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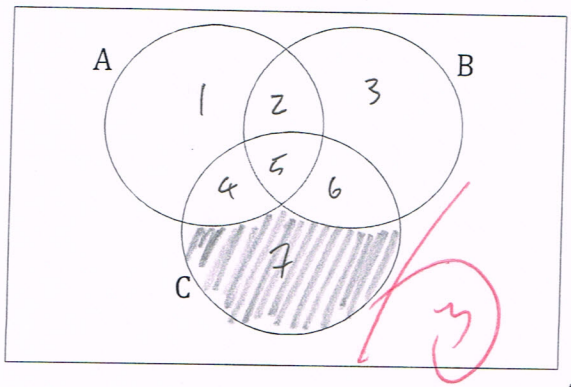
0500T17F2026

Question 1 (CLO1, C2)

Shade in the set $(A \cup B') \cap (C \cap A')$

[3 marks]

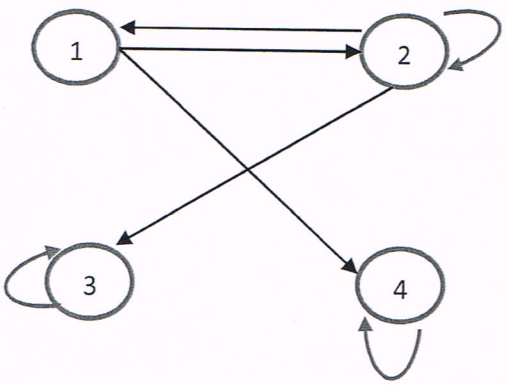


$A = \{1, 2, 4, 5\}$
$B = \{2, 3, 5, 6\}$
$C = \{4, 5, 6, 7\}$
$(A \cup B') \cap (C \cap A')$
$= (1, 2, 4, 5 \cup 1, 4, 7) \cap \{4, 5, 6, 7\}$
$= (1, 2, 4, 5, 7 \cap 6, 7)$
$= 7$

Question 2 (CLO1, C2)

The following digraph shows the relation R on a set $\{3, 4, 5, 6\}$.

$\{1, 2, 3, 4\}$



$R = \{(1,2), (2,1), (2,2), (2,3), (3,3), (1,4), (4,4)\}$

(a) Write the ordered pairs of relation R.

[3 marks]

(b) Is the R an equivalence relation or not?

[4 marks]

a)

relation $R = \{(1,2), (2,1), (2,2), (2,3), (3,3), (1,4), (4,4)\}$

b)

R is not an equivalence relation, because R is not a reflexive by 2R2, 3R3, 4R4 but 1R1, R is not a symmetric by 2R3 but 3R2, R is not a transitive by 1R2, 2R1 but 1R1.