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Question 1

Correct Mark 1.00 out of 1.00

The preorder traversal of a certain binary search tree is

10532151220

If the value 11 is then added to this tree, what is the preorder traversal of the resulting tree?
(hint: First, draw the tree, using the fact that it is a search tree.)

- ☐ a. 10 11 5 3 2 15 12 20
- ☐ b. 10 5 3 2 15 11 12 20
- ☒ c. 10 5 3 2 15 12 11 20
- ☐ d. 11 10 5 3 2 15 12 20

The correct answer is:

1053215121120

Question 2

Correct Mark 1.00 out of 1.00

When an array is to be sorted, it may happen that some data values start out being in the same position where they should end up. For example, in the array which is originally

40-1330

the 33 is right where it will be in the final sorted output:

-103340

But as a particular sorting algorithm operates, it might (depending on the algorithm) move such an element out of the position where it belongs (of course, it will eventually get moved back).

Which of the following statements are true?

- I. Mergesort never (even temporarily) moves such an element.
- II. Quicksort never (even temporarily) moves such an element.
- III. Selection sort never (even temporarily) moves such an element.

- ☐ a. I only
- ☐ b. I and III
- ☒ c. II and III
- ☐ d. II only

The correct answer is:
II and III

Question 3

Incorrect Mark 0.00 out of 1.00

The initial configuration of the queue is a,b,c,d (a is the front end). To get the configuration d,c,b,a one needs a minimum of ?

- ☐ a. 3 deletions and 3 additions
- ☒ b. 3 additions and 2 deletions
- ☐ c. 3 deletions and 4 additions
- ☐ d. 2 deletions and 3 additions

The correct answer is:
3 deletions and 3 additions

Question 4

Correct Mark 1.00 out of 1.00

Linked lists are not suitable data structure for which one of the following problems?

- ☒ a. Binary search
- ☐ b. Radix sort
- ☐ c. Insertion sort
- ☐ d. Polynomial manipulation

The correct answer is:
Binary search

Question 5

Correct Mark 1.00 out of 1.00

Context free language can be recognized by

- ☒ a. Linear bounded automation and Pushdown automation
- ☐ b. pushdown automation
- ☐ c. Finite State Automation
- ☐ d. Linear bounded automation

The correct answer is:

Linear bounded automation and Pushdown automation

Question 6

Incorrect Mark 0.00 out of 1.00

What is the output of this program?

```
#include <iostream>
```

```
using namespace std;
```

```
int main()
```

```
{
```

```
    int x = 5, y = 5, z = 0;
```

```
    x = ++x; y = --y;
```

```
    z = x++ + y--;
```

```
    cout << z << x << y;
```

```
    return 0;
```

```
}
```

- ☐ a. 10 7 3
- ☐ b. None
- ☒ c. 10 6 3
- ☐ d. 11 7 3

The correct answer is:

10 7 3

Question 7

Incorrect Mark 0.00 out of 1.00

The behavior of a NFA can be stimulated by DFA

- ☐ a. Depends on DFA
- ☐ b. Never
- ☐ c. Always
- ☒ d. Sometimes

The correct answer is:
Always

Question 8

Partially correct Mark 0.67 out of 1.00

Which of these field declarations are legal within the body of an interface?

Select the three correct answers

- ☒ a. `public static int answer = 42;`
- ☐ b. `int answer;`
- ☐ c. `public int answer = 42;`
- ☒ d. `final static int answer = 42;`
- ☒ e. `private final static int answer = 42;`

The correct answers are:
`public static int answer = 42;;`
`final static int answer = 42;;`
`public int answer = 42;`

Question 9

Correct Mark 1.00 out of 1.00

Regular grammar is

- ☒ a. context free grammar
- ☐ b. english grammar
- ☐ c. None
- ☐ d. non context free grammar

The correct answer is:
context free grammar

Question 10

Correct Mark 1.00 out of 1.00

A semaphore that does not specify the order in which processes are removed from the queue is called a weak semaphore.

- ☐ a. False
- ☒ b. True

The correct answer is:
True

Question 11

Correct Mark 1.00 out of 1.00

What is the output of this program?

```
#include <iostream>
```

```
using namespace std;
```

```
int main()
```

```
{
```

```
    int arr[] = {4, 5, 6, 7};
```

```
    int *p = (arr + 1);
```

```
    cout << arr;
```

```
    return 0;
```

```
}
```

- ☒ a. address of arr
- ☐ b. 7
- ☐ c. 5
- ☐ d. 4

The correct answer is:
address of arr

Question 12

Incorrect Mark 0.00 out of 1.00

How do we add a new connection string in the web.config file?

- ☐ a. By adding a <add name="..." connectionString="..." providerName="..."> tag in the authentication section
- ☐ b. By adding a <add name="..." connectionString="..." providerName="..."> tag in the connectionStrings section
- ☒ c. By adding a <new name="..." connectionString="..." providerName="..."> tag in the connectionStrings section
- ☐ d. By adding a <new name="..." connectionString="..." providerName="..."> tag in the authentication section

The correct answer is:

By adding a <add name="..." connectionString="..." providerName="..."> tag in the connectionStrings section

Question 13

Incorrect Mark 0.00 out of 1.00

In ASP.net, you need to manage the state of the controls on a webpage when submitted to itself. The best state management technique would be:

- ☐ a. Hidden Controls
- ☒ b. QueryString
- ☐ c. ViewState
- ☐ d. Cookies

The correct answer is:

ViewState

Question 14

Correct Mark 1.00 out of 1.00

In ASP.net application, why the Global.asax file is used?

- ☒ a. All of the other options
- ☐ b. To define connection string to databases
- ☐ c. To declare Global variables
- ☐ d. To implement application and session level events

The correct answers are:

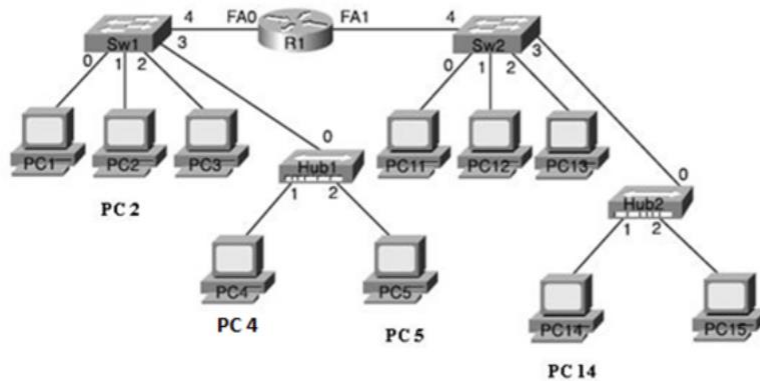
To implement application and session level events,

All of the other options

Question 15

Incorrect Mark 0.00 out of 1.00

How many collision domains exist in this topology?



- ☐ a. 2
- ☐ b. 10
- ☐ c. 12
- ☒ d. 4

The correct answer is:

10

Question 16

Incorrect Mark 0.00 out of 1.00

The systems which allows only one process execution at a time, are called:

- ☐ a. Unitasking systems
- ☐ b. Uniprogramming systems
- ☒ c. Uniprocessing systems
- ☐ d. None

The correct answer is:
Uniprogramming systems

Question 17

Incorrect Mark 0.00 out of 1.00

The_____ operation allows the combining of two relations by merging pairs of tuples, one from each relation, into a single tuple.

- ☒ a. Union
- ☐ b. Join
- ☐ c. Select
- ☐ d. Intersection

The correct answer is:
Join

Question 18

Correct Mark 1.00 out of 1.00

A logical address is an actual location in main memory

- ☒ a. False
- ☐ b. True

The correct answer is:
False

Question 19

Incorrect Mark 0.00 out of 1.00

If the current folder of your website does not contain a Web.config file then the webpages of this folder will follow which configuration file?

- ☐ a. The machine.config
- ☐ b. The web.config of the website's root directory
- ☒ c. No configuration is applied to those webpages
- ☐ d. The first web.config met in the hierarchy upwards

The correct answer is:

The first web.config met in the hierarchy upwards

Question 20

Correct Mark 1.00 out of 1.00

What is the output of this program?

```
#include<iostream>
```

```
using namespace std;
```

```
int calculate (int a, int b);
```

```
float calculate (float a, float b);
```

```
int main ()
```

```
{
```

```
    int x = 5, y = 2;
```

```
    float n = 5.0, m = 2.0;
```

```
    cout << calculate (x, y);
```

```
    cout << calculate (n, m);
```

```
    return 0;
```

```
}
```

```
int calculate (int a, int b)
```

```
{
```

```
    return (a + b);
```

```
}
```

```
float calculate (float a, float b)
```

```
{
```

```
    return (a / b);
```

```
}
```

- ☐ a. 7 2.0
- ☐ b. None
- ☐ c. 10 3.4
- ☒ d. 7 2.5

The correct answer is:

7 2.5

Question 21

Correct Mark 1.00 out of 1.00

How many strings of length less than 4 contains the language described by the regular expression $(x+y)^*y(a+ab)^*$?

- ☐ a. 7
- ☒ b. 11
- ☐ c. 12
- ☐ d. 10

The correct answer is:
11

Question 22

Incorrect Mark 0.00 out of 1.00

Which data structure is used for implementing recursion?

- ☐ a. Stack
- ☐ b. Queue
- ☒ c. Linked List
- ☐ d. Array

The correct answer is:
Stack

Question 23

Incorrect Mark 0.00 out of 1.00

Memory management technique in which system stores and retrieves data from secondary storage for use in main memory is called

- ☒ a. fragmentation
- ☐ b. mapping
- ☐ c. paging
- ☐ d. none

The correct answer is:
paging

Question 24

Incorrect Mark 0.00 out of 1.00

In PHP, to execute a SELECT query you should use the following command:

- ☐ a. mysql_runQuery()
- ☐ b. mysql_select_db()
- ☒ c. mysql_executeQuery()
- ☐ d. mysql_query()

The correct answer is:
mysql_query()

Question 25

Incorrect Mark 0.00 out of 1.00

A _____ is created by using a secure hash function to generate a hash value for a message and then encrypting the hash code with a private key.

- ☐ a. digital signature
- ☐ b. Secret key
- ☒ c. Key stream
- ☐ d. One way hash function

The correct answer is:
digital signature

Question 26

Incorrect Mark 0.00 out of 1.00

The state of a process is defined by:

- ☐ a. The final activity of the process
- ☐ b. The activity to next be executed by the process
- ☒ c. The activity just executed by the process
- ☐ d. The current activity of the process

The correct answer is:
The current activity of the process

Question 27

Incorrect Mark 0.00 out of 1.00

The term _____ is used to refer to a row

- ☐ a. Tuple
- ☐ b. Field
- ☐ c. Attribute
- ☒ d. Instance

The correct answer is:

Tuple

Question 28

Incorrect Mark 0.00 out of 1.00

TLS uses the following cryptographic techniques: (more than one response could be TRUE)

- ☐ a. Cryptographic hash functions
- ☐ b. Nonces.
- ☒ c. Asymmetric-key cryptography.
- ☒ d. Symmetric-key cryptography.
- ☒ e. PKI certificates

The correct answers are:

Asymmetric-key cryptography.,

Symmetric-key cryptography.,

Cryptographic hash functions,

PKI certificates,

Nonces.

Question 29

Incorrect Mark 0.00 out of 1.00

Given the below 16-bit Logical Address:

0001000011001101

And the related Process Page Table:

Page#	Contents
0	0010
1	0011
2	0100
3	1100
4	1110
5	0001
6	0011

The physical address that results from the translation using paging, knowing that the page size is 4K is:

- ☒ a. 0010 000011001101
- ☐ b. 0011 000011001101
- ☐ c. 1100 000011001101
- ☐ d. 0001 000011001101

The correct answer is:

0011 000011001101

Question 30

Incorrect Mark 0.00 out of 1.00

How can we select the elements which have common Dept_name in both the relation ?

- ☒ a. Select Dept name from instructor ,Course;
- ☐ b. Select Dept_name from instructor where Dept_name = NULL;
- ☐ c. Select * from instructor i , course c ;
- ☐ d. Select * from instructor i , course c where i.Dept_name=c.Dept_name;

The correct answer is:

Select * from instructor i , course c where i.Dept_name=c.Dept_name;

Question 31

Incorrect Mark 0.00 out of 1.00

Which of these sorting algorithms has the best (lowest) asymptotic running time when the input list is already sorted?

- I. insertion sort
- II. selection sort
- III. quicksort (choosing the first element of the array as the pivot)
- IV. mergesort

- ☐ a. II
- ☐ b. IV
- ☐ c. I
- ☒ d. III

The correct answer is:

I

Question 32

Correct Mark 1.00 out of 1.00

Select name
from instructor
where salary <= 100000 and salary >= 90000;
This query can be replaced by which of the following ?

- ☐ a. Select name
from employee
where salary between 90000 and 100000;
- ☒ b. Select name
from instructor
where salary between 90000 and 100000;
- ☐ c. Select name
from employee
where salary <=90000 and salary>=100000;
- ☐ d. Select name
from instructor
where salary between 100000 and 90000;

The correct answer is:
Select name
from instructor
where salary between 90000 and 100000;

Question 33

Incorrect Mark 0.00 out of 1.00

'___' matches any string of _____ three characters. '___ %' matches any string of at _____ three characters.

- ☐ a. Exactly, Atleast
- ☐ b. All, Exactly
- ☒ c. Atleast, All
- ☐ d. Atleast, Exactly

The correct answer is:
Exactly, Atleast

Question 34

Incorrect Mark 0.00 out of 1.00

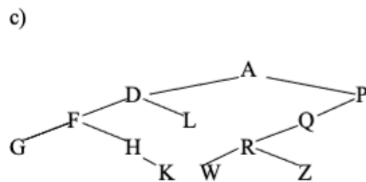
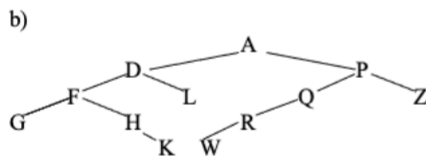
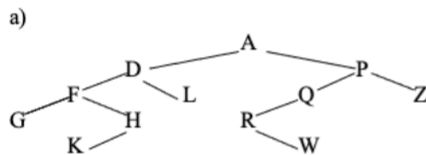
A ~~preorder~~ traversal of a binary tree produced

ADFGHKLPQRWZ

and an inorder traversal of the same tree produced

GFHKDLAWRQPZ

The binary tree is:



- ☐ a. C
☐ b. B
☒ c. None
☐ d. A

The correct answer is:

B

Question 35

Incorrect Mark 0.00 out of 1.00

The following CFG

$S \rightarrow aB|bA$

$A \rightarrow a|as|bAA$

$B \rightarrow b|bs|aBB$

generates strings of terminals that have

- ☐ a. Even number of a's and even number of b's
- ☐ b. Equal number of a's and b's
- ☐ c. Odd number of a's and odd number of b's
- ☒ d. Not equal number of a's and b's

The correct answer is:

Equal number of a's and b's

Question 36

Incorrect Mark 0.00 out of 1.00

Which of the following refers to a cloud computing model in which you acquire all your technology needs—storage hardware and data, network equipment, application software, operating system software—in the cloud?

- ☐ a. Infrastructure-as-a-service
- ☒ b. multi-tier infrastructure
- ☐ c. Sustainable interoperability
- ☐ d. Distributed infrastructure

The correct answer is:

Infrastructure-as-a-service

Question 37

Correct Mark 1.00 out of 1.00

What will the following program segment do?

```
int counter = 1;

do
{
    cout << counter << " ";
} while ( ++counter <= 10 );
```

- ☒ a. Print the numbers 1 through 10.
- ☐ b. Print the numbers 1 through 11.
- ☐ c. Cause a syntax error
- ☐ d. Print the numbers 1 through 9.

The correct answer is:
Print the numbers 1 through 10.

Question 38

Correct Mark 1.00 out of 1.00

Suppose we're debugging a quicksort implementation that is supposed to sort an array in ascending order. After the first partition step has been completed, the contents of the array are in the following order:

3911417242220

Which of the following statements is correct about the partition step?

- ☐ a. The pivot could have been 17 but could not have been 14
- ☒ b. The pivot could have been either 14 or 17
- ☐ c. The pivot could have been 14, but could not have been 17
- ☐ d. Neither 14 nor 17 could have been the pivot

The correct answer is:

The pivot could have been either 14 or 17

Question 39

Incorrect Mark 0.00 out of 1.00

A set of processes is deadlock if

- ☐ a. Each process is blocked and will remain so forever
- ☒ b. None
- ☐ c. Each process is terminated
- ☐ d. All processes are trying to kill each other

The correct answer is:

Each process is blocked and will remain so forever

Question 40

Incorrect Mark 0.00 out of 1.00

Which cloud characteristic refers to the ability of a subscriber to increase or decrease its computing requirements as needed without having to contact a human representative of the cloud provider?

- ☒ a. Resource pooling
- ☐ b. On-demand self service
- ☐ c. Broad network access
- ☐ d. Rapid elasticity

The correct answer is:
On-demand self service

Question 41

Correct Mark 1.00 out of 1.00

You need to manage the state of the controls on a webpage when submitted to itself.
The best state management technique would be:

- ☐ a. QueryString
- ☒ b. ViewState
- ☐ c. Cookies
- ☐ d. Hidden Controls

The correct answer is:
ViewState

Question 42

Incorrect Mark 0.00 out of 1.00

Which of the following is true about session in ASP.NET?

- ☒ a. None
- ☐ b. ASP.NET automatically delete sessions after configurable timeout interval
- ☐ c. The default time interval is 5 minutes
- ☐ d. Programmers has to take care of delete sessions after configurable timeout interval

The correct answer is:

ASP.NET automatically delete sessions after configurable timeout interval

Question 43

Incorrect Mark 0.00 out of 1.00

Create table employee (name varchar, id integer)
What type of statement is this ?

- ☒ a. DML
- ☐ b. Integrity constraint
- ☐ c. DDL
- ☐ d. View

The correct answer is:

DDL

Question 44

Correct Mark 1.00 out of 1.00

In the DHCP Lease Generation process, the sequence of packets exchanged between the DHCP Server and the DHCP Client are?

- ☒ a. DHCP DISCOVER, DHCP OFFER, DHCP REQUEST, DHCP ACK
- ☐ b. DHCP DISCOVER, DHCP ACK, DHCP REQUEST, DHCP OFFER
- ☐ c. DHCP REQUEST, DHCP ACK, DHCP DISCOVER, DHCP OFFER
- ☐ d. DHCP REQUEST, DHCP OFFER, DHCP DISCOVER, DHCP ACK

The correct answer is:

DHCP DISCOVER, DHCP OFFER, DHCP REQUEST, DHCP ACK

Question 45

Incorrect Mark 0.00 out of 1.00

Concurrent access to shared data may result in:

- ☐ a. data inconsistency
- ☒ b. data insecurity
- ☐ c. None
- ☐ d. data consistency

The correct answer is:

data inconsistency

Question 46

Incorrect Mark 0.00 out of 1.00

If a variable is declared in the initialization expression of a for statement, then:

- ☐ a. It is automatically reinitialized to zero once the loop is finished.
- ☒ b. It cannot be used in any structures that are nested in that for structure
- ☐ c. It retains its final value after the loop is finished.
- ☐ d. The scope of the variable is restricted to that for loop

The correct answer is:

The scope of the variable is restricted to that for loop

Question 47

Incorrect Mark 0.00 out of 1.00

The Vendor ID part of the MAC Address:

- ☒ a. Consists of the lower 12 bits and is assigned by the company manufacturing the network card without referring to any external organization
- ☐ b. Consists of the upper 12 bits and is uniquely assigned by a central organization for every company planning to manufacture network cards
- ☐ c. Consists of the lower 24 bits and is assigned by the company manufacturing the network card without referring to any external organization
- ☐ d. Consists of the upper 24 bits and is uniquely assigned by a central organization for every company planning to manufacture network cards

The correct answer is:

Consists of the upper 24 bits and is uniquely assigned by a central organization for every company planning to manufacture network cards

Question 48

Partially correct Mark 0.67 out of 1.00

Which of the following are wrapper classes?

select the three correct answers

- ☐ a. `java.lang.Boolean`
- ☒ b. `java.lang.Void`
- ☐ c. `java.lang.Int`
- ☒ d. `java.lang.String`
- ☒ e. `java.lang.Long`

The correct answers are:

`java.lang.Void`,

`java.lang.Boolean`,

`java.lang.Long`

Question 49

Correct Mark 1.00 out of 1.00

Which operator works only with integer variables?

- ☐ a. increment
- ☒ b. both increment and decrement
- ☐ c. decrement
- ☐ d. None

The correct answer is:

both increment and decrement

Question 50

Incorrect Mark 0.00 out of 1.00

The ~~Master theorem~~ is concerned with recurrence relations of the form:

$T(n) = aT(n/b) + F(n)$ where $a \geq 1$, $b > 1$, Assume $T(n) = 1$ for all $n \leq 100$ as ~~the~~
base case.

Using that theorem, find an asymptotic bound for the following recurrences: (Hint, make use ~~of the~~ **logarithm** ~~notation~~)

1) ~~$T(n) = 4T(n/4) + n^2$~~

- ☒ a. $\Theta(n \log n)$
- ☐ b. $\Theta(n^2)$
- ☐ c. $\Theta(\log n)$
- ☐ d. $\Theta(n)$

The correct answer is:

$\Theta(n^2)$

Question 51

Incorrect Mark 0.00 out of 1.00

When an ASP.NET file is placed on an IIS server and viewed through a browser, the resulting HTML page contains?

- ☒ a. a mix of ASP.NET and HTML code
- ☐ b. all ASP.NET code
- ☐ c. as much ASP.NET code as is in the ASP.NET file
- ☐ d. all HTML code

The correct answer is:
all HTML code

Question 52

Correct Mark 1.00 out of 1.00

What is the output of this program?

```
#include <iostream>

using namespace std;

void change (int&, int&, int&);

int main ()
{
    int x = 2, y = 4, z = 6;
    change (x, y, z);
    cout << x << y << z;
    return 0;
}

void change (int& a, int& b, int& c)
{
    a *= 2;
    b *= 2;
    c *= 2;
}
```

- ☒ a. 4 8 12
- ☐ b. 4 6 14
- ☐ c. None
- ☐ d. 4 6 12

The correct answer is:

4 8 12

Question 53

Correct Mark 1.00 out of 1.00

What is the output of this program?

```
#include <iostream>
```

```
using namespace std;
```

```
int main()
```

```
{
```

```
    int arr[] = {1, 2, 3, 4};
```

```
    int *p = (arr + 2);
```

```
    cout << *p;
```

```
    return 0;
```

```
}
```

- ☐ a. 4
- ☐ b. 2
- ☐ c. 1
- ☒ d. 3

The correct answer is:

3

Question 54

Correct Mark 1.00 out of 1.00

The resource allocation graph shows the state of a system of resources and processes, with each process and each resource represented by a node.

- ☒ a. True
- ☐ b. False

The correct answer is:

True

Question 55

Correct Mark 1.00 out of 1.00

Select emp_name
from department
where dept_name like ' _____ Computer Science';
Which one of the following has to be added into the blank to select the dept_name
which has Computer Science as its ending string ?

- ☐ a. _
- ☒ b. %
- ☐ c. \$
- ☐ d. ||

The correct answer is:
%

Question 56

Incorrect Mark 0.00 out of 1.00

The refinement from an initial entity set into successive levels of entity subgroupings
represents a _____ design process in which distinctions are made explicit.

- ☐ a. Radical
- ☐ b. Top-down
- ☐ c. Bottom-up
- ☒ d. Hierarchy

The correct answer is:
Top-down

Question 57

Incorrect Mark 0.00 out of 1.00

Which of the following cannot be used as the scope when using a JavaBean with JSP?

- ☐ a. application
- ☐ b. response
- ☒ c. session
- ☐ d. request

The correct answer is:
response

Question 58

Correct Mark 1.00 out of 1.00

Select name, course_id
from instructor, teaches
where instructor_ID= teaches_ID;
This Query can be replaced by which one of the following ?

- ☒ a. Select name, course_id from instructor natural join teaches;
- ☐ b. Select course_id from instructor join teaches;
- ☐ c. Select name ,course_id from instructor;
- ☐ d. Select name,course_id from teaches, instructor where instructor_id=course_id;

The correct answer is:
Select name, course_id from instructor natural join teaches;

Question 59

Incorrect Mark 0.00 out of 1.00

Which of the following statements is true?

- ☐ a. JSP is translated into Java servlet by a web server when a JSP is called
- ☒ b. JSP is translated into HTML by a web server when a JSP is called
- ☐ c. JSP is translated into XML by a web server when a JSP is called
- ☐ d. None

The correct answer is:

JSP is translated into Java servlet by a web server when a JSP is called

Question 60

Correct Mark 1.00 out of 1.00

What is the label of the first line that will cause compilation to fail in the following program?

```
// Filename: MyClass.java
class MyClass {
    public static void main(String[] args) {
        MyClass
        a;
        MySubclass b;

        a = new MyClass(); // (1)
        b = new MySubclass(); // (2)
        a = b; // (3)
        b = a; // (4)
        a = new MySubclass(); // (5)
        b = new MyClass(); // (6)
    }
}
```

```
class MySubclass extends MyClass {}
```

- ☐ a. (3)
- ☐ b. (2)
- ☐ c. (1)
- ☒ d. (4)

The correct answer is:
(4)

Question 61

Incorrect Mark 0.00 out of 1.00

One of the earliest and most widely used authentication services is:

- ☐ a. X.509
- ☒ b. PKI
- ☐ c. FIM
- ☐ d. Kerberos

The correct answer is:
Kerberos

Question 62

Incorrect Mark 0.00 out of 1.00

which of the following is not the state of a process?

- ☒ a. Old
- ☐ b. Waiting
- ☐ c. New
- ☐ d. Terminated

The correct answer is:
Waiting

Question 63

Incorrect Mark 0.00 out of 1.00

In a web application environment, which among the following objects is the best choice to share information between online users?

- ☐ a. request
- ☐ b. page
- ☒ c. session
- ☐ d. application

The correct answer is:
application

Question 64

Correct Mark 1.00 out of 1.00

Which declaration can be inserted at (1) without causing a compilation error?

```
interface MyConstants {  
    int r = 42;  
    int s = 69;  
    // (1) INSERT CODE HERE  
}
```

Select the two correct answers

- ☒ a. `final double circumference = 2 * Math.PI * r;`
- ☒ b. `int Area = r * s;`
- ☐ c. `int total = total + r + s;`
- ☐ d. `public static MAIN = 15;`

The correct answers are:
`final double circumference = 2 * Math.PI * r;`,
`int Area = r * s;`

Question 65

Correct Mark 1.00 out of 1.00

Which of the following command is used to display the departments of the instructor relation?

- ☐ a. Select * from instructor ;
- ☐ b. Select dept_name for instructor where Name=Jackson;
- ☐ c. Select * from instructor where Dept_name = Finance;
- ☒ d. Select dept_name from instructor;

The correct answer is:

Select dept_name from instructor;

Question 66

Incorrect Mark 0.00 out of 1.00

What will be the result of attempting to compile and run the following program?

```
public class MyClass {  
    public static void main(String[] args) { RuntimeException re = null;  
    throw re;  
    }  
}
```

Select the one correct answer.

- ☐ a. The program will compile without error and will throw java.lang.NullPointerException when run.
- ☒ b. The program will fail to compile because it cannot throw re.
- ☒ c. The program will compile without error and will throw java.lang.RuntimeException when run.
- ☐ d. The code will fail to compile because the main() method does not declare that it throws RuntimeException in its declaration.

The correct answer is:

The program will compile without error and will throw java.lang.NullPointerException when run.

Question 67

Incorrect Mark 0.00 out of 1.00

Two algorithms, A and B, which solve the same problem, are analyzed, and it is found that B's asymptotic running time is greater than A's. A and B are then implemented (carefully and correctly) as programs and tested on various data sets. What is the best prediction?

- I. A will always run faster than B.
- II. B will always run faster than A.
- III. As the size of the test data increases, A is more and more likely to run faster than B.
- IV. As the size of the test data increases, B is more and more likely to run faster than A.

- ☐ a. III only
- ☐ b. I only
- ☐ c. II only
- ☒ d. IV only

The correct answer is:
III only

Question 68

Correct Mark 1.00 out of 1.00

What will be the result of compiling and running the following program?

```
public class Polymorphism {  
    public static void main(String[] args) { A ref1 = new C();  
    B ref2 = (B) ref1; System.out.println(ref2.f());  
    }  
}  
  
class A { int f() { return 0; } } class B extends A { int f() { return 1; } } class C extends B {  
    int f() { return 2; } }
```

- ☒ a. The program will compile and print 1, when run
- ☐ b. The program will compile and print 0, when run
- ☐ c. The program will compile and print 2, when run
- ☐ d. The program will fail to compile

The correct answer is:

The program will compile and print 1, when run

Question 69

Partially correct Mark 0.50 out of 1.00

Which declarations of the `main()` method are valid in order to start the execution of an application?

Select the two correct answers

- ☒ a. `public static void main(String args[])`
- ☐ b. `final public static void main(String [] array)`
- ☒ c. `public void main(String args[])`
- ☐ d. `public static main(String[] argsv)`
- ☐ e. `public void static main(String args[])`

The correct answers are:

`final public static void main(String [] array),`

`public static void main(String args[])`

Question 70

Correct Mark 1.00 out of 1.00

What is the first useable IP address in the subnet 129.47.208.0/20

- ☒ a. 129.47.208.1
- ☐ b. 129.47.207.254
- ☐ c. 129.47.209.1
- ☐ d. 129.47.209.0

The correct answer is:

129.47.208.1

Question 71

Incorrect Mark 0.00 out of 1.00

Regular expression are

- ☐ a. Type 3 language
- ☐ b. Type 1 language
- ☒ c. Type 2 language
- ☐ d. Type 0 language

The correct answer is:

Type 0 language

Question 72

Incorrect Mark 0.00 out of 1.00

Using Apache Tomcat as a web server and servlet container, If your servlet class file does not have a package statement, the servlet .class file must be placed in _____ by default.

- ☐ a. TomcatRootDir\webapps\examples\WEB-INF
- ☐ b. TomcatRootDir\webapps\examples\WEB-INF\classes
- ☐ c. TomcatRootDir\webapps\WEB-INF\classes
- ☒ d. The same directory with the .java file.

The correct answer is:

TomcatRootDir\webapps\WEB-INF\classes

Question 73

Incorrect Mark 0.00 out of 1.00

The _____ clause allows us to select only those rows in the result relation of the _____ clause that satisfy a specified predicate.

- ☐ a. Where, from
- ☐ b. Select, from
- ☒ c. From, where
- ☐ d. From, select

The correct answer is:

Where, from

Question 74

Incorrect Mark 0.00 out of 1.00

The term attribute refers to a _____ of a table.

- ☐ a. Tuple
- ☒ b. Record
- ☐ c. Key
- ☐ d. Column

The correct answer is:

Column

Question 75

Incorrect Mark 0.00 out of 1.00

In the mergesort algorithm, what is the asymptotic running time of the step of merging sorted subarrays?

- ☐ a. $O(\log n)$
- ☒ b. $O(n \log n)$
- ☐ c. $O(n)$
- ☐ d. $O(n^2)$

The correct answer is:
 $O(n)$

Question 76

Incorrect Mark 0.00 out of 1.00

The prefix form of an infix expression $p + q - r * t$ is:

- ☐ a. $+pq-rt$
- ☐ b. $_{+pq}n$
- ☒ c. $_{+pqr}t$
- ☐ d. $_{+}pqrt$

The correct answer is:
 $_{+pqr}t$

Question 77

Incorrect Mark 0.00 out of 1.00

The number of swapping needed to sort numbers 8, 22, 7, 9, 31, 19, 5, 13 in ascending order using bubble sort is?

- ☐ a. 13
- ☐ b. 14
- ☒ c. 12
- ☐ d. 11

The correct answer is:

14

Question 78

Incorrect Mark 0.00 out of 1.00

When run, the following program will print all the letters I, J, C, and D. True or false?

```
public class MyClass {  
    public static void main(String[] args) { I x =  
        new D();  
        if (x instanceof I) System.out.println("I"); if (x  
        instanceof J) System.out.println("J"); if (x  
        instanceof C) System.out.println("C"); if (x  
        instanceof D) System.out.println("D");  
    }  
}  
  
interface I{}  
interface J{}  
class C implements I {}  
class D extends C implements J {}
```

Select the one correct answer.

- ☐ a. False
- ☒ b. True

The correct answer is:

False

Question 79

Incorrect Mark 0.00 out of 1.00

The number of processes completed per unit time is known as: _____

- ☒ a. Efficiency
- ☐ b. Throughput
- ☐ c. Capacity
- ☐ d. Output

The correct answer is: Throughput

Question 80

Incorrect Mark 0.00 out of 1.00

What is private cloud?

- ☒ a. A cloud that its access is limited to a specific community of cloud consumers
- ☐ b. Is a publicly accessible cloud environment owned by a third-party cloud provider
- ☐ c. A standard cloud service offered via the Internet
- ☐ d. A cloud architecture maintained within an enterprise data center

The correct answer is:
A cloud architecture maintained within an enterprise data center

Question 81

Incorrect Mark 0.00 out of 1.00

What is the output of this program?

```
#include <iostream>
```

```
using namespace std;
```

```
int main()
```

```
{
```

```
    int x = 15;
```

```
    int ans ;
```

```
    ans = x++;
```

```
    cout << ans << x << endl;
```

```
    return 0;
```

```
}
```

- ☒ a. 16 15
- ☐ b. 16 16
- ☐ c. None
- ☐ d. 15 16

The correct answer is:

15 16

Question 82

Incorrect Mark 0.00 out of 1.00

Select ID, name, dept_name, salary * 1.1

where instructor;

The query given below will not give an error. Which one of the following has to be replaced to get the desired output?

- ☐ a. Where
- ☐ b. Salary*1.1
- ☐ c. ID
- ☒ d. Instructor

The correct answer is:
Where

Question 83

Incorrect Mark 0.00 out of 1.00

Which of the following is not included in <cmath> ?

- ☐ a. pow
- ☒ b. floor
- ☐ c. ln
- ☐ d. log

The correct answer is:
ln

Question 84

Incorrect Mark 0.00 out of 1.00

Consider the following grammar.

$$S \rightarrow AB$$
$$A \rightarrow a$$
$$A \rightarrow BaB$$
$$B \rightarrow bbA$$

Which of the following is false?

- ☐ a. The length of every string produced by the grammar is even
- ☐ b. No string produced by the grammar has three consecutive a s
- ☐ c. No string produced by the grammar has four consecutive b s
- ☒ d. No string produced by the grammar has an odd number of consecutive b s

The correct answer is:

No string produced by the grammar has four consecutive b s

Question 85

Incorrect Mark 0.00 out of 1.00

The processes that are residing in main memory and are ready and waiting to execute are kept on a list called:

- ☐ a. Ready queue
- ☐ b. Job queue
- ☐ c. Execution queue
- ☒ d. Process queue

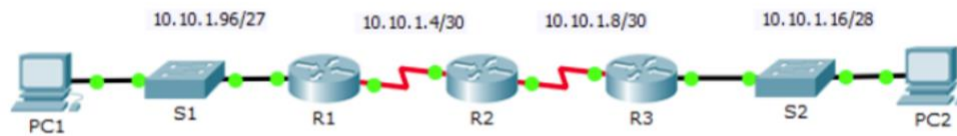
The correct answer is:

Ready queue

Question 86

Incorrect Mark 0.00 out of 1.00

Referring to the following exhibit, an IP packet is sent from PC1 to PC2 with a default TTL value of 64. What will be the TTL value when the packet is received at PC2:



- ☐ a. 62
- ☐ b. 64
- ☐ c. 61
- ☒ d. 59

The correct answer is:
61

Question 87

Correct Mark 1.00 out of 1.00

In PHP, which of the following functions is used to insert content of one php file into another php file before the server executes it?

- ☒ a. `<?php include("filename")?>`
- ☐ b. `<?include="filename" ?>`
- ☐ c. `<?php include="filename";?>`
- ☐ d. `<#include("filename") ?>`

The correct answer is:

`<?php include("filename")?>`

Question 88

Correct Mark 1.00 out of 1.00

Which of the following does counter-controlled repetition *require*?

- ☐ a. An initial value
- ☐ b. An increment or decrement by which the control variable is modified each time through the loop.
- ☐ c. A condition that tests for the final value
- ☒ d. All of the other options

The correct answer is:
All of the other options

Question 89

Correct Mark 1.00 out of 1.00

If we want to retain all duplicates, we must write _____ in place of union.

- ☒ a. Union all
- ☐ b. Union some
- ☐ c. Intersect all
- ☐ d. Intersect some

The correct answer is:
Union all

Question 90

Incorrect Mark 0.00 out of 1.00

iCloud Service is which type of cloud computing distribution model?

- ☐ a. Platform as a Service
- ☒ b. Cloud as a Service
- ☐ c. Infrastructure as a Service
- ☐ d. Software as a Service

The correct answer is:
Software as a Service

Question 91

Correct Mark 1.00 out of 1.00

Which of the following is true?

- ☒ a. All other options
- ☐ b. $(0+1)^*0(0+1)^*1(0+1)=(0+1)^*01(0+1)^*$
- ☐ c. $(01)^*0=0(10)^*$
- ☐ d. $(0+1)^*01(0+1)^*+1^*0^*=(0+1)^*$

The correct answer is:

All other options

Question 92

Incorrect Mark 0.00 out of 1.00

Suppose the partition function (of quicksort) is called on this array:

4765180

Which of the arrays below could result from the call, i.e. which of them satisfies the postconditions of partition? (Assume partition chooses the first element as the pivot.)

- ☐ a. 1 0 5 4 6 8 7
- ☐ b. 1 0 4 5 6 8 7
- ☐ c. 4 8 7 6 5 1 0
- ☒ d. 4 0 1 5 6 8 7

The correct answer is:

1045687

Question 93

Incorrect Mark 0.00 out of 1.00

What will be printed when the following program is run?

```
public class ParameterPass {  
    public static void main(String[] args) {  
        int i = 0;  
        addTwo(i++);  
        System.out.println(i);  
    }  
  
    static void addTwo(int i) {  
        i += 2;  
    }  
}
```

- ☒ a. 3
☐ b. 2
☐ c. 0
☐ d. 1

The correct answer is:

1

Question 94

Incorrect Mark 0.00 out of 1.00

Using the ~~Stirling's~~ formula, show the approximate value received for ~~88~~!

Stirling's formula: ~~$n! \approx (2\pi n)^{1/2} (n/e)^n$~~

- ☐ a. 39800
- ☒ b. 40160
- ☐ c. 39650
- ☐ d. 39902

The correct answer is:
39902

Question 95

Correct Mark 1.00 out of 1.00

State management techniques are used because

- ☐ a. We need to exchange data between different servers
- ☒ b. All of the other options
- ☐ c. We need to exchange data between different web pages
- ☐ d. The web is stateless

The correct answer is:
All of the other options

Question 96

Incorrect Mark 0.00 out of 1.00

Which module gives control of the CPU to the process selected by the short-term scheduler?

- ☐ a. Scheduler
- ☒ b. None
- ☐ c. Dispatcher
- ☐ d. Interrupt

The correct answer is:

Dispatcher

Question 97

Incorrect Mark 0.00 out of 1.00

Which is the legal range of values for a short?

Select the one correct answer.

- ☐ a. -2^7 to 2^7-1
- ☒ b. -2^8 to 2^8
- ☐ c. 0 to $2^{16}-1$
- ☐ d. -2^{15} to $2^{15}-1$

The correct answer is:

-2^{15} to $2^{15}-1$

Question 98

Incorrect Mark 0.00 out of 1.00

Which of the following properties must a cryptographic hash function provide? (more than one response could be TRUE)

- ☐ a. Collision resistance
- ☐ b. A deterministic mapping from input to output
- ☒ c. Difficulty of finding an input that matches a given hash
- ☒ d. Key revocation
- ☒ e. One-to-one mapping of input to output

The correct answers are:

Collision resistance,

Difficulty of finding an input that matches a given hash

Question 99

Incorrect Mark 0.00 out of 1.00

How do you tell the container to assign all the values from a request to corresponding JavaBean attributes?

- ☐ a. `<jsp:useBean name="myBean" setProperty="" />`
- ☐ b. `<jsp:property name="myBean" property="" />`
- ☒ c. `<jsp:getProperty name="myBean" property="" />`
- ☐ d. `<jsp:setProperty name="myBean" property="" />`

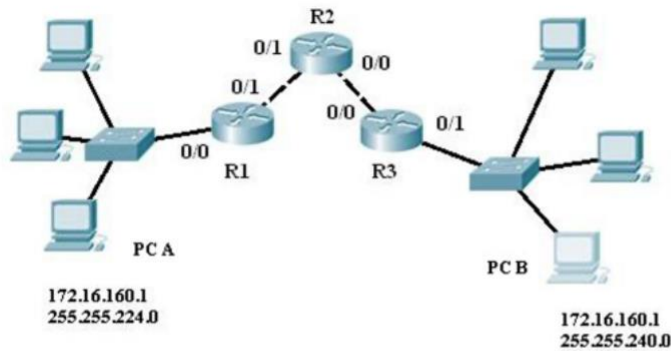
The correct answer is:

`<jsp:setProperty name="myBean" property="" />`

Question 100

Incorrect Mark 0.00 out of 1.00

What is the network IP (Network address) of the network on the left of R1?



- ☐ a. 172.16.0.0
- ☐ b. 172.16.160.0
- ☐ c. 172.0.0.0
- ☒ d. 172.16.160.1

The correct answer is:
172.16.160.0

◀ Comprehensive Exam - Attempt II

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Started on	Friday, 24 June 2022, 12:00 PM
State	Finished
Completed on	Friday, 24 June 2022, 1:10 PM
Time taken	1 hour 10 mins
Grade	35.17 out of 100.00

Question 1

Incorrect Mark 0.00 out of 1.00

The logic of pumping lemma is a good example of:

- ☐ a. Divide the conquer method
- ☐ b. The pigeon hole principle
- ☒ c. Divide and conquer method
- ☐ d. Recursion

The correct answer is:
The pigeon hole principle

Question 2

Correct Mark 1.00 out of 1.00

The_____ operation allows the combining of two relations by merging pairs of tuples, one from each relation, into a single tuple.

- ☒ a. Join
- ☐ b. Select
- ☐ c. Intersection
- ☐ d. Union

The correct answer is:
Join

Question 3

Incorrect Mark 0.00 out of 1.00

You need to manage the state of the controls on a webpage when submitted to itself.
The best state management technique would be:

- ☐ a. QueryString
- ☒ b. Cookies
- ☐ c. ViewState
- ☐ d. Hidden Controls

The correct answer is:
ViewState

Question 4

Incorrect Mark 0.00 out of 1.00

In ASP.net application, why the Global.asax file is used?

- ☐ a. To define connection string to databases
- ☐ b. All of the other options
- ☐ c. To implement application and session level events
- ☒ d. To declare Global variables

The correct answers are:
To implement application and session level events,
All of the other options

Question 5

Correct Mark 1.00 out of 1.00

Select name
from instructor
where salary <= 100000 and salary >= 90000;
This query can be replaced by which of the following ?

- ☐ a. Select name
from employee
where salary <=90000 and salary>=100000;
- ☒ b. Select name
from instructor
where salary between 90000 and 100000;
- ☐ c. Select name
from instructor
where salary between 100000 and 90000;
- ☐ d. Select name
from employee
where salary between 90000 and 100000;

The correct answer is:
Select name
from instructor
where salary between 90000 and 100000;

Question 6

Correct Mark 1.00 out of 1.00

Suppose we're debugging a quicksort implementation that is supposed to sort an array in ascending order. After the first partition step has been completed, the contents of the array are in the following order:

3911417242220

Which of the following statements is correct about the partition step?

- ☐ a. The pivot could have been 17 but could not have been 14
- ☐ b. Neither 14 nor 17 could have been the pivot
- ☒ c. The pivot could have been either 14 or 17
- ☐ d. The pivot could have been 14, but could not have been 17

The correct answer is:

The pivot could have been either 14 or 17

Question 7

Correct Mark 1.00 out of 1.00

A language is regular if and only if

- ☐ a. accepted by PDA
- ☒ b. accepted by DFA
- ☐ c. accepted by Turing machine
- ☐ d. accepted by LBA

The correct answer is:

accepted by DFA

Question 8

Incorrect Mark 0.00 out of 1.00

Which of the following cannot be used as the scope when using a JavaBean with JSP?

- ☐ a. request
- ☐ b. response
- ☒ c. application
- ☐ d. session

The correct answer is:
response

Question 9

Incorrect Mark 0.00 out of 1.00

Which module gives control of the CPU to the process selected by the short-term scheduler?

- ☒ a. Scheduler
- ☐ b. Dispatcher
- ☐ c. None
- ☐ d. Interrupt

The correct answer is:
Dispatcher

Question 10

Incorrect Mark 0.00 out of 1.00

The preorder traversal of a certain binary search tree is

10532151220

If the value 11 is then added to this tree, what is the preorder traversal of the resulting tree?
(hint: First, draw the tree, using the fact that it is a search tree.)

- ☒ a. 11 10 5 3 2 15 12 20
- ☐ b. 10 5 3 2 15 11 12 20
- ☐ c. 10 5 3 2 15 12 11 20
- ☐ d. 10 11 5 3 2 15 12 20

The correct answer is:
1053215121120

Question 11

Incorrect Mark 0.00 out of 1.00

The Vendor ID part of the MAC Address:

- ☐ a. Consists of the upper 12 bits and is uniquely assigned by a central organization for every company planning to manufacture network cards
- ☒ b. Consists of the lower 24 bits and is assigned by the company manufacturing the network card without referring to any external organization
- ☐ c. Consists of the lower 12 bits and is assigned by the company manufacturing the network card without referring to any external organization
- ☐ d. Consists of the upper 24 bits and is uniquely assigned by a central organization for every company planning to manufacture network cards

The correct answer is:

Consists of the upper 24 bits and is uniquely assigned by a central organization for every company planning to manufacture network cards

Question 12

Incorrect Mark 0.00 out of 1.00

What will be the result of attempting to compile and run the following program?

```
public class MyClass {  
    public static void main(String[] args) { RuntimeException re = null;  
    throw re;  
    }  
}
```

Select the one correct answer.

- ☐ a. The program will compile without error and will throw java.lang.RuntimeException when run.
- ☐ b. The program will compile without error and will throw java.lang.NullPointerException when run.
- ☒ c. The program will fail to compile because it cannot throw re.
- ☒ d. The code will fail to compile because the main() method does not declare that it throws RuntimeException in its declaration.

The correct answer is:

The program will compile without error and will throw java.lang.NullPointerException when run.

Question 13

Incorrect Mark 0.00 out of 1.00

Using the ~~Stirling's~~ formula, show the approximate value received for ~~88~~!

Stirling's formula: ~~$n! \approx (2\pi n)^{1/2} (n/e)^n$~~

- ☐ a. 40160
- ☐ b. 39800
- ☒ c. 39650
- ☐ d. 39902

The correct answer is:
39902

Question 14

Correct Mark 1.00 out of 1.00

Regular grammar is

- ☐ a. english grammar
- ☐ b. non context free grammar
- ☐ c. None
- ☒ d. context free grammar

The correct answer is:
context free grammar

Question 15

Incorrect Mark 0.00 out of 1.00

Create table employee (name varchar, id integer)
What type of statement is this ?

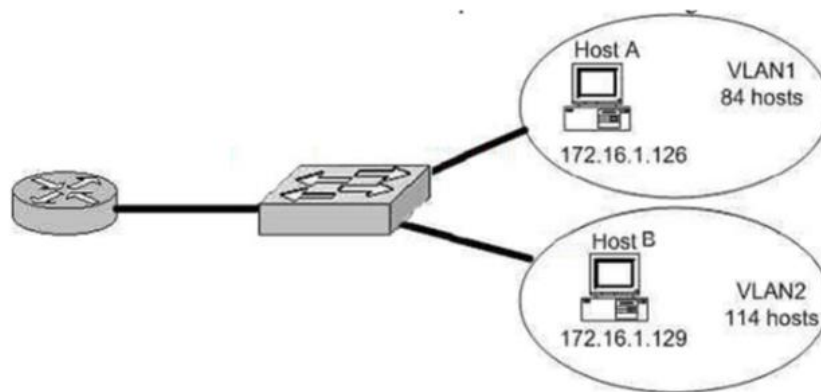
- ☐ a. DDL
- ☐ b. Integrity constraint
- ☒ c. DML
- ☐ d. View

The correct answer is:
DDL

Question 16

Correct Mark 1.00 out of 1.00

What is the subnet mask of host A?



- ☐ a. 255.255.255.0
- ☒ b. 255.255.255.128
- ☐ c. 255.255.255.224
- ☐ d. 255.255.255.240

The correct answer is:
255.255.255.128

Question 17

Incorrect Mark 0.00 out of 1.00

The behavior of a NFA can be stimulated by DFA

- ☒ a. Depends on DFA
- ☐ b. Always
- ☐ c. Never
- ☐ d. Sometimes

The correct answer is:
Always

Question 18

Incorrect Mark 0.00 out of 1.00

State management techniques are used because

- ☐ a. We need to exchange data between different servers
- ☐ b. The web is stateless
- ☒ c. We need to exchange data between different web pages
- ☐ d. All of the other options

The correct answer is:
All of the other options

Question 19

Incorrect Mark 0.00 out of 1.00

The term _____ is used to refer to a row

- ☐ a. Tuple
- ☐ b. Instance
- ☒ c. Attribute
- ☐ d. Field

The correct answer is:
Tuple

Question 20

Correct Mark 1.00 out of 1.00

Which data structure is used for implementing recursion?

- ☐ a. Linked List
- ☒ b. Stack
- ☐ c. Array
- ☐ d. Queue

The correct answer is:

Stack

Question 21

Incorrect Mark 0.00 out of 1.00

Suppose that a process is in “Blocked” state waiting for some I/O service. When the service is completed, it goes to the:

- ☐ a. Ready state
- ☒ b. Running state
- ☐ c. Suspended state
- ☐ d. Terminated state

The correct answer is: Ready state

Question 22

Correct Mark 1.00 out of 1.00

Suppose the Authority want to include a new instructor for the title Neuroscience what command should be inserted?

- ☐ a. Insert into instructor values(12111,Emma,NeuroScience,200000);
- ☒ b. Insert into instructor values(12111,Emma,Biology,200000);
Insert into course values(BIO-112,Introduction to Neuro Science,NeuroScience,2);
- ☐ c. Insert into course values(12111,Introduction,NeuroScience,2);
- ☐ d. Insert into course values(12111,Emma,NeuroScience,200000);

The correct answer is:

Insert into instructor values(12111,Emma,Biology,200000);

Insert into course values(BIO-112,Introduction to Neuro Science,NeuroScience,2);

Question 23

Incorrect Mark 0.00 out of 1.00

The number of processes completed per unit time is known as: _____

- ☐ a. Output
- ☒ b. Efficiency
- ☐ c. Capacity
- ☐ d. Throughput

The correct answer is: Throughput

Question 24

Correct Mark 1.00 out of 1.00

Given the following code within a method, which statement is true?

```
int a, b;
```

```
b=5;
```

Select the one correct answer.

- ☒ a. Local variable a is declared but not initialized
- ☐ b. Local variable b is declared but not initialized.
- ☐ c. Local variable b is not declared
- ☐ d. Local variable a is not declared

The correct answer is:

Local variable a is declared but not initialized

Question 25

Incorrect Mark 0.00 out of 1.00

In PHP, to execute a SELECT query you should use the following command:

- ☒ a. mysql_executeQuery()
- ☐ b. mysql_query()
- ☐ c. mysql_runQuery()
- ☐ d. mysql_select_db()

The correct answer is:

mysql_query()

Question 26

Incorrect Mark 0.00 out of 1.00

Select emp_name
from department
where dept_name like ' _____ Computer Science';
Which one of the following has to be added into the blank to select the dept_name
which has Computer Science as its ending string ?

- ☒ a. \$
- ☐ b. ||
- ☐ c. %
- ☐ d. _

The correct answer is:
%

Question 27

Incorrect Mark 0.00 out of 1.00

Linked lists are not suitable data structure for which one of the following problems?

- ☒ a. Polynomial manipulation
- ☐ b. Radix sort
- ☐ c. Insertion sort
- ☐ d. Binary search

The correct answer is:
Binary search

Question 28

Incorrect Mark 0.00 out of 1.00

What is the output of this program?

```
#include <iostream>
```

```
using namespace std;
```

```
int main()
```

```
{
```

```
    int arr[] = {1, 2, 3, 4};
```

```
    int *p = (arr + 2);
```

```
    cout << *p;
```

```
    return 0;
```

```
}
```

- ☒ a. 2
- ☐ b. 1
- ☐ c. 3
- ☐ d. 4

The correct answer is:

3

Question 29

Correct Mark 1.00 out of 1.00

The refinement from an initial entity set into successive levels of entity subgroupings represents a _____ design process in which distinctions are made explicit.

- ☒ a. Top-down
- ☐ b. Bottom-up
- ☐ c. Hierarchy
- ☐ d. Radical

The correct answer is:
Top-down

Question 30

Incorrect Mark 0.00 out of 1.00

Which of these is the worst-case time complexity of Quick Sort - and cannot be expressed in lower order terms?

- ☐ a. $O(n)$
- ☐ b. $O(n \log n)$
- ☒ c. $O(\log n)$
- ☐ d. $O(n^2)$

The correct answer is:
 $O(n^2)$

Question 31

Correct Mark 1.00 out of 1.00

What is the output of this program?

```
#include <iostream>

using namespace std;

void change (int&, int&, int&);

int main ()
{
    int x = 2, y = 4, z = 6;
    change (x, y, z);
    cout << x << y << z;
    return 0;
}

void change (int& a, int& b, int& c)
{
    a *= 2;
    b *= 2;
    c *= 2;
}
```

- ☐ a. 4 6 14
- ☒ b. 4 8 12
- ☐ c. 4 6 12
- ☐ d. None

The correct answer is:

4 8 12

Incorrect Mark 0.00 out of 1.00

- ☐ a. A server that listens on port 21 by default
- ☐ b. A server that sends data on port 22 by default
- ☒ c. A server that listens on port 22 by default
- ☐ d. A server that listens on port 80 by default

A server that listens on port 21 by default

Incorrect Mark 0.00 out of 1.00

$$1) \quad T(n) \equiv 4T(n/4) \pm n^2$$

- ☐ a. $\Theta(n)$
- ☐ b. $\Theta(n^2)$
- ☐ c. $\Theta(\log n)$
- ☒ d. $\Theta(n \log n)$

 $\Theta(n^2)$

Question 34

Incorrect Mark 0.00 out of 1.00

In the DHCP Lease Generation process, the sequence of packets exchanged between the DHCP Server and the DHCP Client are?

- ☒ a. DHCP REQUEST, DHCP OFFER, DHCP DISCOVER, DHCP ACK
- ☐ b. DHCP DISCOVER, DHCP ACK, DHCP REQUEST, DHCP OFFER
- ☐ c. DHCP REQUEST, DHCP ACK, DHCP DISCOVER, DHCP OFFER
- ☐ d. DHCP DISCOVER, DHCP OFFER, DHCP REQUEST, DHCP ACK

The correct answer is:

DHCP DISCOVER, DHCP OFFER, DHCP REQUEST, DHCP ACK

Question 35

Incorrect Mark 0.00 out of 1.00

Which of the following is true?

- ☐ a. All other options
- ☐ b. $(01)^*0=0(10)^*$
- ☒ c. $(0+1)^*01(0+1)^*+1^*0^*=(0+1)^*$
- ☐ d. $(0+1)^*0(0+1)^*1(0+1)=(0+1)^*01(0+1)^*$

The correct answer is:

All other options

Question 36

Incorrect Mark 0.00 out of 1.00

How many times is the symbol '#' printed by the call `foo(4)`?

```
void foo (int i) {  
    if (i > 1) {  
        foo (i/2);  
        foo (i/2);  
    }  
    cout << "##";  
}
```

- ☐ a. 3
- ☐ b. 4
- ☐ c. 8
- ☒ d. 7

The correct answer is:

8

Question 37

Correct Mark 1.00 out of 1.00

Database _____, which is the logical design of the database, and the database _____, which is a snapshot of the data in the database at a given instant in time.

- ☐ a. Relation, Domain
- ☐ b. Relation, Schema
- ☐ c. Instance, Schema
- ☒ d. Schema, Instance

The correct answer is:

Schema, Instance

Question 38

Correct Mark 1.00 out of 1.00

When the process issues an I/O request:

- ☐ a. It is placed in a waiting queue
- ☐ b. It is placed in the ready queue
- ☐ c. It is placed in a Job queue
- ☒ d. It is placed in an I/O queue

The correct answer is:

It is placed in an I/O queue

Question 39

Incorrect Mark 0.00 out of 1.00

Which of the following command is used to display the departments of the instructor relation?

- ☒ a. Select dept_name for instructor where Name=Jackson;
- ☐ b. Select * from instructor where Dept_name = Finance;
- ☐ c. Select * from instructor ;
- ☐ d. Select dept_name from instructor;

The correct answer is:

Select dept_name from instructor;

Question 40

Correct Mark 1.00 out of 1.00

How can we select the elements which have common Dept_name in both the relation ?

- ☐ a. Select Dept_name from instructor where Dept_name = NULL;
- ☐ b. Select Dept name from instructor ,Course;
- ☒ c. Select * from instructor i , course c where i.Dept_name=c.Dept_name;
- ☐ d. Select * from instructor i , course c ;

The correct answer is:

Select * from instructor i , course c where i.Dept_name=c.Dept_name;

Question 41

Partially correct Mark 0.50 out of 1.00

Which declarations of the `main()` method are valid in order to start the execution of an application?

Select the two correct answers

- ☐ a. `public static main(String[] argsv)`
- ☐ b. `public void static main(String args[])`
- ☐ c. `fnal public static void main(String [] array)`
- ☒ d. `public static void main(String args[])`
- ☒ e. `public void main(String args[])`

The correct answers are:

`fnal public static void main(String [] array),`

`public static void main(String args[])`

Question 42

Incorrect Mark 0.00 out of 1.00

Fred created a new automaton model which is a push down automaton but with two stacks and the added ability of having commands which do not read input tape but which can pop from one stack and push into the other. This new automaton can recognize (choose strongest result)

- ☐ a. Regular Language
- ☐ b. Languages recognized by Turing Machine
- ☒ c. Context Sensitive Language
- ☐ d. Context Free Language

The correct answer is:
Languages recognized by Turing Machine

Question 43

Incorrect Mark 0.00 out of 1.00

If the current folder of your website does not contain a Web.config file then the webpages of this folder will follow which configuration file?

- ☐ a. The first web.config met in the hierarchy upwards
- ☒ b. The web.config of the website's root directory
- ☐ c. The machine.config
- ☐ d. No configuration is applied to those webpages

The correct answer is:
The first web.config met in the hierarchy upwards

Question 44

Correct Mark 1.00 out of 1.00

The vendor ID part of the MAC address:

- ☐ a. Consists of the lower 24 bits and is assigned by the company manufacturing the network card without referring to any external organization
- ☐ b. Consists of the upper 12 bits and is uniquely assigned by a central organization for every company planning to manufacture network cards
- ☐ c. Consists of the lower 12 bits and is assigned by the company manufacturing the network card without referring to any external organization
- ☒ d. Consists of the upper 24 bits and is uniquely assigned by a central organization for every company planning to manufacture network cards

The correct answer is:

Consists of the upper 24 bits and is uniquely assigned by a central organization for every company planning to manufacture network cards

Question 45

Correct Mark 1.00 out of 1.00

iCloud Service is which type of cloud computing distribution model?

- ☒ a. Software as a Service
- ☐ b. Infrastructure as a Service
- ☐ c. Cloud as a Service
- ☐ d. Platform as a Service

The correct answer is:
Software as a Service

Question 46

Incorrect Mark 0.00 out of 1.00

The systems which allows only one process execution at a time, are called:

- ☐ a. Uniprocessing systems
- ☐ b. Uniprogramming systems
- ☐ c. None
- ☒ d. Unitasking systems

The correct answer is:
Uniprogramming systems

Question 47

Correct Mark 1.00 out of 1.00

How do you tell the container to assign all the values from a request to corresponding JavaBean attributes?

- ☐ a. `<jsp:useBean name="myBean" setProperty="*" />`
- ☒ b. `<jsp:setProperty name="myBean" property="*" />`
- ☐ c. `<jsp:getProperty name="myBean" property="*" />`
- ☐ d. `<jsp:property name="myBean" property="*" />`

The correct answer is:

`<jsp:setProperty name="myBean" property="*" />`

Question 48

Incorrect Mark 0.00 out of 1.00

The term attribute refers to a _____ of a table.

- ☐ a. Tuple
- ☐ b. Key
- ☐ c. Column
- ☒ d. Record

The correct answer is:

Column

Question 49

Incorrect Mark 0.00 out of 1.00

A situation where several processes access and manipulate the same data concurrently and the outcome of the execution depends on the particular order in which access takes place is called:

- ☒ a. Data consistency
- ☐ b. Race condition
- ☐ c. Starving
- ☐ d. Aging

The correct answer is:

Race condition

Question 50

Incorrect Mark 0.00 out of 1.00

In ASP.net, you need to manage the state of the controls on a webpage when submitted to itself. The best state management technique would be:

- ☒ a. Hidden Controls
- ☐ b. Cookies
- ☐ c. ViewState
- ☐ d. QueryString

The correct answer is:
ViewState

Question 51

Correct Mark 1.00 out of 1.00

When an ASP.NET file is placed on an IIS server and viewed through a browser, the resulting HTML page contains?

- ☐ a. a mix of ASP.NET and HTML code
- ☐ b. all ASP.NET code
- ☐ c. as much ASP.NET code as is in the ASP.NET file
- ☒ d. all HTML code

The correct answer is:
all HTML code

Question 52

Incorrect Mark 0.00 out of 1.00

Time quantum is defined in

- ☐ a. round robin scheduling algorithm
- ☐ b. multilevel queue scheduling algorithm
- ☐ c. shortest job scheduling algorithm
- ☒ d. priority scheduling algorithm

The correct answer is:

round robin scheduling algorithm

Question 53

Incorrect Mark 0.00 out of 1.00

What is the output of this program?

```
#include <iostream>
```

```
using namespace std;
```

```
int main()
```

```
{
```

```
    int x = 5, y = 5, z = 0;
```

```
    x = ++x; y = --y;
```

```
    z = x++ + y--;
```

```
    cout << z << x << y;
```

```
    return 0;
```

```
}
```

- ☒ a. 10 6 3
- ☐ b. 10 7 3
- ☐ c. 11 7 3
- ☐ d. None

The correct answer is:

10 7 3

Question 54

Incorrect Mark 0.00 out of 1.00

How many strings of length less than 4 contains the language described by the regular expression $(x+y)^*y(a+ab)^*$?

- ☐ a. 7
- ☒ b. 10
- ☐ c. 12
- ☐ d. 11

The correct answer is:
11

Question 55

Correct Mark 1.00 out of 1.00

A trusted third party who provides a way for one party to learn the public key of another party. Web browsers have a list of these trusted third parties, to support communication using HTTPS.

- ☒ a. Certificate Authority
- ☐ b. Kerberos
- ☐ c. Public keys certificates
- ☐ d. CA

The correct answer is:
Certificate Authority

Question 56

Incorrect Mark 0.00 out of 1.00

TLS uses the following cryptographic techniques: (more than one response could be TRUE)

- ☒ a. Asymmetric-key cryptography.
- ☒ b. Symmetric-key cryptography.
- ☐ c. Nonces.
- ☐ d. PKI certificates
- ☒ e. Cryptographic hash functions

The correct answers are:

Asymmetric-key cryptography.,

Symmetric-key cryptography.,

Cryptographic hash functions,

PKI certificates,

Nonces.

Question 57

Incorrect Mark 0.00 out of 1.00

A _____ is created by using a secure hash function to generate a hash value for a message and then encrypting the hash code with a private key.

- ☒ a. Secret key
- ☐ b. One way hash function
- ☐ c. digital signature
- ☐ d. Key stream

The correct answer is:
digital signature

Question 58

Correct Mark 1.00 out of 1.00

Which of the following statements is true?

- ☒ a. JSP is translated into Java servlet by a web server when a JSP is called
- ☐ b. JSP is translated into HTML by a web server when a JSP is called
- ☐ c. None
- ☐ d. JSP is translated into XML by a web server when a JSP is called

The correct answer is:
JSP is translated into Java servlet by a web server when a JSP is called

Question 59

Incorrect Mark 0.00 out of 1.00

Suppose the partition function (of quicksort) is called on this array:

4765180

Which of the arrays below could result from the call, i.e. which of them satisfies the postconditions of partition? (Assume partition chooses the first element as the pivot.)

- ☒ a. 4 8 7 6 5 1 0
- ☐ b. 4 0 1 5 6 8 7
- ☐ c. 1 0 4 5 6 8 7
- ☐ d. 1 0 5 4 6 8 7

The correct answer is:
1045687

Question 60

Partially correct Mark 0.67 out of 1.00

Which of these field declarations are legal within the body of an interface?

Select the three correct answers

- ☒ a. private final static int answer = 42;
- ☒ b. public static int answer = 42;
- ☐ c. int answer;
- ☒ d. public int answer = 42;
- ☐ e. final static int answer = 42;

The correct answers are:
public static int answer = 42;,
final static int answer = 42;,
public int answer = 42;

Question 61

Correct Mark 1.00 out of 1.00

In PHP, which of the following functions is used to insert content of one php file into another php file before the server executes it?

- ☒ a. `<?php include("filename");?>`
- ☐ b. `<?php include="filename";?>`
- ☐ c. `<#include("filename") ?>`
- ☐ d. `<?include="filename" ?>`

The correct answer is:

`<?php include("filename");?>`

Question 62

Incorrect Mark 0.00 out of 1.00

For select operation the _____ appear in the subscript and the _____ argument appears in the parentheses after the sigma.

- ☒ a. Relation, Operation
- ☐ b. Operation, Predicates
- ☐ c. Predicates, relation
- ☐ d. Relation, Predicates

The correct answer is:

Predicates, relation

Question 63

Incorrect Mark 0.00 out of 1.00

What is private cloud?

- ☐ a. A standard cloud service offered via the Internet
- ☐ b. A cloud architecture maintained within an enterprise data center
- ☒ c. A cloud that its access is limited to a specific community of cloud consumers
- ☐ d. Is a publicly accessible cloud environment owned by a third-party cloud provider

The correct answer is:

A cloud architecture maintained within an enterprise data center

Question 64

Incorrect Mark 0.00 out of 1.00

What will be printed when the following program is run?

```
public class ParameterPass {  
    public static void main(String[] args) {  
        int i = 0;  
        addTwo(i++);  
        System.out.println(i);  
    }  
  
    static void addTwo(int i) {  
        i += 2;  
    }  
}
```

- ☐ a. 2
☒ b. 3
☐ c. 1
☐ d. 0

The correct answer is:

1

Question 65

Incorrect Mark 0.00 out of 1.00

A set of processes is deadlock if

- ☒ a. Each process is terminated
- ☐ b. Each process is blocked and will remain so forever
- ☐ c. All processes are trying to kill each other
- ☐ d. None

The correct answer is:

Each process is blocked and will remain so forever

Question 66

Correct Mark 1.00 out of 1.00

Which of the following is true about session in ASP.NET?

- ☐ a. Programmers has to take care of delete sessions after configurable timeout interval
- ☐ b. None
- ☐ c. The default time interval is 5 minutes
- ☒ d. ASP.NET automatically delete sessions after configurable timeout interval

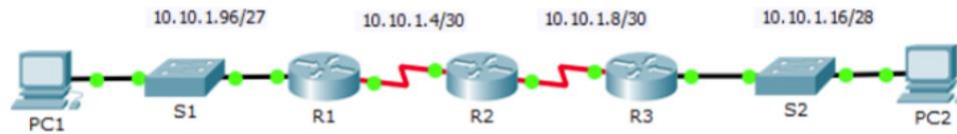
The correct answer is:

ASP.NET automatically delete sessions after configurable timeout interval

Question 67

Incorrect Mark 0.00 out of 1.00

Referring to the following exhibit, an IP packet is sent from PC1 to PC2 with a default TTL value of 64. What will be the TTL value when the packet is received at PC2:



- ☒ a. 64
- ☐ b. 61
- ☐ c. 62
- ☐ d. 59

The correct answer is:
61

Question 68

Incorrect Mark 0.00 out of 1.00

The _____ clause allows us to select only those rows in the result relation of the _____ clause that satisfy a specified predicate.

- ☐ a. Where, from
- ☐ b. From, select
- ☐ c. From, where
- ☒ d. Select, from

The correct answer is:
Where, from

Question 69

Incorrect Mark 0.00 out of 1.00

The attribute ***name*** could be structured as an attribute consisting of first name, middle initial, and last name. This type of attribute is called

- ☐ a. Composite attribute
- ☐ b. Derived attribute
- ☐ c. Simple attribute
- ☒ d. Multivalued attribute

The correct answer is:
Composite attribute

Question 70

Incorrect Mark 0.00 out of 1.00

The number of swapping needed to sort numbers 8, 22, 7, 9, 31, 19, 5, 13 in ascending order using bubble sort is?

- ☐ a. 13
- ☐ b. 14
- ☐ c. 11
- ☒ d. 12

The correct answer is:
14

Question 71

Incorrect Mark 0.00 out of 1.00

For like predicate which of the following is true.

- i) % matches zero or more characters.
- ii) _ matches exactly one character.

- ☐ a. None
- ☐ b. Both
- ☒ c. ii-only
- ☐ d. i-only

The correct answer is:
i-only

Question 72

Correct Mark 1.00 out of 1.00

If a variable is declared in the initialization expression of a for statement, then:

- ☐ a. It is automatically reinitialized to zero once the loop is finished.
- ☐ b. It cannot be used in any structures that are nested in that for structure
- ☒ c. The scope of the variable is restricted to that for loop
- ☐ d. It retains its final value after the loop is finished.

The correct answer is:
The scope of the variable is restricted to that for loop

Question 73

Incorrect Mark 0.00 out of 1.00

What will the following program print when run?

```
// Filename: MyClass.java public class MyClass {  
public static void main(String[] args) { B b = new B("Test");  
}  
}
```

```
class A {  
A() { this("1", "2"); }
```

```
A(String s, String t) { this(s + t); }
```

```
A(String s) { System.out.println(s); }  
}
```

```
class B extends A {  
B(String s) { System.out.println(s); }
```

```
B(String s, String t) { this(t + s + "3"); }
```

```
B() { super("4"); };  
}
```

- ☐ a. It will print 12followed by Test
- ☒ b. It will print 4followed by Test
- ☐ c. It will print Testfollowed by Test
- ☐ d. It will just print Test

The correct answer is:

It will print 12followed by Test

Question 74

Incorrect Mark 0.00 out of 1.00

Select name, course_id

from instructor, teaches

where instructor_ID= teaches_ID;

This Query can be replaced by which one of the following ?

- ☐ a. Select name, course_id from instructor natural join teaches;
- ☒ b. Select name, course_id from teaches, instructor where instructor_id=course_id;
- ☐ c. Select name ,course_id from instructor;
- ☐ d. Select course_id from instructor join teaches;

The correct answer is:

Select name, course_id from instructor natural join teaches;

Question 75

Incorrect Mark 0.00 out of 1.00

A logical address is an actual location in main memory

- ☐ a. False
- ☒ b. True

The correct answer is:

False

Question 76

Incorrect Mark 0.00 out of 1.00

How do we add a new connection string in the web.config file?

- ☐ a. By adding a <new name="..." connectionString="..." providerName="..."> tag in the authentication section
- ☐ b. By adding a <add name="..." connectionString="..." providerName="..."> tag in the authentication section
- ☒ c. By adding a <new name="..." connectionString="..." providerName="..."> tag in the connectionStrings section
- ☐ d. By adding a <add name="..." connectionString="..." providerName="..."> tag in the connectionStrings section

The correct answer is:

By adding a <add name="..." connectionString="..." providerName="..."> tag in the connectionStrings section

Question 77

Correct Mark 1.00 out of 1.00

Select ID, name, dept_name, salary * 1.1
where instructor;

The query given below will not give an error. Which one of the following has to be replaced to get the desired output?

- ☒ a. Where
- ☐ b. ID
- ☐ c. Salary*1.1
- ☐ d. Instructor

The correct answer is:

Where

Question 78

Incorrect Mark 0.00 out of 1.00

In a web application environment, which among the following objects is the best choice to share information between online users?

- ☐ a. request
- ☐ b. application
- ☒ c. session
- ☐ d. page

The correct answer is:
application

Question 79

Correct Mark 1.00 out of 1.00

What is the label of the first line that will cause compilation to fail in the following program?

```
// Filename: MyClass.java
class MyClass {
    public static void main(String[] args) {
        MyClass
        a;
        MySubclass b;

        a = new MyClass(); // (1)
        b = new MySubclass(); // (2)
        a = b; // (3)
        b = a; // (4)
        a = new MySubclass(); // (5)
        b = new MyClass(); // (6)
    }
}
```

class MySubclass extends MyClass {}

- ☐ a. (1)
- ☐ b. (3)
- ☒ c. (4)
- ☐ d. (2)

The correct answer is:
(4)

Question 80

Correct Mark 1.00 out of 1.00

What is the ready state of a process?

- ☐ a. None
- ☒ b. When process is scheduled to run after some execution
- ☐ c. When a process is using the CPU
- ☐ d. When process is unable to run until some task has been completed

The correct answer is:

When process is scheduled to run after some execution

Question 81

Incorrect Mark 0.00 out of 1.00

The prefix form of an infix expression $p + q - r * t$ is:

- ☒ a. $_{+pqr}t$
- ☐ b. $_{+pq}n$
- ☐ c. $+pq- *rt$
- ☐ d. $_{+*pqr}t$

The correct answer is:

$_{+pq}n$

Question 82

Correct Mark 1.00 out of 1.00

When an array is to be sorted, it may happen that some data values start out being in the same position where they should end up. For example, in the array which is originally

40-1330

the 33 is right where it will be in the final sorted output:

-103340

But as a particular sorting algorithm operates, it might (depending on the algorithm) move such an element out of the position where it belongs (of course, it will eventually get moved back).

Which of the following statements are true?

- I. Mergesort never (even temporarily) moves such an element.
- II. Quicksort never (even temporarily) moves such an element.
- III. Selection sort never (even temporarily) moves such an element.

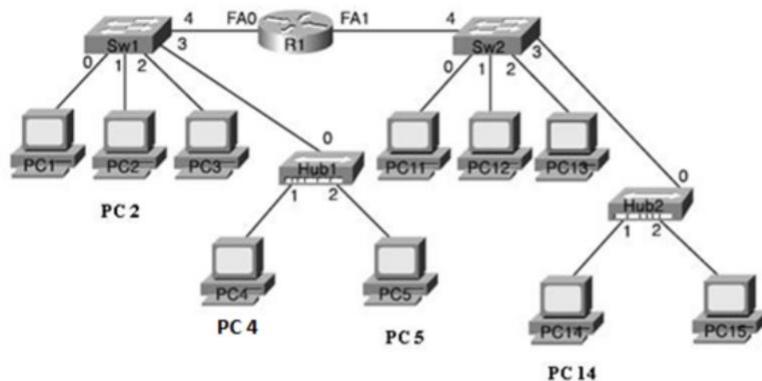
- ☐ a. II only
- ☒ b. II and III
- ☐ c. I only
- ☐ d. I and III

The correct answer is:
II and III

Question 83

Correct Mark 1.00 out of 1.00

How many collision domains exist in this topology?



- ☒ a. 10
- ☐ b. 12
- ☐ c. 4
- ☐ d. 2

The correct answer is:
10

Question 84

Correct Mark 1.00 out of 1.00

Which is the legal range of values for a short?

Select the one correct answer.

- ☐ a. -2^7 to 2^7-1
- ☐ b. 0 to $2^{16}-1$
- ☒ c. -2^{15} to $2^{15}-1$
- ☐ d. -2^8 to 2^8

The correct answer is:
 -2^{15} to $2^{15}-1$

Question 85

Correct Mark 1.00 out of 1.00

What is the output of this program?

```
#include<iostream>
```

```
using namespace std;
```

```
int calculate (int a, int b);
```

```
float calculate (float a, float b);
```

```
int main ()
```

```
{
```

```
    int x = 5, y = 2;
```

```
    float n = 5.0, m = 2.0;
```

```
    cout << calculate (x, y);
```

```
    cout << calculate (n, m);
```

```
    return 0;
```

```
}
```

```
int calculate (int a, int b)
```

```
{
```

```
    return (a + b);
```

```
}
```

```
float calculate (float a, float b)
```

```
{
```

```
    return (a / b);
```

```
}
```

- ☐ a. 7 2.0
- ☐ b. 10 3.4
- ☐ c. None
- ☒ d. 7 2.5

The correct answer is:

7 2.5

Question 86

Incorrect Mark 0.00 out of 1.00

Which cloud deployment model is managed by a cloud provider, has an infrastructure that is offsite, and is accessible to the general public?

- ☐ a. Private cloud
- ☒ b. Hybrid cloud
- ☐ c. Community cloud
- ☐ d. Public cloud

The correct answer is:
Public cloud

Question 87

Correct Mark 1.00 out of 1.00

What is the output of this program?

```
#include <iostream>
```

```
using namespace std;
```

```
int main()
```

```
{
```

```
    int arr[] = {4, 5, 6, 7};
```

```
    int *p = (arr + 1);
```

```
    cout << arr;
```

```
    return 0;
```

```
}
```

- ☐ a. 4
- ☐ b. 7
- ☒ c. address of arr
- ☐ d. 5

The correct answer is:
address of arr

Question 88

Incorrect Mark 0.00 out of 1.00

Memory management technique in which system stores and retrieves data from secondary storage for use in main memory is called

- ☐ a. paging
- ☐ b. none
- ☒ c. mapping
- ☐ d. fragmentation

The correct answer is:
paging

Question 89

Incorrect Mark 0.00 out of 1.00

The number of processes completed per unit time is known as: _____

- ☒ a. Efficiency
- ☐ b. Throughput
- ☐ c. Capacity
- ☐ d. Output

The correct answer is: Throughput

Question 90

Incorrect Mark 0.00 out of 1.00

The initial configuration of the queue is a,b,c,d (a is the front end). To get the configuration d,c,b,a one needs a minimum of ?

- ☐ a. 3 deletions and 3 additions
- ☒ b. 3 deletions and 4 additions
- ☐ c. 3 additions and 2 deletions
- ☐ d. 2 deletions and 3 additions

The correct answer is:
3 deletions and 3 additions

Question 91

Incorrect Mark 0.00 out of 1.00

Department (dept_name, building, budget) and Employee (employee_id, name, dept_name, salary)

Here the dept_name attribute appears in both the relations. Here using common attributes in relation schema is one way of relating _____ relations.

- ☒ a. Attributes of common
- ☐ b. Tuple of distinct
- ☐ c. Attributes of distinct
- ☐ d. Tuple of common

The correct answer is:
Tuple of distinct

Question 92

Correct Mark 1.00 out of 1.00

Consider the following grammar.

$S \rightarrow AB$

$A \rightarrow a$

$A \rightarrow BaB$

$B \rightarrow bbA$

Which of the following is false?

- ☐ a. The length of every string produced by the grammar is even
- ☐ b. No string produced by the grammar has an odd number of consecutive b s
- ☐ c. No string produced by the grammar has three consecutive a s
- ☒ d. No string produced by the grammar has four consecutive b s

The correct answer is:
No string produced by the grammar has four consecutive b s

Question 93

Incorrect Mark 0.00 out of 1.00

which of the following is not the state of a process?

- ☐ a. New
- ☐ b. Waiting
- ☒ c. Terminated
- ☐ d. Old

The correct answer is:

Waiting

Question 94

Incorrect Mark 0.00 out of 1.00

Using Apache Tomcat as a web server and servlet container, If your servlet class file does not have a package statement, the servlet .class file must be placed in _____ by default.

- ☐ a. TomcatRootDir\webapps\WEB-INF\classes
- ☐ b. The same directory with the .java file.
- ☒ c. TomcatRootDir\webapps\examples\WEB-INF\classes
- ☐ d. TomcatRootDir\webapps\examples\WEB-INF

The correct answer is:

TomcatRootDir\webapps\WEB-INF\classes

Question 95

Correct Mark 1.00 out of 1.00

Concurrent access to shared data may result in:

- ☐ a. data consistency
- ☒ b. data inconsistency
- ☐ c. None
- ☐ d. data insecurity

The correct answer is:
data inconsistency

Question 96

Incorrect Mark 0.00 out of 1.00

Finite automata are used for pattern matching in text editors for

- ☐ a. None
- ☐ b. Comiler lexical analysis
- ☒ c. Compiler lexical analysis and Programming in localized application
- ☐ d. Programming in localized applications

The correct answer is:
Comiler lexical analysis

Question 97

Incorrect Mark 0.00 out of 1.00

Suppose v is the value of a node N in a binary search tree. Assume that there is a value higher than v in the tree. Among all the values in the tree, where is that next larger value located?

- ☒ a. in the right child of N (always)
- ☐ b. somewhere in the left subtree of N
- ☐ c. always somewhere in the right subtree of N , although not necessarily in the right child itself
- ☐ d. sometimes in the right subtree of N , sometimes in the parent of N

The correct answer is:
sometimes in the right subtree of N , sometimes in the parent of N

Question 98

Incorrect Mark 0.00 out of 1.00

Which of the following is not included in `<cmath>` ?

- ☐ a. `ln`
- ☒ b. `foor`
- ☐ c. `pow`
- ☐ d. `log`

The correct answer is:
`ln`

Question 99

Correct Mark 1.00 out of 1.00

Which operator works only with integer variables?

- ☐ a. None
- ☒ b. both increment and decrement
- ☐ c. increment
- ☐ d. decrement

The correct answer is:
both increment and decrement

Question 100

Incorrect Mark 0.00 out of 1.00

Which of the following refers to a cloud computing model in which you acquire all your technology needs—storage hardware and data, network equipment, application software, operating system software—in the cloud?

- ☐ a. Infrastructure-as-a-service
- ☒ b. multi-tier infrastructure
- ☐ c. Sustainable interoperability
- ☐ d. Distributed infrastructure

The correct answer is:
Infrastructure-as-a-service

◀ Comprehensive Exam - Attempt II

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