

Date of Examination:	29-04-2022	Time:	2 Hrs
Name of the Post:	Junior Technical Superintendent (CSE)		

Name of the Candidate:											
Application No:											

Candidate's Signature

Invigilator's Signature

Instructions to the Candidate:

1. Use of Calculators, Cell Phones and Other Electronic Devices are not permitted inside the examination hall.
2. Candidate should fill the details on both question paper booklet and OMR sheet carefully without any corrections.
3. Candidate should carefully read the instructions given on the question paper booklet and OMR sheet
4. Candidate should mark correct answer only on OMR sheet.
5. **Question paper consists of 75 questions in total. The questions are divided into Part A and Part B. Part A consists of 50 questions carrying one mark each. Part B consists of 25 questions carrying two marks each.**
6. **Wrong answer per each question in Part A carries negative of 0.25 marks. Wrong answer per each question in Part B carries negative of 0.5 mark.**
7. Clarifications on Questions are not permitted.
8. Rough works can be done in the blank space provided at the end of the question paper booklet.
9. No Candidate is allowed to leave the examination hall till the examination is completed.
10. **Candidate should return both question paper booklet and the OMR sheet after completion of examination to the Invigilator**

PART A: (50 x 1 = 50 Marks)

Note: Wrong answer per each question in Part A carries negative of 0.25 marks.

1.	<p>The output of the following code snippet is:</p> <pre>#include<stdio.h> #include<stdlib.h> void fun(int *p){ p = (int*) malloc(sizeof(int)); *p = 10; return; } void main(){ int a = 20, * p; p = &a; fun(a); printf("%d", *p); }</pre> <p>A) 20 B) 10 C) Buffer Overflow Error D) Compile-Time Error</p>
2.	<p>Which of the following command is used to proceed to the next breakpoint in GDB debugging?</p> <p>A) Next B) continue C) prev D) both next and continue</p>
3.	<p>Which GDB command interrupts the program whenever the value of a variable is modified and prints the value old and new values of the variable?</p> <p>A) Watch B) show C) trace D) backtrace</p>
4.	<p>Which GDB command produces a stack trace of the function calls that lead to a segmentation fault?</p> <p>A) Trace B) backtrace C) break D) forwardtrace</p>
5.	<p>Which of the following is not true?</p> <p>A) find and locate are used for searching any files in the unix filesystem B) find and du are used for locating larger files in your file system C) ssh can be used for running a command on a remote computer D) /etc/passwd file contains user's password information on a host</p>
6.	<p>What is the amount of swap space to be allocated on a machine having 1 TB disk space 16 GB RAM 256 GB SSD for installing ubuntu</p> <p>A) 500 GB B) 16 GB C) 32 GB D) 8 GB</p>
7.	<p>Which of the following super global variable holds the information about headers, paths, and script locations?</p> <p>A) \$_REQUEST B) \$_SERVER C) \$_POST D) S_GET</p>
8.	<p>Which of the following regular expression validates the name field that contains only alphabets, hyphens, apostrophes, and whitespaces?</p> <p>A) /^[a-zA-Z-']*\$/ B) /^[a-zA-Z-']\$/ C) /^[a z A Z-']*\$/ D) /^[a-zA-Z']*\$/</p>

9.	<p>Which of the following output is correct for the following php code snippet?</p> <pre><? php \$odate = "01-01-2022"; \$date = str_replace('-', '/', \$odate); \$ndate = date("Y/m/d", strtotime(\$date)); echo "Updated date format is:". \$ndate; ?></pre> <p>A) Updated date format is: 2022-01-01 B) Updated date format is: 01/01/2022 C) Updated date format is: 2022/01/01 D) Updated date format is: 01-01-2022</p>
10.	<p>Which of the following php function will help to deal with undeclared variables?</p> <p>A) error_reporting(E_PARSE) B) error_reporting(E_ALL) C) error_reporting(0) D) error_reporting(E_NOTICE)</p>
11.	<p>What is the output of the following code snippet?</p> <pre><?php \$var = substr(\$_SERVER["SCRIPT_NAME"],strrpos(\$_SERVER["SCRIPT_NAME"],"/")+1); echo \$curPageName; echo "</br>"; ?></pre> <p>A) Current web page full URL B) Current web page name C) Current IP address D) Current Host name</p>
12.	<p>WSDL stands for:</p> <p>A) Web Services Description Language B) Web Server Domain Link C) Web Search Data Language D) Web Sink Description Language</p>

13. Consider the following database table named Scores

Player	Country	Goals
A	Germany	16
B	Brazil	15
C	Germany	14
D	France	13
E	Brazil	12
F	Germany	11
G	Hungary	11
H	Argentina	10
I	Peru	10
J	Poland	10
K	England	10
L	Germany	10
M	Germany	10

SELECT t1.Player FROM Scores AS t1 WHERE t1.Goals > ALL (SELECT t2.Goals FROM Scores AS t2 WHERE t2.Country = 'France') AND t1.Goals > ANY (SELECT t3.Goals FROM Scores AS t3 WHERE t3.Country = 'Germany')

How many number of tuples SQL query returns?

- A) 7 B) 5 C) 4 D) 3

14. The employee information in the company is stored in the relation:

Employee (name, gender, salary, deptname)

Considering the following SQL query, identify the correct description about the query?

```
SELECT deptname
FROM Employee
WHERE gender = 'M'
GROUP BY deptname
HAVING AVG(salary) > (SELECT AVG(salary) FROM Employee)
```

The query gives departments having

- A) average salary more than the average salary in the company.
B) average salary of male employees more than the average salary of all male employees in the company.
C) average salary of male employees more than the average salary of employees in the same department.
D) average salary of the male employees more than the average salary in the company.

15. What is the output of the following code snippet?

```
<?php
$str = "<h1>Hello World!</h1>";
$newstr = filter_var($str, FILTER_SANITIZE_STRING);
echo $newstr; ?>
```

- A) Hello World
B) Hello World!
C) <h1> Hello World!</h1>
D) HelloWorld!

16.	<p>What is the cookie expire duration in the following script?</p> <pre><?php \$cookie_name = "user"; \$cookie_value = "John Doe"; setcookie(\$cookie_name, \$cookie_value, time() + (86400 * 30), "/"); ?></pre> <p>A) One day B) Ten days C) Twenty days D) Thirty days</p>
17.	<p>Which of the following statements are TRUE with respect to the given regular expression: <code>"^(?=.*?[A-Z])(?=.*?[a-z])(?=.*?[0-9])(?=.*?[#?!@\$%^&*-.]){5,10}\$"</code></p> <p>I. Must start with small letter. II. Must end with 5 or 10. III. Must contain at least one lowercase, uppercase alphabet and one numeral. IV. Must contain at least one special character.</p> <p>A) Only I is TRUE B) I and II are TRUE C) I, III and IV are TRUE D) III and IV are TRUE</p>
18.	<p>Which of the following strings satisfy the given regular expression? <code>"^(?=.*?[A-Z])(?=.*?[a-z])(?=.*?[0-9])(?=.*?[#?!@\$%^&*-.]){5,10}\$"</code></p> <p>I. aB@f5 II. 01J@n10 III. @24Augsw</p> <p>A) Only I satisfies B) I and II satisfies C) II and III satisfies D) I, II and III satisfies</p>
19.	<p>The binary equivalent of $(-23)_{10}$ is (2's complement system for negative number is used): A) 01000 B) 01010 C) 01001 D) 10111</p>
20.	<p>The type of memory that holds the computer startup routine is A) ROM B) DRAM C) Cache D) RAM</p>
21.	<p>Which of the following protocol is used by e-mail client to download e-mails to your computer A) TCP B) SMTP C) FTP D) POP</p>
22.	<p>If $(y)_x$ represents a number y in base x, then which of the following number is smallest of all? A) $(11001)_2$ B) $(21)_8$ C) $(23)_{10}$ D) $(13)_{16}$</p>
23.	<p>The term one gigabyte refers to: A) 1024 bytes B) 1024 megabytes C) 1024 kilobytes D) 1024 petabytes</p>
24.	<p>If one gigabyte is equals to 2^{30} bytes of data storage, then 1024 terabytes is equals to ___ bits of data storage. A) 2^{50} B) 2^{43} C) 2^{53} D) 2^{40}</p>
25.	<p>Which of the following task is not performed by the ifconfig A) To obtain information about just one networking card B) To bring interfaces up or down C) You can set temporarily an ip address D) You can set permanently an ip address</p>
26.	<p>Which of the following command is used to display the computer's local routing table A) netstat -f B) netstat -y C) netstat -r D) netstat -a</p>
27.	<p>Which of the following command is used to verify gateway is alive or not? A) ping B) ifconfig C) arp D) tcpdump</p>

28.	Which of the following statement is False? A) ssh-keygen command generates two keys B) password less authentication is achieved using ssh-keygen C) ssh-keygen generates single key D) we can use dsa and rsa in ssh-keygen
29.	Which of the following command sends an ICMP echo message and requests TTL values is increased by 1 each time? A) ping B) tracert C) traceroute D) route
30.	nslookup command is used for A) query the internet DNS B) to look into active connections C) display all TCP/IP connections D) status of Ethernet
31.	ethtool command is used for: A) displaying or changing the network card settings B) displaying current ip address C) changing gateway D) displaying the hostname of your computer
32.	Consider three machines A, B and C with IP addresses 100.10.5.2, 100.10.5.5 and 100.10.5.6 respectively. The subnet mask is set to 255.255.255.252 for all three machines. Which one of the following is TRUE? A) A, B, and C belong to the same network B) Only A and B belong to the same subnet C) A, B and C belong to three different subnets D) Only B and C belong to the same subnet
33.	Consider that 15 machines need to be connected in a LAN using 8-port Ethernet switches. Assume that these switches do not have any separate uplink ports. The minimum number of switches needed A) 7 B) 9 C) 3 D) 2
34.	Which of the following command is not allowed to change the state of the network interface A) Ifconfig B) ifup C) ip D) netstat
35.	The 10 base 5 cabling scheme of Ethernet uses: A) Twisted pair B) Fiber optics C) Thin coax D) Thick coax
36.	The maximum speed of the 802.11g A) 54 Mbps B) 11 Mbps C) 100 Mbps D) 200 Mbps
37.	Which of the following command will help us to allow forwarding HTTPS requests of TCP traffic on IP interface 10.20.30.0 to go to 195.153.23.45 ? A) iptables -A FORWARD -p tcp -dport 80 -s 10.20.30.0/24 -d 195.153.23.45 -j ACCEPT B) iptables -A FORWARD -p tcp -dport 443 -s 10.20.30.0/24 -d 195.153.23.45 -j ACCEPT C) iptables -A FORWARD -p tcp -dport 80 -d 10.20.30.0/24 -s 195.153.23.45 -j ACCEPT D) iptables -A FORWARD -p tcp -dport 443 -d10.20.30.0/24 -s 195.153.23.45 -j ACCEPT

38.	Which of the following command removes a package along with its configuration files A) apt-get remove [package_name] B) apt-get purge [package_name] C) apt-get autoremove D) apt-get autoclean [package_name]
39.	Suppose a subnet id is 12.5.148.0, with a subnet mask 255.255.255.0. Identify which of the following ip addresses can be assigned to the clients by DHCP. A) 12.5.148.0, 12.5.148.96 B) 12.5.148.23, 12.5.148.255 C) 12.5.148.62, 12.5.148.36 D) 12.5.148.220, 12.5.148.0
40.	Which of the following measures will address 'disc error' while booting I. Examining all non-bootable storage media and detaching II. Checking for damaged IDE or SATA cables III. Changing the boot order IV. Reinstalling the hard drive A) I and II only B) II and III only C) I, II and IV only D) All the four steps are equally valid
41.	Identify the diagnostic testing process used by a computer's fundamental input/output system (or "beginning program") to evaluate whether the computer keyboard, random access memory, disc drives, and other hardware are functioning properly. A) Safe Mode B) POST C) POP D) NetBios
42.	This kind of verification is used to look for flaws in data that has been sent through a communications link. A) Ring Back B) Cyclic Redundancy Checking C) Traceroute D) Netstat
43.	Which of the following is true about proxy servers I. Proxy servers help adding extra layer of validation to secure certain resources II. Proxies servers can help in improving performance using load balancing strategies III. Proxy servers help in specifying the rules for packet delivery, denial, rejection etc. IV. Proxy servers act as replicas for a service A) I and II only B) I and III only C) II and III only D) II and IV only
44.	Pick the correct statement(s) about web caching I. Forward Caching improves the web content access efficiency for out bound traffic of a network II. Forward Caching improves the web content access efficiency for in bound traffic of a network III. Reverse Caching improves the web content access efficiency for out bound traffic of a network IV. Reverse Caching improves the web content access efficiency for in bound traffic of a network A) I and III B) I and IV C) II and III D) II and IV

45.	<p>Which of the following statement is TRUE?</p> <p>A) By default, wget checks whether the server has a valid SSL/TLS Certificate</p> <p>B) wget avoids certification authorities checking for a server certification</p> <p>C) By default, wget does not check whether server has a valid SSL/TLS Certificate</p> <p>D) wget doesn't care about the security issues</p>												
46.	<p>Match the following in the context of dpkg selection states:</p> <table border="1" data-bbox="304 488 1460 607"> <tr> <td>I</td> <td>deinstall</td> <td>P</td> <td>remove all files, except configuration files</td> </tr> <tr> <td>II</td> <td>purge</td> <td>Q</td> <td>not to be handled by dpkg</td> </tr> <tr> <td>III</td> <td>hold</td> <td>R</td> <td>removes everything including configuration files</td> </tr> </table> <p>A) I-R, II-P, III-R B) I-P, II-R, III-Q C) I-R, II-P, III-P D) I-Q, II-R, III-P</p>	I	deinstall	P	remove all files, except configuration files	II	purge	Q	not to be handled by dpkg	III	hold	R	removes everything including configuration files
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II	purge	Q	not to be handled by dpkg										
III	hold	R	removes everything including configuration files										
47.	<p>Pick the correct statement about NAT table</p> <p>I. NAT uses the built-in chain PREROUTING for modifying the source ip address of packets</p> <p>II. NAT uses the built-in chain PREROUTING for modifying the destination ip address of packets</p> <p>III. NAT uses the built-in chain POSTROUTING for modifying the source ip address of packets</p> <p>IV. NAT uses the built-in chain POSTROUTING for modifying the destination ip address of packets</p> <p>A) I and III B) I and IV C) II and III D) II and IV</p>												
48.	<p>Pick the correct statement about iptables</p> <p>I. Filter table is default table in the iptables</p> <p>II. Mangle table entries are meant for altering QOS bits of tcp header</p> <p>III. RAW table entries are meant for modifying the source and destination ip address of packets</p> <p>IV. NAT table entries are meant for configuration exemptions</p> <p>A) I and III B) II and IV C) I and II D) II and IV</p>												
49.	<p>Pick the correct statement about the iptables command below</p> <pre># iptables -I INPUT 1 -s 192.168.0.0/24 -j INTRANET</pre> <p>I. It inserts a rule in INTRANET chain at position 1 with a reference in INPUT chain</p> <p>II. It updates a rule in INTRANET chain at position 1 with a reference in INPUT chain</p> <p>III. It inserts a rule in INPUT chain at position 1 with a reference in INTRANET chain</p> <p>IV. This rule enables accepting packets from source ip addresses in the range 192.168.0.0/24 if default policy is accept</p> <p>A) I and IV B) I and II C) III and IV D) II and III</p>												
50.	<p>The total number of child processes created by the following C program</p> <pre>#include<unistd.h> int main(){ int i; for(i=0; i<10; i++){ if(i%2 != 0) fork(); } rerurn 0; }</pre> <p>A) 33 B) 26 C) 28 D) 31</p>												

Part – B (25 Questions and each carry 2 Marks)

Note: Wrong answer per each question in Part B carries negative of 0.5 marks.

51.	<p>Given the access sequence to the following pages by a program 0,9,0,1,8,1,8,7,8,7,1,2,8,2,7,8,2,3,8,3, Identify the number of page faults assuming that the os has three free frames available to it and uses optimal replacement as policy?</p> <p>A) 6 B) 7 C) 8 D) 9</p>																																																															
52.	<p>Four jobs to be executed on a single processor system arrives at time zero in the order A, B, C, and D. Their CPU burst time requirements are 4,2,8,1 respectively. The completion time of A under Round Robin scheduling with time slice of one time unit is</p> <p>A) 9 B) 10 C) 11 D) 12</p>																																																															
53.	<p>Consider the following code fragment and identify valid assertions from below</p> <pre>#include <stdio.h> void fun(int a, int b){ int flag = 0; int m = a; if(a>b) m=b; for(int i=2;i<m;i++){ if((a%i==0) && (b%i==0)){ flag = 1; } } if(flag==1) printf("A"); else printf("B"); }</pre> <p>I. For the input pairs (2,30), (15,23) the output is AB II. For the input pairs (2,30), (15,23) the output is BB III. For the input pairs (240,39), (15,229) the output is AB IV. For the input pairs (240,39), (15,229) the output is BA</p> <p>A) I and IV are valid B) I and II are valid C) II and III are valid D) II and IV are valid</p>																																																															
54.	<p>Identify the correct sequence in which the following packets are transmitted on the network by a host when a browser requests a web page from a remote server, assuming that the host has just been restarted.</p> <p>A) HTTP GET request, DNS query, TCP SYN B) DNS query, TCP SYN, HTTP GET request C) DNS query, HTTP GET request, TCP SYN D) HTTP GET request, TCP SYN, DNS query</p>																																																															
55.	<p>Consider the database given below:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>empno</th> <th>ename</th> <th>job</th> <th>mgr</th> <th>hiredate</th> <th>sal</th> <th>deptno</th> </tr> </thead> <tbody> <tr> <td>7369</td> <td>SMITH</td> <td>CLERK</td> <td>7902</td> <td>1980-12-17</td> <td>800</td> <td>20</td> </tr> <tr> <td>7499</td> <td>ALLEN</td> <td>SALESMAN</td> <td>7698</td> <td>1981-02-20</td> <td>1600</td> <td>30</td> </tr> <tr> <td>7521</td> <td>WARD</td> <td>SALESMAN</td> <td>7698</td> <td>1981-02-22</td> <td>1250</td> <td>30</td> </tr> <tr> <td>7566</td> <td>JONES</td> <td>MANAGER</td> <td>7839</td> <td>1981-04-02</td> <td>2975</td> <td>20</td> </tr> <tr> <td>7654</td> <td>MARTIN</td> <td>SALESMAN</td> <td>7698</td> <td>1981-09-28</td> <td>1250</td> <td>30</td> </tr> <tr> <td>7698</td> <td>BLAKE</td> <td>MANAGER</td> <td>7839</td> <td>1981-05-01</td> <td>2850</td> <td>30</td> </tr> <tr> <td>7782</td> <td>CLARK</td> <td>MANAGER</td> <td>7839</td> <td>1981-06-09</td> <td>2450</td> <td>10</td> </tr> <tr> <td>7788</td> <td>SCOTT</td> <td>ANALYST</td> <td>7566</td> <td>1982-12-09</td> <td>3000</td> <td>20</td> </tr> </tbody> </table>	empno	ename	job	mgr	hiredate	sal	deptno	7369	SMITH	CLERK	7902	1980-12-17	800	20	7499	ALLEN	SALESMAN	7698	1981-02-20	1600	30	7521	WARD	SALESMAN	7698	1981-02-22	1250	30	7566	JONES	MANAGER	7839	1981-04-02	2975	20	7654	MARTIN	SALESMAN	7698	1981-09-28	1250	30	7698	BLAKE	MANAGER	7839	1981-05-01	2850	30	7782	CLARK	MANAGER	7839	1981-06-09	2450	10	7788	SCOTT	ANALYST	7566	1982-12-09	3000	20
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7839	KING	PRESIDENT	NULL	1981-11-17	5000	10
7844	TURNER	SALESMAN	7698	1981-09-08	1500	30
7876	ADAMS	CLERK	7788	1983-01-12	1100	20
7900	JAMES	CLERK	7698	1981-12-03	950	30
7902	FORD	ANALYST	7566	1981-12-03	3000	20
7934	MILLER	CLERK	7782	1982-01-23	1300	10

Let the query that is run on mysql table containing the above data be

```
select subq.deptno, GROUP_CONCAT(subq.ename) as "G"
  from (
    select ee.deptno, ee.ename
      from EMPLOYEE ee INNER JOIN
        (select deptno, avg(sal) as avgsal
         from EMPLOYEE
        group by deptno) deptavg
     on ee.deptno=deptavg.deptno
    where ee.sal > deptavg.avgsal) subq
 group by subq.deptno;
```

A) The output of the query is

```
deptno  G
10      KING
20      FORD, SCOTT, JONES
30      BLAKE
```

B) The output of the query is

```
deptno  G
10      KING
20      FORD, SCOTT, JONES
30      ALLEN
```

C) The output of the query is

```
deptno  G
10      KING
20      FORD
30      ALLEN
```

D)

```
deptno  G
10      KING
20      FORD
30      BLAKE
```

56. Match the following protocols to their default port numbers

I. SMTP	P) 110
II. HTTPS	Q) 25
III. FTP data transfer	R) 20
IV. POP3	S) 443

- A) I-Q, II-S, III-R, IV-P
 B) I-R, II-P, III-Q, IV-S
 C) I-S, II-P, III-S, IV-Q
 D) I-P, II-S, III-R, IV-Q

57.	<p>Match the following RAID configurations with their technical functionalities</p> <p>1) RAID-0 5) Mirroring 2) RAID-1 6) Striping 3) RAID-5 7) Byte level Striping with Parity 4) RAID-3 8) Block Level Striping with Distributed Parity</p> <p>A) 1-5, 2-6, 3-7, 4-8 B) 1-6, 2-7, 3-8, 4-5 C) 1-6, 2-5, 3-8, 4-7 D) 1-8, 2-6, 3-7, 4-5</p>
58.	<p>What would be the values of the variables c, i and j while the function returns from the function call 'fun(a,10,40);' in the following code snippet.</p> <pre>int fun(int a[], int x, int y) { int c, i, j; for (i = 0; i < x; i++) { c = a[i]; for (j = i+1; j < x + 1; j++) { if (c == y) { return 1; } else if (c > y) { break; } c = c + a[j]; } } return 0; } void main(){ int a[10] = {1,2,3,4,5,6,7,8,9,10}; fun(a,10,40); }</pre> <p>A) 40, 5, 10 B) 40, 5, 9 C) 40, 4, 10 D) 40, 4, 9</p>
59.	<p>Identify the missing statements if number of function calls made during the execution of the statement fun(10) is 122;</p> <pre>int fun(a){ if(a<3){ return _____ ; } else if((a<5) &&(a>3)){ return _____; } else{ _____ } return _____ ; }</pre> <p>A) 2, fun(a-1) + fun(a-2), fun(a-1) + fun(a-2) + fun(a-3)</p>

	<p>B) 1, fun(a-1) + fun(a-2) + fun(a-3), fun(a-2) + fun(a-3) C) 1, fun(a-1) + fun(a-2) + fun(a-3), fun(a-1) + fun(a-2) D) 2, fun(a-1) + fun(a-2) + fun(a-3), fun(a-2) + fun(a-3)</p>
60.	<p>Consider a scenario in which you could not reach a destination IP and could not identify a route to the next hop using TCP/IP stack. Identify the right action you would take to troubleshoot this problem</p> <p>(i) Ping the destination IP if the destination and source have the same subnet mask (ii) Ping the router's gateway IP address if the destination is on a different subnet mask. (iii) Use the command netstat -lt (iv) Use the command tcpdump -i eth0 dst host 8.8.8.8</p> <p>A) (i) and (ii) B) (i) and (iii) C) (i) and (iv) D) (ii) and (iii)</p>
61.	<p>Consider the following code snippet and identify which of the following statements is true about the output and number of comparisons done in the code.</p> <pre>#include <stdio.h> void fun(int arr[], int N) { int i; int m1 = arr[0], m2 = arr[0]; for (i = 0; i < N; i++) { if (arr[i] < m1) { m1 = arr[i]; } else if (arr[i] > m2) { m2 = arr[i]; } } printf("M1: %d and M2: %d",m1,m2); } int main() { int arr[] = {5, 8, 4, -1 ,3, 2, -2, 7, 10}; fun(arr, 9); return 0; }</pre> <p>A) M1: 10 and M2: -2, and the number of comparisons are 20 B) M1: -2 and M2: 10, and the number of comparisons are 15 C) M1: 10 and M2: -2, and the number of comparisons are 15 D) M1: -2 and M2: 10, and the number of comparisons are 20</p>

62.	<p>Consider the bash script below and predict the output of the same</p> <pre>#!/bin/bash for i in A,B,C,D; do cd "\$i"; rm -rf *; done;</pre> <p>Consider that the script is run from a directory containing A, B, C, D.</p> <ul style="list-style-type: none"> (i) It runs correctly if the directory structure is A/B/C/D (ii) It runs correctly if the inner statements are changed to "rm -rf "\$i"/*"; (iii) It results in an error "cd: X: No such file or directory" for X in B, C, D (iv) It runs correctly if "cd ..;" is added as additional statement in do done block <p>A) (i) and (ii) B) (ii) and (iii) C) (ii), (iii) and (iv) D) (i) (ii) and (iii)</p>
63.	<p>Consider the following program with input as 1 to N integers in arbitrary order with a missing or repeated element (the length of the array is N-1 for missing case and N+1 for repeated case).</p> <pre>#include <stdio.h> void fun(int a[],int N){ int s1 = 0,s2=0,s3=___; for(int i=0;i<N+s3;i++){ _____; } s2 = _____; printf(" %d ", _____); }</pre> <p>If the blanks are filled with following code in successive order identify the correct options about the validity of assertions below</p> <ul style="list-style-type: none"> (i) Blanks with values 1, $s1 = s1 + a[i]$, $N*(N+1)/2$, $s1-s2$ will enable finding repeated element in the array (ii) Blanks with values 1, $s1 = s1 + a[i]$, $N*(N+1)/2$, $s2-s1$ will enable finding repeated element in the array (iii) Blanks with values -1, $s1 = s1 + a[i]$, $N*(N+1)/2$, $s1-s2$ will enable finding missing element in the array (iv) Blanks with values -1, $s1 = s1 + a[i]$, $N*(N+1)/2$, $s2-s1$ will enable finding missing element in the array <p>A) (i) and (iii) are true B) (i) and (iv) are true C) (ii) and (iii) are true D) (ii) and (iv) are true</p>
64.	<p>Consider the following bash script and identify the combination of missing statements and corresponding output</p> <pre>#!/bin/bash Str="abc 12 xyz 23"; x=\$_____ y=\$_____ echo "\$_____";</pre> <ul style="list-style-type: none"> (i) {Str:4:2},{Str:11:2},((\$x*\$y)),276 (ii) {Str:3:2},{Str:10:2},((\$x*\$y)),1 (iii) {Str:3:2},{Str:10:2},((\$x+\$y)),3 (iv) {Str:4:2},{Str:11:2},((\$x*\$y)),34

	<p>A) (i) and (ii) represent valid code and output combinations B) (i) and (iii) represent valid code and output combinations C) (i) and (iv) represent valid code and output combinations D) (ii) and (iii) represent valid code and output combinations</p>
65.	<p>Consider the following code fragment and choose correct option valid for the code.</p> <pre>#include <stdio.h> int fun(int n){ if(n<=1) return 1; return fun(n-1) + fun(n-2); }</pre> <p>If the function fun is called with a value of 10,</p> <p>(i) In the evaluation of fun(10), fun(1) is invoked 55 times (ii) In the evaluation of fun(10), fun(7) is invoked 5 times (iii) In the evaluation of fun(10), fun(8) is invoked 2 times (iv) In the evaluation of fun(10), fun(0) is invoked 45 times</p> <p>A) (i) and (ii) are valid B) (i) and (iii) are valid C) (i) and (iv) are valid D) (ii) and (iii) are valid</p>
66.	<p>The minimum number of bits required to store any three-digit decimal number is equal to</p> <p>A) 3 B) 5 C) 8 D) 10</p>
67.	<p>Which of the following statements is true about incremental and differential backups</p> <p>I. Incremental backup takes more space than differential backup II. Incremental backup is faster than differential backup III. Incremental backup is more secure than differential backup IV. Data recovery takes more time with Incremental backup compared to differential backup</p> <p>A) I and II only B) II and IV only C) II and III only D) I and III only</p>
68.	<p>Which of the following is a type of malware internationally inserted into a software system that will set off a malicious function when specified conditions are met?</p> <p>A) Worm B) Trojan C) Spyware D) Logic bomb</p>
69.	<p>In computer terminology, which of the following describe device drivers?</p> <p>A) Hardware that allows interaction between the peripheral device and the operating system. B) Software that allows the user to control the operating system. C) Software that allows interaction between the peripheral device and the operating system. D) Software that allows the user to control the operating system.</p>

70.	A new laptop has been produced that weigh less, is smaller and uses less power than previous laptop models. Which of the following technologies has been used to accomplish this? A) Universal serial bus mouse B) Faster random-access memory C) Blu ray drive D) Solid-state hard drive
71.	Which of the following is not a driver of Industry 4.0? A) The processing of information is much faster. B) There is more data accessible. C) The algorithms for forecasting and optimization are better than before. D) New materials allow lighter products.
72.	A smart product is ____. A) a product that is analogue. B) a product that can implement in several languages. C) a product that is very clever. D) a product that can respond to changes in its environment.
73.	With regard to word processing software, the process of combining static information in a publication together with variable information in a data source to create one merged publication is called A) Electronic email B) Data sourcing C) Spam mail D) Mail merge
74.	Given the following email fields, which of the email addresses will “sachin” be able to see when he receives the message? To <u>ram@test.com</u> Cc <u>laxman@test.com</u> ; <u>sita@test.com</u> Bcc <u>sachin@test.com</u> ; <u>rama@test.com</u> A) <u>ram@test.com</u> B) <u>ram@test.com</u> ; <u>laxman@test.com</u> ; <u>sita@test.com</u> C) <u>ram@test.com</u> ; <u>rama@test.com</u> D) <u>ram@test.com</u> ; <u>rama@test.com</u> ; <u>laxman@test.com</u> ; <u>sita@test.com</u>
75.	Which of the following domains is used for profit businesses? A) .com B) .edu C) .org D) .net

SPACE FOR ROUGH WORK

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