

**DISCRETE MATHEMATICS (DBM2033)**

**Session December 2017**

**SELF-EXERCISE 5**

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Instructions

- Answer ALL questions. Write your answers in the spaces provided.
  - Show your working. You may use a non-programmable scientific calculator.
1. If  $A = \{\text{Counting numbers between 30 and 40}\}$  and  $B = \{\text{Counting numbers between 20 and 50 which are divisible by 4}\}$ . Find
    - (a)  $A - B$
    - (b)  $B - A$
  2. Given  $A = \{4, 8, 12, 16, 20\}$ ,  $B = \{2, 4, 6, 8, 10, 12, 14, 16, 18, 20\}$  and  $C = \{a, b, c, d, e\}$ . State, TRUE or FALSE:
    - (a)  $n(A) = n(C)$
    - (b)  $n(A) = n(B)$
    - (c)  $n(B) - n(C) = n(A)$
    - (d)  $n(B) = 2 \cdot n(C)$
  3. Let  $A$  be the set of letters of the word FOLLOW. Find
    - (a)  $A$
    - (b)  $n(A)$
    - (c) Number of subsets of  $A$
    - (d) Number of proper subsets of  $A$
  4. Given  $A = \{\text{banana, orange, apple}\}$ . Find the power set of  $A$ .