ENEE 114
TEST 1
FALL 2002-10/17/02
CLOSED BOOK AND NOTES
EXAM PERIOD 75 MINUTES

Instructions:

- Points for each problem are indicated right after the problem. The total score is 100 poi
- Use the space provided below each problem. if you need more space, please ask a proct
- Write your name and student id on the cover sheet.
- Promptly hand in your test to a proctor when the test is over.

Problem 1 (20 points): Write down the output exactly as it will appear on the standard ou
device when you compile and execute the program shown below:

```c
int main(void)
{
    int i=1, j;
    i += i;
    for(j=15; j>=i; j--)
        printf("%d %d\n", i, j);
    return 0;
}
```

Enter your answer in the box below:
Problem 2 (20 points): The partially specified C program on the left generates the output underneath the program. Enter the values of x, y, and z in the box on the right that generate the indicated output.

```c
for (a = 50; a > x;)
    {if (a % y == 0)
     printf("\n");
    a -= z;
    printf("%4d",a);
    }
```

48 46 44 42 40
38 36 34 32 30
28 26 24 22 20
18 16 14 12 10
8 6 4 2 0

Enter your answer in the box:

- x =
- y =
- z =

Problem 3 (20 points): Write down the output exactly as it will appear on the standard output when the program on the left below is compiled and executed.

```c
int main(void)
{
int a = 'c',b = 'd';
int c = 'a',d = 'b';
switch(a)
{
    case 'a': b = 'a'; break;
    case 'b': c = 'a'; break;
    case 'c': d = 'c'; break;
    case 'd': a = 'b'; break;
}
if (a == b)       d = c;
else if(a == c)   c = b;
else if (a == d) b = d;
printf("%c %c %c %c",a,b,c,d);
return 0;
}
```

Enter your answer in the box:
Problem 4 (20 points): Write down the output exactly as it will appear on the standard output when the program on the left below is compiled and executed.

```c
int main (void)
{ function_a(1);
  return 0;
}

int function_a( int p)
{ p = 2*p; printf("%d\n",p);
  function_b(p);
  return 0;
}

int function_b( int q)
{ q = q*2;
  if( q < 20) function_a(q);
  return 0;
}
```

Enter your answer in the box.

Problem 5 (20 points): Write a C program that will read a string of 100 characters from keyboard, and print the message "A digit is found in the string" if the string contains any of the digits 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and print the message "No digit is found in the string" otherwise. Your program should be complete and must not return any errors when it is compiled and executed for full credit.