MATH-101   **Term-131**   **IN-Class-QUIZ-15**

(show all your work and circle one letter to get a full mark or you will get zero)

1)   which one of the following statements is FALSE about the function $f(x) = (x-2)x^2(x+2)$

   (a)   The function f is concave up on the interval $(1,2)$

   (b)   The function f is concave down on $(-0.5, 0.5)$

   (c)   The function f has no inflection point

   (d)   f has only one local maximum

   (e)   The function f is concave up on the interval $(-2,-1)$

   (f)   The function f has local minimum at x $=\sqrt{2}$

   (g)   none of the above

2)

   If the function $f(x) = ax^3 + bx + c$ has a local maximum value of 2 at x=1 then which of the following is TRUE for the function (you may select more than one)

   (a)   abc > 0

   (b)   a + b + c = 0

   (c) f concave up on $(-10,-5)$

   (d) f is increasing on $(-1,-0.5)$

   (e) x=0 is an inflection point.

   (f)   none of the above

3)   If $f(x) = \dfrac{x^3 + 2x^2 -1}{(x+1)^2}$, then an equation of the oblique asymptote for the graph of f is

   (a) $y - x = 0$

   (b) $y - x -1 = 0$

   (c) $y + x = 0$

   (d) $y - x+1 = 0$

   (e) f does not have an oblique asymptote

   (f)   none of the above