This question paper contains 4 printed pages.

3342 *Your Roll No.....*

B.Tech. (E&C) / II

J

Paper VI - PROGRAMMING - II
(EEC - 206)

Time : 3 hours *Maximum Marks :70*

(Write your Roll No. on the top immediately on receipt of this question paper.)

Attempt any five questions.
All questions carry equal marks.
Assume missing data, if any.

1 Find the output for the following :

a)
```
main ( )
{ int p, q, x = 10, y = 20;
  p = prod (x, y);
  q = prod (p, prod (x, 2));
  printf ("% d % d \ n", p, q);
}
prod (a, b)
int a, b;
{
  return (a * b);
}
```

b)
```
main ( )
{
  int x = 10, y = 20, z = 5, i;
  i = x < y < z;
  printf ("% d", i );
}
```

P.T.O

c)
```
main ( )
{ static int a[10];
  int i = 0;
  a [i] = i + +;
  printf (" \n % d %d %d", a[0], a[1], i );
}
```

d)
```
main ( )
{ int k, num = 30;
  k = (num > 5 ? (num <= 10 ? 100 : 200) : 500);
  printf (" % d %d", num, k );
}
```

2. WAP to find standard deviation s of given n items given by

$$s = \sqrt{\text{variance}}$$

where variance $= \frac{1}{n} \sum_{i=1}^{n} (x_i - m)^2$ and $m = \frac{1}{n} \sum_{i=1}^{n} x_i$

3. Write a function named prime that returns 1 if its argument is a prime number and returns zero otherwise.

4. Do the following :
   a) What is the difference between malloc ( ) and calloc ( ) functions.

   b) Which header file should be included to dynamically allocate memory using functions like malloc ( ) and calloc ( ) ?

   c) Distinguish between (^A m) [5] and ^A m [5].

   d) State the difference between the declaration of a variable and the definition of a symoblic constant.

e) How would you round off a value 1.66 to 2.0 and truncate 1.75 to 1.0 ?

f) In which order do the Relational, Arithmetic, Logical and Assignment operators get evaluated in C ?

g) Point out the error, if any, in the following function and write it correctly.

```
main ( )
{ int b;
  b = f(20);
  printf (" % d", b );
}
  int f(int a)
{
  a > 20 ? return (10) : return (20);
}
```

5. WAP in C to generate the following sequence
   1, 1, 2, 3, 5, 8, 13, ...
   upto the term such that the sum of the series doe not go beyond given number, say n, which should be read through the keyboard.

6. For a given 10 x 10 matrix, WAP in C to find the biggest number from each row.

7. WAP in C to generate all four digit numbers which are polindromes.

8. Define a structure called cricket that will describe the following information :

player name
team name
batting average

using cricket, declare an array player with 50 elements and WAP to read the information about all the 50 players and print a team - wise list containing names of players with their batting average.