

**KING FAHD UNIVERSITY OF PETROLUUM AND MINERALS**  
**Faculty of Science, Prep-Year Math Program**  
**Math 001 - Term 041**  
**Quiz 7 (3.1-3.4) A**

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Name:

ID#:

Sr. #:

Sec.:

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**Show all necessary steps**

**Part I: MCQ**

**(6 points)**

**Circle the Correct answer**

1. The far left and far right behavior of the graph of the polynomial

$$P(x) = -2x(x+3)(x-1)^2(2-x)^3$$

are one of the following:

- a) goes down to its far left and up to its far right
- b) goes up to its far left and up to its far right
- c) goes up to its far left and down to its far right
- d) goes down to its far left and down to its far right
- e) non of the above

2. The polynomial  $P(x) = 2x^5 - x^2 - 3x + 5$  has the following numbers of negative real zeros:

- a) 2
- b) 3
- c) 1
- d) 4
- e) 0

3. If  $P(x) = x^{105} - x^{10} - 2x + 1$  is divided by  $x - i$ , then the remainder is

- a)  $2 + 2i$
- b)  $2 + i$
- c)  $i$
- d)  $2 - i$
- e)  $-2 + i$

## Part II: Written Part

1. If  $x = -2$  is a zero with multiplicity 2 of the polynomial

$$P(x) = 3x^4 + 6x^3 - 6x^2 + Ax + B, \text{ then find the value of } A \text{ and } B.$$

**(4 points)**

2. Find the equation of the polynomial  $P(x)$  of degree 4 that has the graph given below given below.

**(3 points)**



3. If  $P(x) = 2x^4 + 3x^3 + 2x^2 - 3x - 4$ , then

a) determine the  $x$  - intercept(s) of the graph of  $P$ . **(3 points)**

b) write  $P(x)$  in the factored form. **(2 point)**

c) determine where the graph of  $P$  will cross the  $x$  - axis and where the graph will intersect but does not cross the  $x$  - axis. **(2 points)**