| Exam Name | : AEGCL_Junior Manager_Information_Technology |
| :--- | :--- |
| Total Questions | $: 100$ |
| Description | $:$ |
|  | Important Examination Instructions |

1. Each question will carry 1 (One) Mark for correct answer.
2. There will be a negative marking of 0.25 (one-fourth) marks for wrong answer
3. Do not use the alt-tab, mouse or any other device to shift from examination screen to any other screen or do not try to open any other application while attempting the examination. Doing so may result in discontinuation of examination and your examination will be considered as null and void.Attempting to close the browser repeatedly will lock the exam.

## How to use the system:

1. How to start the test: You can start the test by clicking the Declaration Check box and then 'I am ready to begin button ' .
2. How to change the question: For the move to the next question you have to click on the 'Save And Next' button the same as for move to the back, click on the 'Previous' button.
3. How to answer a question: You can select any answer by clicking on the button displayed just before the answers. You have to finally click the button - Save and Next - to save your answer and move to the next question. In Exam Sections, the Red Circle corresponding to this question turns Green. You can go to any section / any question number by clicking the relevant control.
4. How to skip the question: You can click the " Next Question" control to move on the next question
5. How to mark a question for review: If you want to review any question later, you have to click the "Review" checkbox. This answer will be marked for review.
6. How to Submit your test: By clicking On last question and Submit Test button one popup window display asking for "Are you sure, you want to Submit your test ?" You have to click on "YES" to submit your test.

- Circle symbols displayed at the bottom of the screen:
-Red Color: Current Question.
-Green Color: Attempted Question.
-White Color: Unattempted Question.
-Blue Color: Attempted and Reviewed Question.
-Violet Color: Unattempted and Reviewed Question

Q. 2

What will be the output of the following program?
\#include<iostream.h> void main()
\{
float $x=5, y=2$;
int result;
result=x \% y;
cout<<result;
\}
(A) 1
(B) 1.0
(C) Error message
(D) 2.5

| Marks |  | Question ID: <br> 1607 |
| :---: | :---: | :---: |
| No | Options Details | Correct Option |
| 1 | A |  |
| 2 | B |  |
| 3 | C | $\checkmark$ |
| 4 | D |  |

Q. 3
int $\mathrm{a}=1, \mathrm{~b}=2$;
$\mathrm{a}=\mathrm{chg}(\mathrm{b})$;
cout $\ll$ a $\ll$ b;
If the function chg is coded as
int chg(int x )
\{
$\mathrm{x}=10$;
return ();
\}
then
(A) it prints 112
(B) it results in compile-time error
(C) it prints 111
(D) it results in run time error

| Marks 1 | Question ID: <br> 1608 |
| :--- | :--- | :--- |


| No | Options Details | Correct Option |
| :---: | :---: | :---: |
| 1 | A | $\checkmark$ |
| 2 | B |  |
| 3 | C |  |
| 4 | D |  |

Q. 4

Which one of the following are essential features of an object-oriented programming language?
(i) Abstraction and encapsulation
(ii) Strictly-typedness
(iii) Type-safe property coupled with sub-type rule
(iv) Polymorphism in the presence of inheritance
(A) (i) and (ii) only
(B) (i) and (iv) only
(C) (i), (ii) and (iv) only
(D) (i), (iii) and (iv) only

| Marks 1 | Question ID: <br> 1609 |
| :--- | :--- | :--- |


| No | Options Details | Correct Option |
| :---: | :---: | :---: |
| 1 | A |  |
| 2 | B | $\checkmark$ |
| 3 | C | $\checkmark$ |
| 4 | D |  |

Q. 5

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

```
#include <iostream>
using namespace std;
int main()
{
            char arr[20];
        int i;
    for(i= 0; i < 10; i++)
            *(arr +i) = 65 + i;
    *(arr + i) = '\0';
    cout << arr;
    return(0);
}
```

(A) ABCDEFGHIJ
(B) AAAAAAAAAA
(C) JJJJJJJJ
(D) AAAAAAJJJJ

| Marks 1 | Question ID: <br> 1610 |
| :---: | :--- |


| No | Options Details | Correct Option |
| :---: | :---: | :---: |
| 1 | A | $\checkmark$ |
| 2 | B |  |
| 3 | C |  |
| 4 | D |  |

Q. $6 \quad$ Reusability is a desirable feature of a language as it


| Q. 7 | Department (dept name, building, budget) and Employee (employee_id, name, dept name, salary) <br> Here the dept_name attribute appears in both the relations. Here using common attributes in relation <br> schema is one way of relating <br> relations. |  |
| :--- | :--- | :--- |
| Marks | 1 | Question ID: <br> 1612 |
| No |  | Correct Option |
| 1 | Attributes of common |  |
| 2 | Tuple of common |  |
| 3 | Tuple of distinct |  |
| 4 | Attributes of distinct |  |


| Q. 8 | Given the basic ER and relational models, which of the following is INCORRECT? |  |
| :---: | :---: | :---: |
| Marks | 1 | $\begin{aligned} & \text { Question ID: } \\ & 1613 \end{aligned}$ |


| No | Options Details | Correct Option |
| :---: | :--- | :---: |
| 1 | An attribute of an entity can have more than <br> one value |  |
| 2 | An attribute of an entity can be composite |  |
| 3 | In a row of a relational table, an attribute can <br> have more than one value | $\checkmark$ |
| 4 | In a row of a relational table, an attribute can <br> have exactly one value or a NULL value |  |


| Q. 9 |  | Consider the FDs given in above question. The relation R is |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Marks |  | 1 |  | Question ID: $1614$ |
| No |  |  | Options Details | Correct Option |
| 1 | in 3 | but not in BCNF |  |  |
| 2 | in 2 | but not in 3NF |  |  |
| 3 | in 1 | but not in 2NF |  | $\checkmark$ |
| 4 | in B |  |  |  |

Q. 10

Let $\mathrm{x}, \mathrm{y}, \mathrm{z}, \mathrm{a}, \mathrm{b}, \mathrm{c}$ be the attributes of an entity set E . If $\{\mathrm{x}\},\{\mathrm{x}, \mathrm{y}\},\{\mathrm{a}, \mathrm{b}\},\{\mathrm{a}, \mathrm{b}, \mathrm{c}\},\{\mathrm{x}, \mathrm{y}, \mathrm{z}\}$ are superkeys then which of the following are the candidate keys?
(A) $\{\mathrm{x}, \mathrm{y}\}$ and $\{\mathrm{a}, \mathrm{b}\}$
(B) $\{x\}$ and $\{a, b\}$
(C) $\{x, y, z\}$ and $\{a, b, c\}$
(D) $\{\mathrm{z}\}$ and $\{\mathrm{c}\}$

| Marks 1 | Question ID: <br> 1615 |
| :---: | :---: |


| No | Options Details | Correct Option |
| :---: | :---: | :---: |
| 1 | A |  |
| 2 | B | $\checkmark$ |
| 3 | C |  |
| 4 | D |  |

Q. 11 If the state of the database no longer reflects a real state of the world that the database is supposed to capture, then such a state is called

| Marks 1 | Question ID: <br> 1616 |
| :--- | :--- | :--- |


| No | Options Details | Correct Option |
| :---: | :--- | :---: |
| 1 | Consistent state |  |
| 2 | Parallel state |  |
| 3 | Durable state |  |
| 4 | Inconsistent state | $\checkmark$ |

Q. 12

Consider the following ORACLE relations :
$\mathrm{R}(\mathrm{A}, \mathrm{B}, \mathrm{C})=\{\langle 1,2,3\rangle,\langle 1,2,0\rangle,\langle 1,3,1\rangle,\langle 6,2,3\rangle,\langle 1,4,2\rangle,\langle 3,1,4\rangle\}$
$\mathrm{S}(\mathrm{B}, \mathrm{C}, \mathrm{D})=\{\langle 2,3,7\rangle,\langle 1,4,5\rangle,\langle 1,2,3\rangle,\langle 2,3,4\rangle,\langle 3,1,4\rangle\}$.
Consider the following two $S Q L$ queries $S Q_{1}$ and $S Q_{2}$ :
$\mathrm{SQ}_{1}$ : SELECT R-B, AVG (S-B)
FROM R, S
WHERE R.A = S.C AND S.D < 7 GROUP BY R.B;
$\mathrm{SQ}_{2}$ : SELECT DISTINCT S-B, MIN (S-C)
FROM S
GROUP BY S-B
HAVING COUNT (DISTINCT SD) $>1$;
If $M$ is the number of tuples returned by $S Q_{1}$ and $N$ is the number of tuples returned by $S Q_{2}$ then
(A) $\mathrm{M}=2, \mathrm{~N}=2$
(B) $\mathrm{M}=5, \mathrm{~N}=3$
(C) $\mathrm{M}=4, \mathrm{~N}=2$
(D) $\mathrm{M}=3, \mathrm{~N}=3$

| Marks | 1 | Question ID: <br> 1617 |
| :---: | :---: | :--- |


| No | Options Details | Correct Option |
| :---: | :---: | :---: |
| 1 | A |  |
| 2 | B |  |
| 3 | C |  |
| 4 | D | $\checkmark$ |


| Q. 13 | Which of the following requires a device driver? |  |
| :--- | :--- | :--- |
| Marks | 1 | Question ID: <br> 1618 |


| No | Options Details | Correct Option |
| :---: | :--- | :---: |
| 1 | Register |  |
| 2 | Cache |  |
| 3 | Main memory |  |
| 4 | Disk | $\checkmark$ |

Q. 14

A process executes the code
fork();
fork();
fork();
The total number of child processes created is
(A) 3
(B) 4
(C) 7
(D) 8

| Marks | 1 | Question ID: <br> 1619 |
| :--- | :--- | :--- |


| No | Options Details | Correct Option |
| :---: | :---: | :---: |
| 1 | A |  |
| 2 | B |  |
| 3 | C | $\checkmark$ |
| 4 | D |  |



A system uses FIFO policy for page replacement. It has 4 page frames with no pages loaded to begin with. The system first accesses 100 distinct pages in some order and then accesses the same 100 pages but now in the reverse order. How many page faults will occur?
(A) 196
(B) 192
(C) 197
(D) 195

| Marks |  | Question ID: <br> 1621 |
| :---: | :---: | :---: |
| No |  | Options Details |
| 1 | A | Correct Option |
| 2 | B | $\checkmark$ |
| 3 | C |  |
| 4 | D |  |

Q. 17

A file system with 300 GByte uses a file descriptor with 8 direct block address.
1 indirect block address and 1 doubly indirect block address. The size of each disk block is 128 Bytes and the size of each disk block address is 8 Bytes. The maximum possible file size in this file system is
(A) 3 Kbytes
(B) 35 Kbytes
(C) 280 Bytes
(D) Dependent on the size of the disk

| Marks 1 | Question ID: <br> 1622 |
| :--- | :--- | :--- |


| No | Options Details | Correct Option |
| :---: | :---: | :---: |
| 1 | A |  |
| 2 | B | $\checkmark$ |
| 3 | C |  |
| 4 | D |  |

Q. 18 Which of the following statements about synchronous and asynchronous I/O is NOT true?

| Marks 1 | Question ID: <br> 1623 |
| :---: | :--- |


| No | Options Details | Correct Option |
| :---: | :--- | :---: |
| 1 | An ISR is invoked on completion of I/O in <br> synchronous I/O but not in asynchronous I/O |  |
| 2 | In both synchronous and asynchronous I/O, <br> an ISR (Interrupt Service Routine) is invoked <br> after completion of the I/O | $\checkmark$ |
| 3 | A process making a synchronous I/O call <br> waits until I/O is complete, but a process <br> making an asynchronous I/O call does not <br> wait for completion of the I/O |  |
| 4 | In the case of synchronous I/O, the process <br> waiting for the completion of I/O is woken up <br> by the ISR that is invoked after the <br> completion of $/ / O$ |  |

Q. 19 Which of the following sorting algorithms has the highest best case time complexity using array data structure?

| Marks 1 |  | Question ID: <br> 1624 |  |
| :---: | :--- | :--- | :--- |
| No |  | Options Details | Correct Option |
| 1 | Heap sort |  |  |
| 2 | Insertion sort |  |  |
| 3 | Selection sort |  |  |
| 4 | Bubble sort |  |  |

Q. 20

Consider the label sequences obtained by the following pairs of traversals on a labeled binary tree. Which of these pairs identify a tree uniquely
(i) preorder and postorder
(ii) inorder and postorder
(iii) preorder and inorder
(iv) level order and postorder
(A) (i) only
(B) (ii), (iii)
(C) (iii) only
(D) (iv) only
Marks

| Question ID: |
| :--- |
| 1625 |


| No | Options Details | Correct Option |
| :---: | :---: | :---: |
| 1 | A |  |
| 2 | B | $\checkmark$ |
| 3 | C |  |
| 4 | D |  |

Q. 21

Postorder traversal of a given binary search tree, T produces the following sequence of keys
$10,9,23,22,27,25,15,50,95,60,40,29$

Which one of the following sequences of keys can be the result of an in-order traversal of the tree T?
(A) $9,10,15,22,23,25,27,29,40,50,60,95$
(B) $9,10,15,22,40,50,60,95,23,25,27,29$
(C) $29,15,9,10,25,22,23,27,40,60,50,95$
(D) $95,50,60,40,27,23,22,25,10,9,15,29$

| Marks |  | Question ID: <br> 1626 |
| :---: | :---: | :---: |
| No |  | Options Details |
| 1 | A | Correct Option |
| 2 | B | $\checkmark$ |
| 3 | C |  |
| 4 | D |  |

Q. 22

The height of a binary tree is the maximum number of edges in any root to leaf path. The maximum number of nodes in a binary tree of height h is:
(A) $2^{\wedge} h-1$
(B) $\quad 2^{\wedge}(h-1)-1$
(C) $\quad 2^{\wedge}(h+1)-1$
(D) $2 *(h+1)$

| Marks |  | Question ID: <br> 1627 |
| :---: | :---: | :---: |
| No | Options Details | Correct Option |
| 1 | A |  |
| 2 | B |  |
| 3 | C |  |
| 4 | D |  |

Q. 23

Consider the following rooted tree with the vertex P labeled as root


The order in which the nodes are visited during in-order traversal is
(A) SQPTRWUV
(B) SQPTURWV
(C) SQPTWUVR
(D) SQPTRUWV

| Marks | 1 | Question ID: <br> 1628 |
| :--- | :--- | :--- |


| No | Options Details | Correct Option |
| :---: | :---: | :---: |
| 1 | A | $\checkmark$ |
| 2 | B |  |
| 3 | C |  |
| 4 | D |  |

Q. 24

In a complete $k$-ary tree, every internal node has exactly $k$ children. The number of leaves in such a tree with $n$ internal nodes is
(A) $n k$
(B) $(n-1) k+1$
(C) $n(k-1)+1$
(D) $n(k-1)$

| Marks 1 | Question ID: <br> 1629 |
| :--- | :--- | :--- |


| No | Options Details | Correct Option |
| :---: | :---: | :---: |
| 1 | A |  |
| 2 | B |  |
| 3 | C |  |
| 4 | D | $\checkmark$ |



| Q. 26 |  | The instructions that transfer the control to some predefined address or the address specified in the instruction are called as |  |
| :---: | :---: | :---: | :---: |
| Marks |  | 1 | $\begin{aligned} & \text { Question ID: } \\ & 1631 \end{aligned}$ |
| No |  | Options Details | Correct Option |
| 1 |  | ial control flow instructions |  |
| 2 |  | ransfer instructions | $\checkmark$ |
| 3 |  | ial control flow \& control transfer ons |  |
| 4 |  | the mentioned |  |

Q. 27 A 20-bit address bus allows access to a memory of capacity

| Marks |  | Question ID: <br> 1632 |
| :---: | :---: | :---: |
| No |  | Correct Option |
| 1 | 1 MB | $\checkmark$ |
| 2 | 2 MB |  |
| 3 | 4 MB |  |
| 4 | 8 MB |  |



## Q. 29 A bus connected between the CPU and main memory that permits transfer of information between main memory and the CPU is known as

| Marks |  | Question ID: <br> 1634 |
| :---: | :--- | :---: |
| No |  | Correct Option |
| 1 | DMA bus |  |
| 2 | Memory bus | $\checkmark$ |
| 3 | Address bus |  |
| 4 | Control bus |  |

Q. 30

## You are given the following instruction

ADD AX , [1024]
You are provided the following data:
$\mathrm{DS}=3423 \mathrm{H} ; \mathrm{SS}=1234 \mathrm{H} ; \mathrm{CS}=4567 \mathrm{H}$
Find the effective address location for the given instruction.
(A) 35254 H
(B) 13364 H
(C) 46694 H
(D) 4447 H

| Marks 1 | Question ID: <br> 1635 |
| :--- | :--- | :--- |


| No | Options Details | Correct Option |
| :---: | :---: | :---: |
| 1 | A | $\checkmark$ |
| 2 | B |  |
| 3 | C |  |
| 4 | D |  |

Q. 31 To guarantee the detection of upto 5 errors in all cases, the minimum Hamming distance in block code

| Marks |  | Question ID: <br> 1636 |
| :---: | :--- | :---: |
| No |  | Correct Option |
| 1 | 5 |  |
| 2 | 6 | Options Details |
| 3 | 11 | $\checkmark$ |
| 4 | none of the above |  |

## Q. 32

In the IPv4 addressing format, the number of networks allowed under Class $C$ addresses is
(A) $2^{14}$
(B) $2^{7}$
(C) $2^{21}$
(D) $\quad 2^{24}$

| Marks 1 | Question ID: <br> 1637 |
| :--- | :--- | :--- |


| No | Options Details | Correct Option |
| :---: | :---: | :---: |
| 1 | A |  |
| 2 | B |  |
| 3 | C |  |
| 4 | D | $\checkmark$ |



```
Q. }3
For the IEEE 802.11 MAC protocol for wireless communication, which of the following statements is/are TRUE?
```

I. At least three non-overlapping channels are available for transmissions.
II. The RTS-CTS mechanism is used for collision detection.
III. Unicast frames are ACKed.
(A) All I, II, and III
(B) I and III only
(C) II and III only
(D) II only

| Marks |  | Question ID: <br> 1639 |
| :---: | :---: | :---: |
| No | Options Details | Correct Option |
| 1 | A |  |
| 2 | B |  |
| 3 | C | $\checkmark$ |
| 4 | D |  |


| Q. 35 | Circuit switching takes place at which layer? |  |  |  |  |  |
| :--- | :--- | :--- | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Marks | Question ID: <br> 1640 |  |  |  |  |  |
| No |  | Options Details |  |  |  |  |
| 1 | Physical layer | Correct Option |  |  |  |  |
| 2 | Datalink layer |  |  |  |  |  |
| 3 | Network layer |  |  |  |  |  |
| 4 | Both (A) and (B) |  |  |  |  |  |


Q. 37 Any type of application or presentation that involves more than one type of media, such as text, graphics, video, animation, and sound.

| Marks 1 | Question ID: <br> 1642 |
| :--- | :--- | :--- |


| No | Options Details | Correct Option |
| :---: | :--- | :---: |
| 1 | An executable file |  |
| 2 | Desktop publishing |  |
| 3 | Multimedia | $\checkmark$ |
| 4 | Hypertext |  |

Q. 38 Compression ratio is the ratio of

| Marks 1 |  | Question ID: <br> 1643 |
| :---: | :--- | :---: |
| No | Options Details | Correct Option |
| 1 | the original file size to the size of the <br> compressed file | $\checkmark$ |
| 2 | the number of pixels in a frame of the original <br> size to those in a frame of the compressed <br> file |  |
| 3 | compressed file size to the original file size |  |
| 4 | none of the mentioned |  |


| Q. 39 |  | A piece of icon or image on a web page associated with another webpage is |  |
| :---: | :---: | :---: | :---: |
|  | k |  | Question ID: |
| No |  | Options Details | Correct Option |
| 1 | url |  |  |
| 2 | hyperlink |  | $\checkmark$ |
| 3 | plugin |  |  |
| 4 | extension |  |  |

```
Q. 40
```

Consider the HTML table definition given below :

```
< table border=1>
<tr>
<td rowspan=2> ab</td>
<td colspan=2> cd </td>
</tr>
<tr>
<td> ef </td>
<td rowspan=2> gh </td>
</tr>
<tr>
<td colspan=2> ik </td>
</tr>
</table>
```

The number of rows in each column and the number of columns in each row are :
(A) $(2,2,3)$ and $(2,3,2)$
(B) $(2,2,3)$ and $(2,2,3)$
(C) $(2,3,2)$ and $(2,3,2)$
(D) $(2,3,2)$ and $(2,2,3)$

| Marks |  | Question ID: <br> 1645 |
| :---: | :---: | :---: |
| No | Options Details | Correct Option |
| 1 | A |  |
| 2 | B |  |
| 3 | C |  |
| 4 | D |  |


|  |  | Q. 41 Which of the following is the wire protocol for WebScoket? |  |
| :---: | :---: | :---: | :---: |
| Marks |  | 1 | $\begin{aligned} & \text { Question ID: } \\ & 1646 \\ & \hline \end{aligned}$ |
| No |  | Options Details | Correct Option |
| 1 | RFC6455 |  | $\checkmark$ |
| 2 | RFC6477 |  |  |
| 3 | RFC6567 |  |  |
| 4 | RFC8967 |  |  |

## Q. 42

What will be the output of following code snippet?
<style h1 \{color: green;\}>
<h1>Hello</h1>
(A) h1 heading becomes green
(B) error
(C) h1 heading disappears
(D) nothing happens

| Marks 1 | Question ID: <br> 1647 |
| :--- | :--- | :--- |


| No | Options Details | Correct Option |
| :---: | :---: | :---: |
| 1 | A |  |
| 2 | B |  |
| 3 | C | $\checkmark$ |
| 4 | D |  |

## Q. 43 Logic X-OR operation of 4 ACO and B53F

| Marks |  | 1 | $\begin{aligned} & \text { Question ID: } \\ & 1648 \\ & \hline \end{aligned}$ |
| :---: | :---: | :---: | :---: |
| No |  | Options Details | Correct Option |
| 1 | 11FF |  |  |
| 2 | FFFF |  | $\checkmark$ |
| 3 | 0 |  |  |
| 4 | AACB |  |  |


| Q. 44 <br> A RAM chip has a capacity of 1024 words of 8 bits each ( $1 \mathrm{~K} \times 8$ ). The number of $2 \times 4$ decoders enable line needed to construct a $16 \mathrm{~K} \times 16$ RAM from $1 \mathrm{~K} \times 8$ RAM is |  |  |  |
| :---: | :---: | :---: | :---: |
|  |  | 1 | $\begin{aligned} & \text { Question ID: } \\ & 1649 \end{aligned}$ |
| No |  | Options Details | Correct Option |
| 1 | 4 |  |  |
| 2 | 7 |  |  |
| 3 | 6 |  |  |
| 4 | 5 |  | $\checkmark$ |

## Q. 45 <br> How many $32 \mathrm{~K} \times 1$ RAM chips are needed to provide a memory capacity of 256 K -bytes?

| Marks |  | Question ID: <br> 1650 |
| :---: | :--- | :---: |
| No |  | Correct Option |
| 1 | 8 | Options Details |
| 2 | 32 |  |
| 3 | 64 |  |
| 4 | 128 |  |

Q. 46 After the completion of the DMA transfer, the processor is notified by

| Marks | 1 | Question ID: <br> 1651 |
| :--- | :--- | :--- |


| No | Options Details | Correct Option |
| :---: | :--- | :---: |
| 1 | Acknowledge signal |  |
| 2 | Interrupt signal | $\checkmark$ |
| 3 | WMFC signal |  |
| 4 | None of the mentioned |  |

Q. 47 During the execution of a program which gets initialized first?

| Marks 1 |  | Question ID: <br> 1652 |  |
| :---: | :--- | :--- | :--- |
| No |  | Options Details | Correct Option |
| 1 | MDR |  |  |
| 2 | IR |  |  |
| 3 | PC |  | $\checkmark$ |
| 4 | MAR |  |  |

## Q. 48

Consider the following statements :
I. Daisy chaining is used to assign priorities in attending interrupts.
II. When a device raises a vectored interrupt, the CPU does polling to identify the source of the interrupt.
III. In polling, the CPU periodically checks the status bits to know if any device needs its attention.
IV. During DMA, both the CPU and DMA controller can be bus masters at the same time.
Which of the above statements is/are TRUE?
(A) I and IV only
(B) I and II only
(C) III only
(D) I and III only

| Marks 1 |  | Question ID: <br> 1653 |
| :---: | :---: | :---: |
| No | Options Details | Correct Option |
| 1 | A |  |
| 2 | B |  |
| 3 | C |  |
| 4 | D |  |

$n$ the following truth table, $\mathrm{V}=1$ if and only if the input is valid.

| Inputs |  |  |  |  | Outputs |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathrm{D}_{0}$ | $\mathrm{D}_{1}$ | $\mathrm{D}_{2}$ | $\mathrm{D}_{3}$ | $\mathrm{X}_{0}$ | $\mathrm{X}_{1}$ | V |  |
| 0 | 0 | 0 | 0 | x | x | 0 |  |
| 1 | 0 | 0 | 0 | 0 | 0 | 1 |  |
| x | 1 | 0 | 0 | 0 | 1 | 1 |  |
| x | x | 1 | 0 | 1 | 0 | 1 |  |
| x | x | x | 1 | 1 | 1 | 1 |  |

What function does the truth table represent?
(A) Priority encoder
(B) Decoder
(C) Multiplexer
(D) Demultiplexer

| Marks 1 | Question ID: <br> 1654 |
| :---: | :--- |


| No | Options Details | Correct Option |
| :---: | :---: | :---: |
| 1 | A | $\checkmark$ |
| 2 | B |  |
| 3 | C |  |
| 4 | D |  |

Q. 50 A ring counter with 5 flip flops will have ___ states.

| Marks 1 | Question ID: <br> 1655 |
| :--- | :--- | :--- |


| No | Options Details | Correct Option |
| :---: | :--- | :---: |
| 1 | 5 | $\checkmark$ |
| 2 | 10 |  |
| 3 | 32 |  |
| 4 | Infinite |  |

Q. 51 The greatest negative number which can be stored is 8 bit computer using 2's complement arithmetic is

| Marks |  | Question ID: <br> 1656 |  |
| :---: | :--- | :--- | :--- |
| No |  | Options Details | Correct Option |
| 1 | -256 |  |  |
| 2 | -128 |  | $\checkmark$ |
| 3 | -255 | -127 |  |
| 4 |  |  |  |


| Q. 52 Which of the following statements is correct? |  |  |
| :--- | :--- | :--- |
| Marks | 1 | Question ID: <br> 1657 |


| No | Options Details | Correct Option |
| :---: | :--- | :---: |
| 1 | Copper has partially filled conduction band | $\checkmark$ |
| 2 | Diamond has a completely filled conduction <br> band but an empty valence band |  |
| 3 | Silicon has a partially filled conduction band <br> but an empty valence band |  |
| 4 | Energy gap between conduction and valence <br> bands in diamond is smaller than in silicon |  |


|  |  | Q. 53 The maximum efficiency of a half-wave rectifier is |  |
| :---: | :---: | :---: | :---: |
| Marks |  | 1 | Question ID: <br> 1658 |
| No |  | Options Details | Correct Option |
| 1 | 40.60\% |  | $\checkmark$ |
| 2 | 81.20\% |  |  |
| 3 | 50\% |  |  |
| 4 | 25\% |  |  |


| Q. 54 |  | If you were to create client/server applications, which model would you go for? |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Marks |  | 1 |  | $\begin{array}{\|l\|} \hline \text { Question ID: } \\ 1659 \end{array}$ |
| No |  |  | Options Details | Correct Option |
| 1 |  | Spiral Mod |  |  |
| 2 |  | ent Model |  | $\checkmark$ |
| 3 |  | odel |  |  |
| 4 |  | ntal Model |  |  |

```
Q. }5
```

The coupling between different modules of a software is categorized as follows :

## I. Content coupling

II. Common coupling
III. Control coupling
IV. Stamp coupling
V. Data coupling

Coupling between modules can be ranked in the order of strongest (least desirable) to weakest (most desirable) as follows :
(A) I-III-V -II-IV
(B) V-IV-III-II-I
(C) I-II-III-IV-V
(D) IV-II-V-III-I

| Marks 1 | Question ID: <br> 1660 |
| :--- | :--- | :--- |


| No | Options Details | Correct Option |
| :---: | :---: | :---: |
| 1 | A |  |
| 2 | B |  |
| 3 | C |  |
| 4 | D | $\checkmark$ |




#### Abstract

Q. 57 The extent to which the s/w can continue to operate correctly despite the introduction of invalid inputs is called as


| Marks |  | Question ID: <br> 1662 |  |
| :---: | :--- | :--- | :--- |
| No |  | Options Details | Correct Option |
| 1 | Reliability |  |  |
| 2 | Portability |  |  |
| 3 | Fault tolerance |  |  |
| 4 | Robustness | $\checkmark$ |  |

$\begin{array}{ll}\text { Q. } 58 & \begin{array}{l}\text { A software organization has been assessed at SEI CMM Level 4. Which of the following does the } \\ \text { organization need to practice beside Process Change Management and Technology Change } \\ \text { Management in order to achieve Level 5? }\end{array}\end{array}$

| Marks | 1 | Question ID: <br> 1663 |
| :--- | :--- | :--- |


| No | Options Details | Correct Option |
| :---: | :--- | :---: |
| 1 | Defect Detection |  |
| 2 | Defect Isolation |  |
| 3 | Defect Prevention | $\checkmark$ |
| 4 | Defect Propagation |  |


| Q. Which of the following is not a key issue stressed by an agile philosophy of software engineering? |  |  |
| :--- | :--- | :--- |
| Marks | Question ID: <br> 1664 |  |
| No | Options Details |  |
| 1 | The importance of self-organizing teams as <br> well as communication and collaboration <br> between team members and customers | Correct Option |
| 2 | Recognition that change represents <br> opportunity |  |
| 3 | Emphasis on rapid delivery of software that <br> satisfies the customer |  |
| 4 | Having a separate testing phase after a build <br> phase |  |



| Q. 61 | Look at this series: JAZ, LEX, NIV, PMT. What alternative should come next? |  |
| :--- | :--- | :--- |
|  |  |  |
| Marks | 1 | Question ID: <br> 1666 |
| No |  | Options Details |
| 1 | QUR | Correct Option |
| 2 | RQR |  |
| 3 | RUS |  |
| 4 | SUR |  |

Q. 62 Observe the given set of number and find the suitable response from the following 12112: 23223 :: 34334:

| Marks 1 |  | Question ID: <br> 1667 |  |
| :---: | :--- | :--- | :--- |
| No |  | Options Details | Correct Option |
| 1 | 45554 |  |  |
| 2 | 45445 | $\checkmark$ |  |
| 3 | 45545 |  |  |
| 4 | 44555 |  |  |




```
Q.65
```

Reentry occurs when a person leaves his or her social system for a period of time and then returns. Which situation below best describes Reentry?
(A) When he is offered a better paying position, Javed leaves the hotel he manages to manage another one in a neighboring city.
(B) Charan is spending her final year of college studying abroad in China.
(C) Manan is readjusting to civilian life after 2 years of overseas merchant navy service.
(D) After 5 miserable months, Sneha decides that she can no longer share her room with roommate Shital

| Marks 1 |  | Question ID: <br> 1670 |
| :---: | :---: | :---: |
| No | Options Details | Correct Option |
| 1 | A |  |
| 2 | B |  |
| 3 | C |  |
| 4 | D |  |

Q. 66 A watch reads $9: 000$ 'colock and I found that the hour had is pointing South-East. In what direction, the minute hand of my watch is at that time?

| Marks 1 | Question ID: <br> 1671 |
| :---: | :--- |


| No | Options Details | Correct Option |
| :---: | :---: | :---: |
| 1 | North-east | $\checkmark$ |
| 2 | North-west |  |
| 3 | South-west |  |
| 4 | South-east |  |

```
Q. 67 The digits of a two digit number differ by 3. Find the difference of the number and the number formed by reversing its digits
```

| Marks |  | Question ID: <br> 1672 |  |
| :---: | :--- | :--- | :--- |
| No |  | Options Details | Correct Option |
| 1 | 18 |  |  |
| 2 | 27 |  | $\checkmark$ |
| 3 | 36 | 45 |  |
| 4 |  |  |  |


Q. 69 If in a certain language MYSTRERY is coded as NZTUJGZ, how is NEMESIS coded in that language

| Marks 1 |  | Question ID: <br> 1674 |
| :---: | :--- | :---: |
| No |  | Options Details |
| 1 | MDLHRDR | Correct Option |
| 2 | OFNFTJT |  |
| 3 | ODNHTDR |  |
| 4 | PGOKUGU |  |


| Q. 70 |  | Observe the number series and find the next number in series: $2,3,5,8,13,21$, |  |
| :---: | :---: | :---: | :---: |
|  |  | 1 | Question ID: 1675 |
| No |  | Options Details | Correct Option |
| 1 | 29 |  |  |
| 2 | 30 |  |  |
| 3 | 32 |  |  |
| 4 | 34 |  | $\checkmark$ |


| Q. 71 | Who is the author of "Feminine Psychology"? |  |
| :--- | :--- | :--- |
|  |  |  |
| Marks $\quad 1$ | Question ID: <br> 1676 |  |
| No |  | Correct Option |
| 1 | Adler |  |
| 2 | Karen Horney |  |
| 3 | William James |  |
| 4 | Carl Jung |  |


| Q. 72 Use the correct verb form in the sentence; She jumped off the bus while it |
| :--- |
| Marks 1 | | Question ID: |
| :--- |
| 1677 |, 0


| No | Options Details | Correct Option |
| :---: | :--- | :---: |
| 1 | was moving | $\checkmark$ |
| 2 | moved |  |
| 3 | is moving |  |
| 4 | had moved |  |

Q. 73

Identify the appropriate relationship in the given Venn diagram for Human beings: Women: Housewives, respectively.

(A) $\mathrm{X}: \mathrm{Y}: \mathrm{Z}$
(B) $\mathrm{Z}: \mathrm{Y}: \mathrm{X}$
(C) $\mathrm{Y}: \mathrm{X}: \mathrm{Z}$
(D) $\mathrm{Z}: \mathrm{X}: \mathrm{Y}$

| Marks |  | Question ID: <br> 1678 |
| :---: | :---: | :---: |
| No |  | Correct Option |
| 1 | A | Options Details |
| 2 | B |  |
| 3 | C | $\checkmark$ |
| 4 | D |  |



|  |  | Q. 75 According to Eysenck, the three basic dimensions of personality are |  |
| :---: | :---: | :---: | :---: |
| Marks |  | 1 | $\begin{aligned} & \text { Question ID: } \\ & 1680 \end{aligned}$ |
| No |  | Options Details | Correct Option |
| 1 | Extr | sion, agreeableness, consciousness |  |
| 2 | Extr | sion, neuroticism, psychoticism | $\checkmark$ |
| 3 | Con | ntiousness, neuroticism, psychoticism |  |
| 4 | $\begin{aligned} & \hline \text { Psyc } \\ & \text { cons } \end{aligned}$ | icism, extraversion, ntiousness |  |


| Q. 76 |  | The ___measures the electrical resistance of the skin |  |
| :---: | :---: | :---: | :---: |
| Marks |  | 1 | Question ID: 1681 |
| No |  | Options Details | Correct Option |
| 1 | EMG |  |  |
| 2 | GSR |  | $\checkmark$ |
| 3 | EEG |  |  |
| 4 | ECG |  |  |


| Q. 77 |  | is the major way for a person to reduce dissonance |  |
| :---: | :---: | :---: | :---: |
| Marks |  | 1 | $\begin{aligned} & \text { Question ID: } \\ & 1682 \end{aligned}$ |
| No |  | Options Details | Correct Option |
| 1 |  | nge one of the cognitive elements | $\checkmark$ |
| 2 |  | eat the old cognitive elements |  |
| 3 |  | tivate the person |  |
| 4 |  | press his emotions |  |


| Q. 78 |  | Scientists claim that __ percent of our bodily disease is said to be stress-related |  |
| :---: | :---: | :---: | :---: |
|  |  | 1 | $\begin{array}{\|l\|} \hline \text { Question ID: } \\ 1683 \end{array}$ |
| No |  | Options Details | Correct Option |
| 1 | 65\% |  |  |
| 2 | 75\% |  | $\checkmark$ |
| 3 | 55\% |  |  |
| 4 | 10\% |  |  |

## Q. 79 Sometimes relaxation instructions aim for deep-muscle relaxation and include suggestions of drowsiness or deep sleep which is known as

| Marks 1 | Question ID: <br> 1684 |
| :--- | :--- | :--- |


| No | Options Details | Correct Option |
| :---: | :--- | :---: |
| 1 | Hypnosis | $\checkmark$ |
| 2 | Hallucinations |  |
| 3 | Relaxation eversion |  |
| 4 | Trans like state |  |


| Q. 80 <br> The term $\qquad$ disorder is used when perceived stressors, viz., mental events increase the susceptibility of the body to disease |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Marks |  | 1 |  | $\begin{aligned} & \text { Question ID: } \\ & 1685 \end{aligned}$ |
| No |  |  | Options Details | Correct Option |
| 1 | Neurotic |  |  |  |
| 2 | Mental |  |  |  |
| 3 | Psychosomatic |  |  | $\checkmark$ |
| 4 | Psychoses |  |  |  |





| Q. 84 | The winter capital of Maharashtra is |  |
| :--- | :--- | :--- |
| Marks | 1 | Question ID: <br> 1689 |


| No | Options Details | Correct Option |
| :---: | :--- | :---: |
| 1 | Pune |  |
| 2 | Aurangabad |  |
| 3 | Nagpur | $\checkmark$ |
| 4 | Mumbai |  |



|  |  | Q. 86 International Court of Justice is located in |  |
| :---: | :---: | :---: | :---: |
| Marks |  | 1 | $\begin{aligned} & \text { Question ID: } \\ & 1601 \end{aligned}$ |
| No |  | Options Details | Correct Option |
| 1 | Paris |  |  |
| 2 | New York |  |  |
| 3 | Lisbon |  |  |
| 4 | The Hague |  | $\checkmark$ |


Q. 88

The present governor of Reserve Bank of India is

| Marks |  | Question ID: <br> 1693 |
| :---: | :--- | :---: |
| No |  | Correct Option |
| 1 | Manmohan Singh |  |
| 2 | Urjit Patel |  |
| 3 | Shaktikanta Das | $\checkmark$ |
| 4 | Raghuram Rajan |  |


| Q. 89 |  | The next Hockey world cup will be held in |  |
| :---: | :---: | :---: | :---: |
| Marks |  | 1 | $\begin{aligned} & \text { Question ID: } \\ & 1694 \end{aligned}$ |
| No |  | Options Details | Correct Option |
| 1 | 2021 |  |  |
| 2 | 2022 |  | $\checkmark$ |
| 3 | 2023 |  |  |
| 4 | 2024 |  |  |


|  |  | Q. 90 Elephanta Caves are situated near |  |
| :---: | :---: | :---: | :---: |
| Marks |  | 1 | Question ID: 1695 |
| No |  | Options Details | Correct Option |
| 1 | Aurangab |  |  |
| 2 | Chennai |  |  |
| 3 | Bijapur |  |  |
| 4 | Mumbai |  | $\checkmark$ |

Q. 91

Complete the given sentence selecting the appropriate alternatives from the given choices.

We met you when you, $\qquad$
(A) Are leaving the room
(B) Were leaving the room
(C) Left the room
(D) Have left the room

| Marks |  | Question ID: <br> 1696 |
| :---: | :---: | :---: |
| No | Options Details | Correct Option |
| 1 | A |  |
| 2 | B | $\checkmark$ |
| 3 | C |  |
| 4 | D |  |

Q. 92

Sentence below can be improved by replacing a string of letters in the sentence with a more appropriate/correct string. Select an alternative from the given choices to replace bold-faced string of letters in the sentence.

I wish I was rich now.
(A) Were
(B) Was
(C) IS
(D) Had

| Marks |  | Question ID: <br> 1697 |
| :---: | :---: | :---: |
| No | Options Details | Correct Option |
| 1 | A | $\checkmark$ |
| 2 | B |  |
| 3 | C |  |
| 4 | D |  |

Q. 93

Words in the question are arranged in random order. One of the four alternatives below each random word order provides the correct order of words to form a sentence. Select the alternative that provides the order for words to form a sentence.

What I not say in you do believe
$\begin{array}{llllllll}1 & 2 & 3 & 4 & 5 & 6 & 7 & 8\end{array}$
(A) $\begin{array}{lllllllll}6 & 2 & 8 & 7 & 3 & 5 & 1 & 4\end{array}$
(B) $\begin{array}{llllllll}2 & 8 & 6 & 1 & 3 & 4 & 7 & 5\end{array}$
(C) $\begin{array}{llllllll}2 & 8 & 7 & 5 & 1 & 3 & 4 & 5\end{array}$
(D) $\begin{array}{llllllll}2 & 7 & 3 & 8 & 5 & 1 & 6 & 4\end{array}$

| Marks 1 |  | Question ID: <br> 1698 |
| :---: | :---: | :---: |
| No | Options Details | Correct Option |
| 1 | A |  |
| 2 | B |  |
| 3 | C |  |
| 4 | D |  |

## Q. 94

Read the sentence to find out whether there is any error in it. The error, if any, will be in one part of the sentence. The number of that part is the answer.

The collector and District magistrate (1)/ are on (2)/ visit to the (3)/ town today to assess the situation. (4).
(A) 1
(B) 2
(C) 3
(D) 4

| Marks 1 |  | Question ID: <br> 1699 |
| :---: | :---: | :---: |
| No |  | Options Details |
| 1 | A | Correct Option |
| 2 | B |  |
| 3 | C |  |
| 4 | D |  |

Select the word from the given options that best describes the same meaning as the given word.

## CONSENT

(A) Permit
(B) Disapprove
(C) Object
(D) Differ

| Marks 1 |  | Question ID: <br> 1700 |
| :---: | :---: | :---: |
| No |  | Correct Option |
| 1 | A | $\checkmark$ |
| 2 | O |  |
| 3 | C |  |
| 4 | D |  |

Q. 96

Select the word from the given options that best describes the meaning opposite to the given word.

## DELUSION

(A) Fallacy
(B) Illusion
(C) Reality
(D) Deception

| Marks 1 |  | Question ID: <br> 1701 |
| :---: | :---: | :---: |
| No | Options Details | Correct Option |
| 1 | A |  |
| 2 | B |  |
| 3 | C |  |
| 4 | D |  |

Q. 97

Select the option that best describes the meaning of the given Idiom/Phrase

Spick and span
(A) In confusion
(B) In order
(C) In trouble
(D) Mislead

| Marks 1 | Question ID: <br> 1702 |
| :--- | :--- | :--- |


| No | Options Details | Correct Option |
| :---: | :---: | :---: |
| 1 | A |  |
| 2 | B | $\checkmark$ |
| 3 | C |  |
| 4 | D |  |

Q. 98

Select the option that best describes the meaning of the given Idiom/ Phrase

French leave
(A) A holiday in France
(B) Day break
(C) A visit to France on leave
(D) Absent without permission.

| Marks 1 | Question ID: <br> 1703 |
| :---: | :---: |


| No | Options Details | Correct Option |
| :---: | :---: | :---: |
| 1 | A |  |
| 2 | B |  |
| 3 | C |  |
| 4 | D | $\checkmark$ |

Select the correct alternative to fill up the blank in the following sentence.

It has now been $\qquad$ that twenty people died in the accident.
(A) Assured
(B) Confirmed
(C) ensured
(D) Counted

| Marks | 1 | Question ID: <br> 1704 |
| :--- | :--- | :--- |


| No | Options Details | Correct Option |
| :---: | :---: | :---: |
| 1 | A |  |
| 2 | B | $\checkmark$ |
| 3 | C |  |
| 4 | D |  |

Q. 100

One word in the group of four words below is an odd word that does not go with the group. Select the alternative to pick the odd one out.

Pick the odd one out
(A) Ream
(B) Stone
(C) Quire
(D) Dozen

| Marks 1 | Question ID: <br> 1705 |
| :---: | :--- |


| No | Options Details | Correct Option |
| :---: | :---: | :---: |
| 1 | A |  |
| 2 | B | $\checkmark$ |
| 3 | C | $\checkmark$ |
| 4 | D |  |

