gif"); background-color: lightblue; }
C	body { background image = url("paper.gif"); background color = lightblue; }
D	body { background-image = url("paper.gif"); background-color=lightblue; }

Correct Ans: **B**

Itemcode : **CJ1021**

Q21:	How to define an anonymous function in Java Script

A	var display=function()
	{
	alert("Anonymous Function is invoked");
	}
	display();

B	var display=function()
	{
	Document.writeln("Anonymous Function is invoked");
	}
	display();

C	both
	var display=function()
	{
	alert("Anonymous Function is invoked");
	}
	display();
	and
	var display=function()
	{
	Document.writeln("Anonymous Function is invoked");
	}
	display();
	are correct

D	anonymous functions are not possible in Java Script

Correct Ans: **C**

Itemcode : **CJ1022**

Q22: Which of the following tags are provided by Java Server Pages Standard Tag Library (JSTL)?

    i) core tags

    ii) sql tags

    iii) xml tags

    iv) internationalization tags

    v) functions tags

A	i, iii, v only
B	i, ii, iii only
C	i, iii, iv only
D	i, ii, iii, iv, v

Correct Ans: **D**

Itemcode : **CJ1023**

Q23: Who is the founder of android?

A	Andy Rubin
B	Brendan Eich
C	Both Andy Rubin and Brendan Eich
D	None of the above

Correct Ans: **A**

Itemcode : **CJ1024**

Q24: Consider the following C program:

```
#include <stdio.h>
Int main() {
    float sum = 0.0, j = 1.0, i = 2.0;
    while (i / j > 0.062) {
        j = j + j;
        printf("%fn", sum);}
    return 0;}
```

The number of times variable sum will be printed when the above program is executed is _____.

A	4
B	5
C	6
D	7

Correct Ans: **C**

Itemcode : **CJ1025**

Q25: Consider the following C program:

```
#include<stdio.h>
Int main() {
    int a[] = {2, 4, 6, 8, 10};
    int i, sum = 0, *b = a + 4;
    for (i = 0; i< 5; i++ )
        sum = sum + (*b - i) - *(b - i);
    printf("%dn", sum);
    return 0;
}
```

The output of above C program is _____ .

A	10
B	22
C	30
D	38

Correct Ans: **A**

Itemcode : **CJ1026**

Q26: Which one of the following is non-vectored interrupt?

A	TRAP
B	INTR
C	RST 7.5
D	RST 6.5

Correct Ans: **B**

Itemcode : **CJ1027**

Q27:	For Σ = {a, b}, let us consider the regular language L = {x | x = $a^{3 + 4k}$ or x = $b^{11 + 13k}$, k ≥ 0}. Which one of the following can be a pumping length (the constant guaranteed by the pumping lemma) for L?

A | 3

B | 5

C | 9

D | 14

Correct Ans: **D**

Itemcode : **CJ1028**

Q28: Which one of the following statements is True?

A | Context-free grammar can be used to specify both lexical and syntax rules.

B | High-level language programs can be translated to different Intermediate Representations.

C | Arguments to a function can be passed using the program stack.

D | All of the above.

Correct Ans: **D**

Itemcode : **CJ1029**

Q29: Consider the following languages:

I. {$a^m b^n c^p d^q$ \| m + p = n + q, where m, n, p, q ≥ 0}

II. {$a^m b^n c^p d^q$ \| m = n and p = q, where m, n, p, q ≥ 0}

III. {$a^m b^n c^p d^q$ \| m = n = p and p ≠ q, where m, n, p, q ≥ 0}

IV. {$a^m b^n c^p d^q$ \| mn = p + q, where m, n, p, q ≥ 0}

Which of the above languages are context-free?

A | I and IV

B | I and II

C | II and III

D | II and IV

Correct Ans: **B**

Itemcode : **CJ1030**

Q30: Consider the following problems. L(G) denotes the language generated by a grammar G. L(M) denotes the language accepted by a machine M.

i) For an unrestricted grammar G and a string w, whether w∈L(G)

ii) Given a Turing machine M, whether L(M) is regular

iii) Given two grammar G_1 and G_2, whether L(G_1) = L(G_2)

iv) Given an NFA N, whether there is a deterministic PDA P such that N and P accept the same language

Which of the following is correct about above four statements?

A	i and ii are undecidable
B	ii is undecidable
C	i, ii, and iii are undecidable
D	i and iv are undecidable

Correct Ans: **C**

Itemcode : **CJ1031**

Q31: Let L = {a^p | p is a prime}. Then which of the following is true?

A	It is regular but not context free
B	It is context free but not regular
C	It is not accepted by a Turing machine
D	It is neither regular nor context free but accepted by Turing machine

Correct Ans: **D**

Itemcode : **CJ1032**

Q32: A particular BNF definition for a "word" is given by the following rules.
<word> :: = <letter> | <letter><charpair>| <letter><intpair>
<charpair> :: = <letter><letter> | <charpair><letter><letter>
<intpair> :: = <integer><integer> | <intpair><integer><integer>
<letter> :: = a | b | c | d |...........| y | z
<integer> :: = 0 | 1 | 2 | 3 |...........| 9
Which of the following lexical entries can be derived from < word >? i. pick ii. picks iii. c44

A	i and ii
B	ii only
C	ii and iii
D	i, ii, and iii

Correct Ans: **C**

Itemcode : **CJ1033**

Q33: Which of the following is FALSE?

A	The grammar S→aS|aSbS|ϵ, where S is the only non-terminal symbol, and ϵ is the null string, is ambiguous.
B	In some programming languages, an identifier is permitted to be a letter followed by any number of letters or digits. If L and D denotes the set of letters and digit respectively then (L+D)* defines an identifier.
C	Compliment of every context-free language is recursive.
D	Pumping lemma is commonly used by regular language to prove that a grammar is not regular.

Correct Ans: **B**

Itemcode : **CJ1034**

Q34: Consider the intermediate code given below:

1. i = 1

2. j = 1

3. t1 = 5 * i

4. t2 = t1 + j

5. t3 = 4 * t2

6. t4 = t3

7. a[t4] = −1

8. j = j + 1

9. if j <= 5 goto(3)

10. i = i + 1

11. if i< 5 goto(2)

The number of nodes and edges in the control-flow-graph constructed for the above code, respectively, are

A	5 and 6
B	6 and 7
C	7 and 8
D	8 and 9

Correct Ans: **B**

Itemcode : **CJ1035**

Q35: Which grammar rules breach an operator's grammar requirements?

i. A → Q R

ii. A → Q s R

iii. A → ε

iv. A → Q t R r

A	iii only
B	i and iii only
C	ii and iii only
D	iii and iv only

Correct Ans: **B**

Itemcode : **CJ1036**

Q36: In computers, subtraction is carried out usually by _____

A	1's complement method
B	2's complement method
C	Signed magnitude method

D	BCD subtraction method

Correct Ans: **B**

Q37: Given the following expression grammar:

A → A∗ B| B + A| B

B → B − B| id

Which of the following is true?

A	* has higher precedence than +
B	+ has lower precedence than *
C	* and − have same precedence
D	All the statements given above are false

Correct Ans: **D**

Q38: How much memory is required to implement z-buffer algorithm for a 512 x 512 x 24 bit-plane image?

A	1.5 MB
B	1.5 GB
C	1.6 MB
D	1.6 GB

Correct Ans: **A**

Q39: Which of the following are side effects of scan conversion?

i) Unequal intensity of diagonal lines

ii) Local or Global aliasing

iii) Over striking in photographic applications

iv) Aliasing

A	i and ii only
B	ii and iv only
C	ii, iii, and iv only
D	All of the mentioned above

Correct Ans: **D**

Q40: Match the following:

List I	List II
A) Cavalier Projection	i) The direction of projection is chosen so that there is no foreshortening of lines perpendicular to the xy plane.
B) Cabinet Projection	ii) The direction of projection is chosen so that lines perpendicular to the xy planes are foreshortened by half their lengths.
C) Isometric Projection	iii) The direction of projection makes equal angles with all of the principal axis.
D) Orthographic Projection	iv) Projections are characterized by the fact that the direction of projection is perpendicular to the view plane.

A	A - i, B - ii, C-iii, D - iv
B	A - ii, B - i, C -iii, D - iv
C	A - i, B - ii, C -iv, D - iii
D	A - ii, B - i, C - iv, D - iii

Correct Ans: **A**

Itemcode : **CJ1041**

Q41: _____ are those which have the property of a shape that has the same degree of roughness no matter how much it is magnified?

A	Key frame systems
B	Fractals
C	Turtle Graphics
D	Quadric Surfaces

Correct Ans: **B**

Itemcode : **CJ1042**

Q42: Identify the correct answer:

S1) Transformation of object shape from one form to another is known as morphing.

S2) Tweening is the process, which applies to animation objects defined by a sequence of points, and that change shape from frame to frame.

A	S1 is False, S2 is True
B	S1 is True, S2 is True
C	S1 is False, S2 is False
D	S1 is True, S2 is False

Correct Ans: **B**

Itemcode : **CJ1043**

Q43: Determine the output of the following Java code snippet.
```
public class Myclass{
```

```
public static void main(String[] args) {
System.out.println(2+0+3+"CSE"+4+5);
} }
```

A	5CSE9
B	5CSE45
C	5CSE
D	CSE

Correct Ans: **B**

Itemcode : **CJ1044**

Q44: Determine the output of the following Java code snippet.

```
int x = 20;

String str = (x < 15)? "small": (x < 22) ? "medium" : "large"

System.out.println( str );
```

A	null
B	small
C	medium
D	large

Correct Ans: **C**

Itemcode : **CJ1045**

Q45: Determine the output of the following, if p=10 and q=2.

```
public int division(int p, int q) {
try {
System.out.print("Try block, ")
return p / q;
} catch (ArithmeticException e) {
System.err.println("Catch block, ");
return -1;
} finally {
System.out.println("Finally block");
} }
```

A	Try block
B	Try block, Catch block
C	Try block, Catch block, Finally block
D	Try block, Finally block

Correct Ans: **D**

Itemcode : **CJ1046**

Q46: If it takes 20ns to search the TLB and 100ns to access the memory and 70% is the hit ratio for TLB. What is the effective access time of memory?

A	140ns
B	50ns

C	150ns
D	40ns

Correct Ans: **C**

Itemcode : **CJ1047**

Q47: Consider the arrival and burst time for the processes P1, P2, P3, and P4. Calculate the waiting time of process P2 using shortest remaining time first (SRTF) algorithm.

Process	Arrival Time	Burst Time
P1	0	20
P2	15	25
P3	30	10
P4	45	15

A	10
B	40
C	55
D	15

Correct Ans: **D**

Itemcode : **CJ1048**

Q48: The maximum number of processes executing the printf statement is _____ in the following code snippet.

```
main()
{
if (fork()&& fork()){
fork();
}
printf("Operating System");
}
```

A	2
B	4
C	6
D	8

Correct Ans: **B**

Itemcode : **CJ1049**

Q49: The _____ of a process is shared by all the threads spawned by it.

A	Address Space
B	Program Counter
C	Registers
D	Stack

Correct Ans: **A**

Itemcode : **CJ1050**

Q50: Requests for a disc driver for cylinders in the order of 10, 22, 20, 2, 40, 6, and 38 arise at a time when the disc drive reads from cylinder 20. 4ms/cylinder is the seek time. If the disc arm's scheduling algorithm is first-come-

	first-served, the cumulative seek time is
A	582 ms
B	684 ms
C	584 ms
D	682 ms
Correct Ans: **C**	

Itemcode : **CJ1051**

Q51: A hash function H defined H(key)=key mod 7, with linear probing, is used to insert the keys 45, 44, 91, 55, 77, 18, 63 into a table indexed from 0 to 6. What will be the location of key 63?

A	4
B	5
C	6
D	1
Correct Ans: **B**	

Itemcode : **CJ1052**

Q52: The following postfix expression with single digit operands is evaluated using a stack:

64 2 5 ^ / 2 3 * + 7 5 * -

Note that ^ is the exponentiation operator. The top two elements of the stack after the second * is evaluated are _____,_____.

A	5, 7
B	7, 8
C	35, 8
D	None of the above
Correct Ans: **C**	

Itemcode : **CJ1053**

Q53: What is the worst case time complexity for search, insert and delete operations in splay tree?

A	O(n) in all the cases
B	O(logn) for all
C	O(logn) for search & insert, O(n) for delete
D	O(logn) for search and O(n) for insert & delete
Correct Ans: **B**	

Itemcode : **CJ1054**

Q54: Randomized quick sort effectively solved by

A	Las Vegas Algorithm
B	Monte Carlo Algorithm

C	Greedy Approach
D	Dynamic Programming

Correct Ans: **A**

Itemcode : **CJ1055**

Q55: The following numbers are inserted into an empty binary search tree in the given order: 100, 512, 1001, 85, 78, 2, 55, 717, 853, 900, 17. What is the height of the binary search tree (H=L+1; L=0), number of nodes in left subtree, and number of nodes in right subtree?

A	5, 5, 5
B	5, 6, 4
C	6, 7, 3
D	6, 5, 5

Correct Ans: **D**

Itemcode : **CJ1056**

Q56: i) Consider an example of AVL tree where 8 is at the root and 11 is in the right of 8, 10 is in the left of 11.

ii) Consider another example of an AVL tree where 8 is at the root and 5 is in the left of 8, 4 is in the left of 5.

Now after RL rotation in case (i) and LL rotation in case (ii), who will become the new root of AVL tree?

A	11, 5
B	10, 6
C	11, 4
D	10, 5

Correct Ans: **D**

Itemcode : **CJ1057**

Q57: The Unified Process is described by…………… and maintained by………….

A	Jelnski Moranda; IBM
B	James Martin; IBM
C	I. Jacobson, G. Booch, and J. Rambaugh ; Rational Software Corporation
D	None of the above

Correct Ans: **C**

Itemcode : **CJ1058**

Q58: Calculate the Cyclomatic Complexity of the following code snippet

```
#include<stdio.h>
int main()
{
int n1=0, n2=1, n3, i, number;
printf("Enter the number of elements:");
scanf("%d",&number);
printf("\n%d %d",n1,n2);//printing 0 and 1
for(i=2;i<number;++i) //loop starts from 2 because 0 and 1 are already printed
{
n3=n1+n2;
printf(" %d",n3);
n1=n2;
n2=n3;
}
return 0;
}
```

A	1
B	2
C	3
D	4

Correct Ans: **B**

Itemcode : **CJ1059**

Q59: A project size of 200 KLOC is to be developed. Software development team has average experience on similar type of projects. The project schedule is not very tight. Calculate the effort and development time of this project.

A	1133.12PM, 29.3M
B	625.66 PM, 28.87M
C	620.65 PM, 27. 54M
D	1205.87PM, 28.87M

Correct Ans: **A**

Itemcode : **CJ1060**

Q60: Which one of the following is not a software size measure?

A	LOC
B	FP
C	Cyclomatic Complexity
D	Program length

Correct Ans: **C**

Itemcode : **CJ1061**

Q61: Identify the answer in terms of true/false:

S1) The extent of effort required to learn, operate, and understand the functionality is known as Traceability.

S2) The extent to which a software tolerates unexpected problems is known as Robustness.

S3) The amount of computing resources and code required by the software to perform a function is known as Efficiency.

A	S1 True, S2 True, S3 False
B	S1 False, S2 True, S3 False
C	S1 False, S2 False, S3 True
D	S1 False, S2 True, S3 True

Correct Ans: **D**

Itemcode : **CJ1062**

Q62: Match the following

List I
A) UDP Total Length
B) Ethernet Mac Address
C) IPv6 Next Header
D) TCP Sequence Number

List II
i)   8 bits
ii) 16 bits
iii) 48 bits
iv) 32 bits

A	A-ii, B-iii, C-iv, D-i
B	A-i, B-iii, C-ii, D-iv
C	A-ii, B-iii, C-i, D-iv
D	A-iv, B-iii, C-i, D-ii

Correct Ans: **C**

Itemcode : **CJ1063**

Q63: Determine the maximum length of the cable (in km) for transmitting data at a rate of 600 MBPS in an Ethernet LAN with frames of size 10,000 bits. Assume the signal speed in the cable to be 3,00,000 km/s.

A	2
B	2.5
C	3
D	5

Correct Ans: **B**

Itemcode : **CJ1064**

Q64: Simple Network Management Protocol is a framework for managing devices in an internet using TCP/IP protocol suits. What is/are the type(s) of message used by Simple Network Management Protocol?

A	GetNextRequest, SetRequest, Trap
B	EchoRequest, InformationRequest, InformationReply
C	DestinationUnreachable, TimeExceeded, PacketTooShortReply
D	None of the above

Correct Ans: **A**

Itemcode : **CJ1065**

Q65: Which of the following are example(s) of stateful protocol(s)?

	i) HTTP ii) FTP iii) TCP iv) POP3
A	i, ii, iii only
B	ii, iii, iv only
C	ii, iii only
D	iii, iv only
Correct Ans: **B**	

Itemcode : **CJ1066**

Q66: Which of the following methods of hacking records all your keystrokes?

A	Keyhijacking
B	Keyjacking
C	Keylogging
D	Keyboard monitoring
Correct Ans: **C**	

Itemcode : **CJ1067**

Q67: Determine the output of the following C++ snippet.

```cpp
#include <iostream>
using namespace std;
class Base
{
    public:
    virtual void show()
    {
cout<<"Welcome to Exam";
    }
};
class Derived:public Base
{
    public:
    void show()
    {
cout<<"Welcome to the Campus";
    }
};

int main()
{
    Base* b;
    Derived d;
    b=&d;
    b->show();
            return 0;
}
```

A	Welcome to Exam
B	Welcome to the Exam Welcome to the Campus

C	Welcome to the Campus Welcome to the Exam
D	Welcome to the Campus

Correct Ans: **D**

Q68: Choose the characteristics of friend function in C++

i) The friend function is not in the scope of the class in which it has been declared.

ii) Since it is not in the scope of the class, so it cannot be called by using the object of the class.

iii) A friend function cannot access the private members directly; it has to use an object name and dot operator with each member name.

iv) Friend function uses objects as arguments.

A	iii, iv only
B	ii, iii only
C	ii, iii, iv only
D	i, ii, iii, iv

Correct Ans: **D**

Q69: Which of the following statement(s) is/are True

S1) Function overloading provides multiple definitions of the function by changing signature i.e. changing number of parameters, change data type of parameters, return type doesn't play any role.

S2) Function overriding is the redefinition of base class function in its derived class with same signature i.e. return type and parameters.

A	S1 is True, S2 is True
B	S1 is True, S2 is False
C	S1 is False, S2 is True
D	S1 is False, S2 is False

Correct Ans: **A**

Q70: What will be the output of the following C++ code?

```
#include <iostream>
#include <string>
Using namespace std;
Class Wel
{
        int a;
public:
        virtual void func()=0;
};

class Come:public Wel
{
public:
        void func(){
cout<<"Class Come"<<endl;
        }      };
 Int main(int argc, char const *argv[])
{
        Wel a;
        a.func();
        return0;
}
```

A	Class Come
B	Error
C	Segmentation fault
D	No output

Correct Ans: **B**

Itemcode : **CJ1071**

Q71: Consider an enhancement to the processor of a web server. The enhanced CPU is 50 times faster on search acquires than old processor. Old processor is busy with search queries 70% of the time. Then the speedup gained by integrating the enhanced CPU is?

A	3.72
B	3.18
C	3. 90
D	3.50

Correct Ans: **B**

Itemcode : **CJ1072**

Q72: Consider the following Assembly language program

```
MVI, A    30 H
  ACI     30 H
  XRA     A
  POP     H
```

After the execution of the above program, the contents of the accumulator will be

A	30 H
B	60 H
C	00 H

D	Contents of Stack

Correct Ans: **C**

Itemcode : **CJ1073**

Q73: Consider a direct mapped cache of size 32 KB with block size 64 bytes. The CPU generates 32 bit addresses. The number of bits needed for cache indexing and the number of tag bits are respectively

A	9, 17
B	10, 22
C	17, 15
D	9, 6

Correct Ans: **A**

Itemcode : **CJ1074**

Q74: Consider the transactions T1, T2, and T3 and the schedules S1 and S2 given below.

T1: r1(X); r1(Z); w1(X); w1(Z)

T2: r2(Y); r2(Z); w2(Z)

T3: r3(Y); r3(X); w3(Y)

S1: r1(X); r3(Y); r3(X); r2(Y); r2(Z);

w3(Y); w2(Z); r1(Z); w1(X); w1(Z)

S2: r1(X); r3(Y); r2(Y); r3(X); r1(Z);

r2(Z); w3(Y); w1(X); w2(Z); w1(Z)

Which one of the following statements about the schedules is TRUE?

A	Only S1 is conflict-serializable
B	Only S2 is conflict-serializable
C	Both S1 and S2 are conflict-serializable
D	Neither S1 nor S2 is conflict-serializable

Correct Ans: **A**

Itemcode : **CJ1075**

Q75: Which of the following is used to alarm about the collision detection in a network using CSMA/CD?

A	Frame
B	Backoff Value
C	Jamming Signal
D	Interframe Space

Correct Ans: **C**

Itemcode : **CJ1076**

Q76: If there are five routers and six networks in intranet using link state routing, how many routing tables are there?

A	8
B	7
C	6
D	5

Correct Ans: **D**

Itemcode : **CJ1077**

Q77: Consider the following relations:

$R_1(a,b)$ iff(a+b) is even over the set of integers

$R_2(a,b)$ iff(a+b) is odd over the set of integers

$R_3(a,b)$ iff a*b>0 over the set of non-zero relational numbers

$R_4(a,b)$ iff | a+b |<=2 over the set of natural numbers

Which of the following statement is correct?

A	R_1 and R_2 are equivalence relational, R_3 and R_4 are not
B	R_1 and R_3 are equivalence relational, R_2 and R_4 are not
C	R_1 and R_4 are equivalence relational, R_2 and R_3 are not
D	R_1, R_2, R_3, and R_4 all are equivalence relational

Correct Ans: **B**

Itemcode : **CJ1078**

Q78: If the frame buffer has 11-bits per pixel and 8 bits are allocated for each of the R, G, and B components then what would be the size of the color lookup table(LUT)

A	2^19 bytes
B	16384 bytes
C	88 bytes
D	6144 bytes

Correct Ans: **D**

Itemcode : **CJ1079**

Q79: Which of the following statement is true?

A	DELETE does not free the space containing the table and TRUNCATE free the space containing the table
B	Both DELETE and TRUNCATE free the space containing the table
C	Both DELETE and TRUNCATE does not free the space containing the table
D	DELETE free the space containing the table and TRUNCATE does not free the space containing the table

Correct Ans: **A**

Itemcode : **CJ1080**

Q80: Let E1 and E2 be 2 entities in an E-R diagram with simple single-valued attributes, R1 and R2 are 2 relationships between E1 and E2, where R1 is one to many and R2 is many to many. R1 and R2 do not have

	any attributes of their own. What is the minimum number of tables required to represent this situation in the relational model?
A	5
B	4
C	3
D	2

Correct Ans: **C**

Itemcode : **CJ1081**

Q81: Which of the following is correct about the geographical features of the district of Bilaspur of H.P.?

(i) Its main rivers include the Satluj and the Beas.

(ii) It is expanded on both sides of the river Satluj.

(iii) It has only one natural lake.

(iv) It has also a very few natural springs.

A	(i) & (ii).
B	(ii) & (iii).
C	(ii) & (iv).
D	(iii) & (iv).

Correct Ans: **C**

Itemcode : **CJ1082**

Q82: Where does the Banganga river join the Beas river in H.P.?

A	In the Manali Valley.
B	In the Kullu Valley.
C	In the Mandi Valley.
D	In the Kangra Valley.

Correct Ans: **D**

Itemcode : **CJ1083**

Q83: Which of the following is correct about the Tribal Sub-Plan strategy under the Fifth Five Year Plan in Himachal Pradesh?

(i) In the beginning, there were Six Tribal Development Blocks.

(ii) Later on, three Integrated Tribal Development Projects (ITDPs) were constituted in place of Tribal Development Blocks.

(iii) Still later, two new ITDPs were carved out by separating Spiti from Lahaul and Pangi from Bharmour (Chamba district), thereby increasing the number from three to five.

A	(i) & (ii).
B	(ii) & (iii).
C	(iii) & (i).

D	(i) only.

Correct Ans: **B**

Itemcode : **CJ1084**

Q84: Which of the following is correct about the growth of Education in Himachal Pradesh in the Censuses of 2001 and 2011?

(i) There is seen considerable increase in the Census of 2011 as compared to the Census of 2001.

(ii) The increase was very marginal, i.e., just less than 1%.

(iii) It was above the national level.

A	(i) & (iii).
B	(ii) & (i).
C	(iii) & (ii).
D	(ii) only.

Correct Ans: **A**

Itemcode : **CJ1085**

Q85: Which of the following is true about the literacy rate among the Scheduled Castes in Himachal Pradesh in the Census of 1991?

(i) Five out of 12 districts show it about 70%.

(ii) Only two districts show it above 70%.

(iii) Not even a single district was above 70%.

(iv) Only three districts were above 70%.

A	(i) & (iii).
B	(ii) & (iv).
C	(iii) only.
D	(iv) only.

Correct Ans: **C**

Itemcode : **CJ1086**

Q86: In which of the following two districts of Himachal Pradesh the Forest Eco-Systems Climate Proofing Project is being set-up by about 2023?

A	Shimla and Kangra.
B	Solan and Hamirpur
C	Chamba and Mandi.
D	Kangra and Chamba.

Correct Ans: **D**

Itemcode : **CJ1087**

Q87: Of the following three broad sectors, namely the Primary sector (Agriculture, etc.), Secondary (Industry) sector and Tertiary (Services) sector, which has made the highest contribution to the GSDP of Himachal Pradesh for the year 2018-19?

A	The Primary Sector.
B	The Secondary Sector.
C	The Tertiary or the Service Sector.
D	Both The Primary Sector and The Tertiary or the Service Sector are bracketed.

Correct Ans: **B**

Q88: Find out the correct match of the following temples with the districts in which they are located in H.P :

	Temple		District
(i)	Masrur Temple	(a)	Kullu.
(ii)	Panchavaktra Temple	(b)	Kangra.
(iii)	Maheshwara Temple	(c)	Kinnaur.
(iv)	Adi Brahma Temple	(d)	Mandi.

A	(i) − (c); (ii) − (a); (iii) − (d); (iv) − (b).
B	(i) − (d); (ii) − (c); (iii) − (a); (iv) − (b).
C	(i) − (a); (ii) − (d); (iii) − (b); (iv) − (c).
D	(i) − (b); (ii) − (d); (iii) − (c); (iv) − (a).

Correct Ans: **D**

Q89: Which of the following is true about the empowerment of women through the Himachal Pradesh State Women Commission?

(i) The Women Commission was constituted under the Himachal Pradesh State Commission for Women Act, 1996.

(ii) Its aim is to furthering the Fundamental Rights guaranteed under the Indian Constitution to women.

(iii) It aims to prepare women to participate in political life from the grassroot level to the national level.

A	(i) & (iii).
B	(ii) & (iii).
C	(i) & (ii).
D	(iii) only.

Correct Ans: **C**

Q90: The tiny Shimla Hall State of Dhami became a part of tehsil after it joined Himachal Pradesh in April, 1948 :

A	Nahan.
B	Kasumpati.
C	Jubbal.
D	Mahasu.

Correct Ans: **B**

Itemcode : **CJ1091**

Q91: Which of the following Metropolitan City is located near the Coromandal Coast?

A | Chennai.
B | Bangaluru.
C | Hyderabad.
D | Mysore.

Correct Ans: **A**

Itemcode : **CJ1092**

Q92: Before the British took over the Nicobar Islands, they were governed by :

A | France.
B | Portugal.
C | The Dutch.
D | Denmark.

Correct Ans: **D**

Itemcode : **CJ1093**

Q93: Which of the following is correct about the working of the Constituent Assembly, elected in 1946?

(i) Some non-Congress members were also elected on the Congress ticket.

(ii) Sachchidanand Sinha was made its provisional President.

(iii) It started functioning only after the Mountbatten Plan announced the Partition of India.

A | (i) & (ii).
B | (ii) & (iii).
C | (iii) & (i).
D | (iii) only.

Correct Ans: **A**

Itemcode : **CJ1094**

Q94: Which of the following is/are not correct about the process of Economic Reforms started by the Narasimha Rao government in 1991?

(i) The country was on the edge of default of payments to the international lenders, so he took the extreme step for starting the reforms.

(ii) Many harsh and unprecedented decisions were taken to streamline the economy.

(iii) The steps led to the growth of India's GDP from 1991-92's mere less than 1% to 3.8% in 1992-93.

A | (i) & (iii).
B | (i) & (ii).
C | (ii) & (iii)

D	(iii) only.

Correct Ans: **D**

Itemcode : **CJ1095**

Q95: Find out the correct match of the following artists with their musical instruments :

(i)	Ramvatar Shastri	(a)	Flute.
(ii)	Hari Prasad Chaurasia	(b)	Sarangi.
(iii)	S. Balachander	(c)	Veena.
(iv)	Ala Rakha Khan	(d)	Tabla.

A	(i) − (d); (ii) − (b); (iii) − (a); (iv) − (c).
B	(i) − (c); (ii) − (d); (iii) − (a); (iv) − (b).
C	(i) − (a); (ii) − (b); (iii) − (c); (iv) − (d).
D	(i) − (b); (ii) − (a); (iii) − (c); (iv) − (d).

Correct Ans: **D**

Itemcode : **CJ1096**

Q96: The Great Slave Lake is located in country:

A	USA.
B	Russia.
C	Canada.
D	Cambodia.

Correct Ans: **C**

Itemcode : **CJ1097**

Q97: Find out the correct match of the following International Organizations with their Head-quarters :

(i)	The African Union	(a)	Addis Ababa.
(ii)	The Interpol	(b)	Brussels.
(iii)	North Atlantic Treaty Organization	(c)	Basel.
(iv)	Bank for International Settlements	(d)	Lyon.

A	(i) − (a); (ii) − (d); (iii) − (b); (iv) − (c).
B	(i) − (a); (ii) − (c); (iii) − (b); (iv) − (d).
C	(i) − (c); (ii) − (a); (iii) − (d); (iv) − (b).
D	(i) − (d); (ii) − (b); (iii) − (c); (iv) − (a).

Correct Ans: **A**

Itemcode : **CJ1098**

Q98: The famous portrait of Mona Lisa is the creation of the great Renaissance painter :

A	Lorenzo de Medici.

B	Giotto.
C	Leonardo da Vinci.
D	Michelangelo.

Correct Ans: **C**

Itemcode : **CJ1099**

Q99: Identify the first two countries of the world which allowed the women to vote in the national elections from the following pair.

A	New Zealand and Australia.
B	England and USA.
C	Canada and Finland.
D	Germany and France.

Correct Ans: **A**

Itemcode : **CJ1100**

Q100: Which of the following pair of two countries of South-East Asia handled the situation very effectively during the COVID-19 pandemic in 2020?

A	Thailand and Malaysia.
B	South Korea and Cambodia.
C	Vietnam and Thailand.
D	South Korea and Vietnam.

Correct Ans: **D**