

# Algorithm Development and Programming Fundamentals

## MCA SEM-1

### Problem Solving - II

[A] Point out the errors and correct them, if any, in the following programs. Also write the output/error for the programs, correct them and write their outputs.

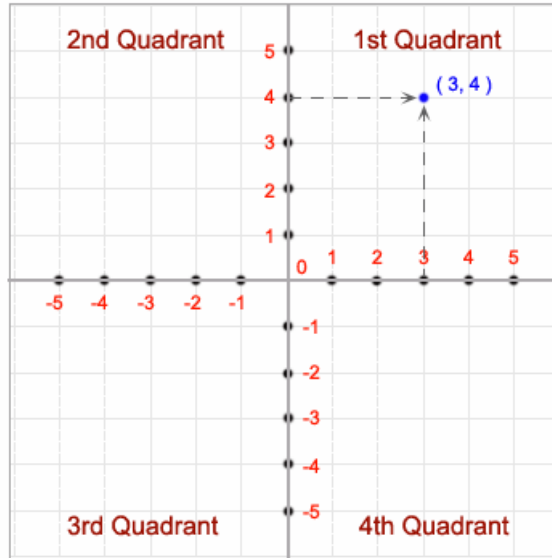
|   |  |   |   |
|---|--|---|---|
| 1 | <pre>#include &lt;stdio.h&gt;  void main( ) {  float a = 12.25, b = 12.52 ;  if ( a = b )  printf ( "\na and b are equal" ) ;  else  printf ( "\na and b are not equal" ) ;  }</pre> | 2 | <pre>#include &lt;stdio.h&gt;  void main( ) {  if ( 'X' &lt; 'x' )  printf ( "\nasci value of X is smaller than that of x" ) ;  }</pre>   |
|   | <b>OUTPUT:</b> _____   |   | <b>OUTPUT:</b> _____  |
| 3 | <pre>#include &lt;stdio.h&gt;  int main( ) {  int j = 10, k = 12 ;  if ( k &gt;= j )  {  {  k = j ;  j = k ;  }  }  }</pre>  | 4 | <pre>#include &lt;stdio.h&gt;  int main( ) {  int x = 30 , y = 40 ;  if ( x == y )  printf( "x is equal to y" ) ;  elseif ( x &gt; y )  printf( "x is greater than y" ) ;  elseif ( x &lt; y )  printf( "x is less than y" ) ;  }</pre> |

|   |   |    |   |
|---|---|----|---|
|   | <b>OUTPUT:</b> _____  |    | <b>OUTPUT:</b> _____  |
| 5 | <pre> #include &lt;stdio.h&gt;  void main( ) {  int a, b ;  scanf ( "%d %d",a, b ) ;  if ( a &gt; b ) ;  printf ( "a is large" ) ;  else  printf ( "b is large" ) ;  } </pre> | 6  | <pre> #include &lt;stdio.h&gt;  void main( ) {  int x = 10 ;  if x &gt;= 2  printf ( "\n%d", x ) ;  } </pre>  |
|   | <b>OUTPUT:</b> _____  |    | <b>OUTPUT:</b> _____  |
| 7 | <pre> #include &lt;stdio.h&gt;  void main( )  {  int i = 2, j = 5 ;  if ( i == 2 &amp;&amp; j == 5 )  printf ( "\nSolved at last" ) ;  } </pre>                               | 8  | <pre> #include &lt;stdio.h&gt;  void main( ) {  int code, flag ;  if ( code == 1 &amp; flag == 0 )  printf ( "\nThe eagle has landed" ) ;  } </pre> |
|   | <b>OUTPUT:</b> _____  |    | <b>OUTPUT:</b> _____  |
| 9 | <pre> #include &lt;stdio.h&gt;  void main( ) {  int x = 10 , y = 20;  if ( x &gt;= 2 and y &lt;=50 )  printf ( "\n%d", x ) ;  } </pre>  | 10 | <pre> #include &lt;stdio.h&gt;  void main( ) {  int i = 10, j = 10 ;  if ( i &amp;&amp; j == 10)  printf ( "\nHave a nice day!!!" ) ;  } </pre>     |

|    |   |    |  |
|----|---|----|--|
|    | <b>OUTPUT:</b> _____  |    | <b>OUTPUT:</b> _____   |
| 11 | <pre> #include &lt;stdio.h&gt;  void main( ) {  int ji = 65 ;  printf ( "\nji &gt;= 65 ? %d : %c", ji ) ;  } </pre>                         | 12 | <pre> #include &lt;stdio.h&gt;  void main( ) {  int i = 10, j ;  i &gt;= 5 ? ( j = 10 ) : ( j = 15 ) ;  printf ( "\n%d %d", i, j ) ;  } </pre> |
|    | <b>OUTPUT:</b> _____  |    | <b>OUTPUT:</b> _____   |
| 13 | <pre> #include &lt;stdio.h&gt;  #define print "%sprintwonders "  int main()  {  int a=1,b=2,c=3;  printf(print,print);  return 0;  } </pre> | 14 | <pre> #include &lt;stdio.h&gt;  int main()  {  int (x)=10;  printf("x= %d",x);  return 0;  } </pre>  |

[B] Exercise

1. Write a C program to accept a coordinate point in a XY coordinate system and determine in which quadrant the coordinate point lies.



2. Write a C program to check whether a triangle is Equilateral, Isosceles or Scalene.

**Equilateral triangle:** An equilateral triangle is a triangle in which all three sides are equal. In the familiar Euclidean geometry, equilateral triangles are also equiangular; that is, all three internal angles are also congruent to each other and are each  $60^\circ$ .

**Isosceles triangle:** An isosceles triangle is a triangle that has two sides of equal length.

**Scalene triangle:** A scalene triangle is a triangle that has three unequal sides, such as those illustrated above.