Recruitment Test

Duration: 45 Minutes

1 C-PROGRAMMING

1.1
```
# include <stdio.h>
int main( )
{
        int i=20;
        i>>2;
        printf("i value:%d\n",i);
        return 0;
}
```

a) i value:20
b) i value:5
c) i value:10
d) None of the above

1.2
```
# include <stdio.h>
int main( )
{
        int i = -10;
        printf("i value:%0x\n",i);
        return 0;
}
```

a) i value:-10
b) i value:fffffff6
c) compilation error
d) run-time error

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1.3 The compiler is 32-bit compiler

```
# include<stdio.h>
int main( )
{
        short int num = 20;
        int k=sizeof(num++);
        printf("num:%d,k:%d\n",num,k);
        return 0;
}
```

a) num:21, k:2
b) num:21, k:4
c) num:20, k:2
d) num:20, k:4

1.4

```
# include<stdio.h>
int main( )
{
        int num = 100;
        if(num == 100)
        {
                printf("About to correct\n");
                break;
        }
        else
        {
                printf("Thinking...\n");
        }
return 0;
}
```

a) About to correct
b) Thinking...
c) compilation error
d) run-time error

1.5
```
# include<stdio.h>
# define SUM(a,b) a*b
int main( )
{
        int m=10,n=12;
        printf("Value:%d\n",SUM(m+1,n+1));
        return 0;
}
```

a) Value: 143
b) Value: 23
c) Value: 120
d) Value: 22

1.6
```
# include<stdio.h>
auto int i=20;
int main( )
{
        printf("i value :%d\n",i++);
        return 0;
}
```

a) i value:20
b) i value:21
c) compilation error
d) run-time error

1.7 If integer needs 3 bytes of storage, then maximum value of an unsigned integer is

a) $2^{24} - 1$
b) $2^{23} - 1$
c) 2^{23}
d) 2^{24}

1.8 When double is converted to float, the value is?

a) Rounded
b) Truncated
c) Depends on the standard
d) Depends on the compiler

1.9 What is the output of the following program?

```
# include <stdio.h>
void foo(int [ ] [3]);
int main(void)
{
int a[3][3] = { {1, 2, 3}, {4, 5, 6}, {7, 8, 9} };
foo(a);
printf("%d\n", a[2][1]);
return 0;
}

void foo(int b[ ] [3])
{
        ++b;
        b[1][1] = 9;
}
```

a) 8
b) 9
c) 7
d) none of the above

1.10 Predict the output!!!

```
main( )
{
        float me = 1.1;
        double you = 1.1;
        if(me==you)
        Printf("I love college");
        else
        printf("I bunk college");
}
```

a) I bunk college
b) I love college
c) compilation error
d) none of these

2 Technical:

2.1 How many processes can simultaneously run on the system with the following configuration?
On-line CPU list: 0 – 7
Hyper threading: Enabled
Cores per socket: 2
Sockets: 2

a) 4
b) 6
c) 8
d) 7

2.2 A 3-stage pipeline has stage delays of 100, 150, 200 ns. Intermediate register delay is 5 ns each. Total execution time for 1000 independent instructions is

a) 2,05,410 ns
b) 2,05,820 ns
c) 2,15,430 ns
d) 2,15,860 ns

2.3 Which of the following is a stable system?

a) $y(t) = t\,x(t)$
b) $y(t) = t^2\,x(t)$
c) $y(t) = e^{t}\,x(t)$
d) $y(t) = e^{-t}\,x(t)$

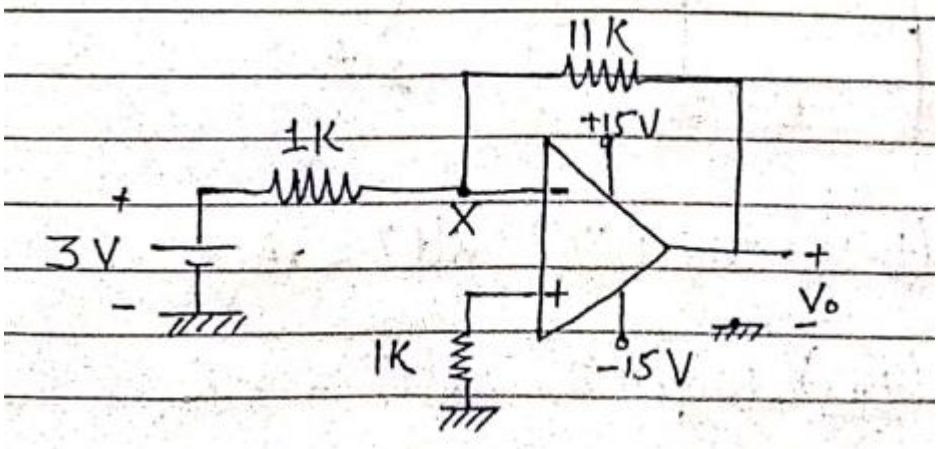
2.4 In Doppler effect, the change in frequency depends on

a) Speeds of source and listener
b) Density of air
c) Half the distance between source and listener
d) Distance between source and observer

2.5 The number of address bits needed to operate a 2K × 8-bit RAM are:

a) 9
b) 25
c) 15
d) 11

2.6 Consider the Op-Amp to be ideal. The voltage at node X, connected to the inverting terminal of the Op-Amp as indicated in the figure is-



a) 0V
b) 1V
c) 3V
d) 1.5V

2.7 Given a MOD-14 ripple counter using J-K flip-flops. If the clock frequency to the counter is 30 KHz, then the output frequency of the counter will be

a) 2.2 KHz
b) 30 KHz
c) 2.14 KHz
d) 3.2 KHz

2.8 Instruction cycle(IC), Fetch Cycle(FC) and Execution Cycle(EC) are related as

a) IC = FC - EC
b) IC = FC + EC
c) IC = FC + 2EC
d) EC = IC+ EC

2.9 For the given binary number "011010". What is the equivalent gray code number?

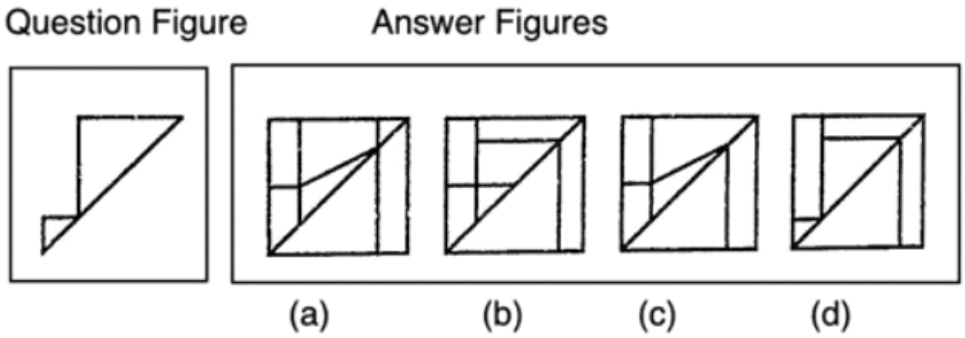
a) 011000
b) 010111
c) 010010
d) 101101

2.10 A device which converts BCD to seven segment is called

a) encoder
b) decoder
c) multiplexer
d) None of these

3 APTITUDE

3.1 Find out that answer figure in which the question figure is embedded



3.2 Ravi walks 8 km North-East and then 6 km South-East. Find the total distance as well as shortest distance between starting and end points.

a) 14 km, 12 km
b) 14 km, 10 km
c) 10 km, 8 km
d) 8 km, 6 km

3.3 If GRASP is code as TIZHK, what will be code as OVTZXB?

a) LEGATE
b) LEAGUE
c) LEGACY
d) LEDGER

3.4 A and B can together complete a task 40 days. They worked together for 30 days and then left. A finished the remaining task in next 22 days. In how many days A alone can finish the task?

a) 88 days
b) 48 days
c) 30 days
d) 40 days

3.5 Excluding the stoppages, the speed of a bus is 54 mph and including the stoppages, it is 45 kmph. For how many minutes does the bus stop per hour?

a) 9
b) 10
c) 20
d) 12

3.6 12, 11, 13, 12, 14, 13……. What number should come next?

a) 10
b) 15
c) 13
d) 16

3.7 A train 125 m long passes a man, running at 5 km/hr in the same direction in which the train is going, in 10 seconds. The speed of the train is:

a) 10 km/hr
b) 50 km/hr
c) 54 km/hr
d) 55 km/hr

3.8 A person crosses a 600 m long street in 5 minutes. What is his speed in km per hour?

a) 3.6
b) 7.2
c) 8.4
d) 10

3.9 In how many different ways can the letters of the word 'LEADING' be arranged in such a way that the vowels always come together?

a) 360
b) 480
c) 720
d) 5040
e) None of these

3.10 A box has 10 bulbs out of which 4 are defective. If 3 bulbs are chosen at random, then find the probability that none of them is defective.

a) 3/10
b) 1/2
c) 1/6
d) 1/4