

q2)

$$(a) \quad A - \{1\}$$

$$B - \{1, 2, 3\}$$

$$C - \{3\}$$

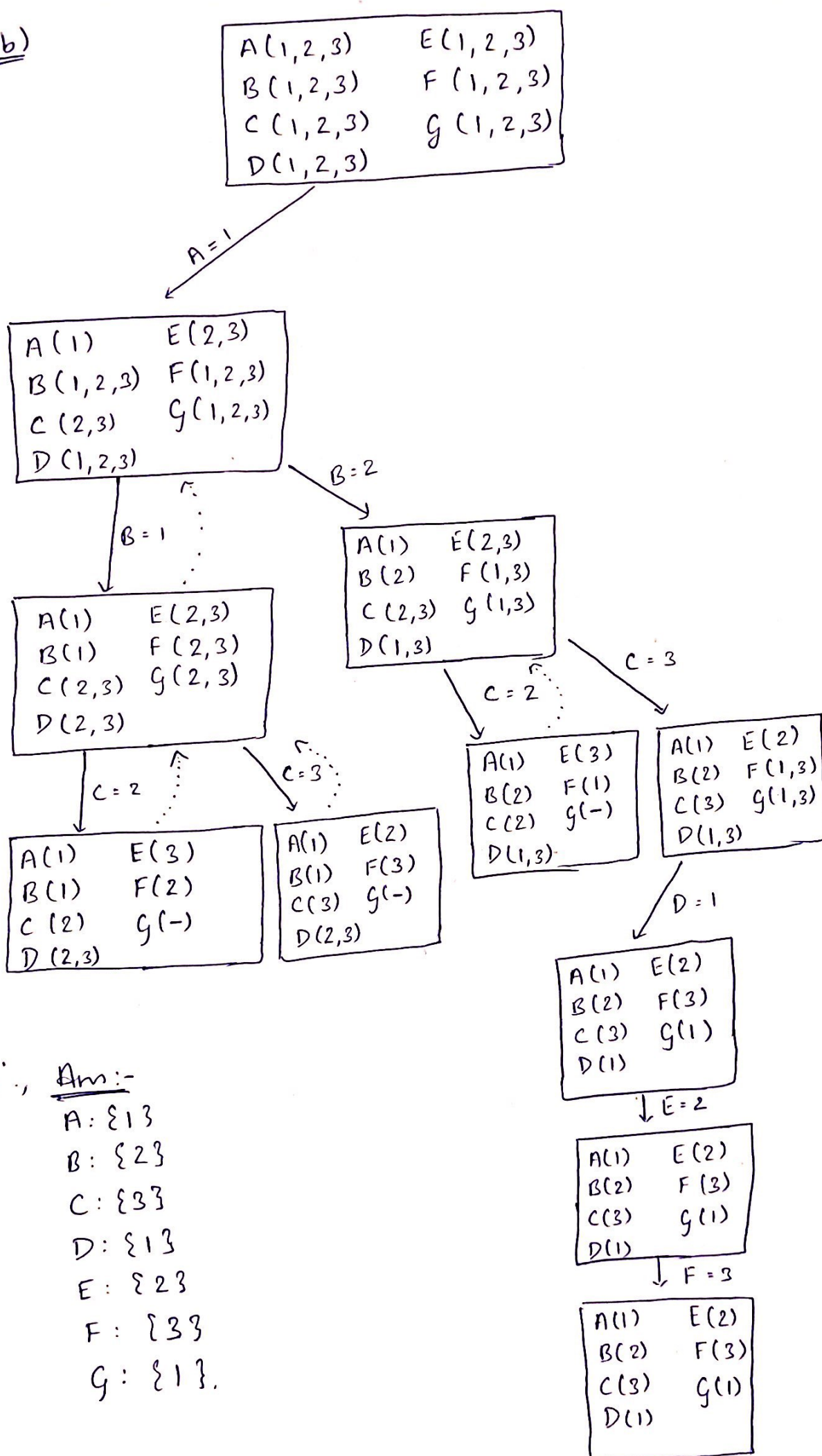
$$D - \{1, 2, 3\}$$

$$E - \{2\}$$

$$F - \{1, 3\}$$

$$G - \{1, 3\}$$

b)



(c) When we solve this question using the AC-3 algorithm, the domain of some of the variables becomes empty, hence, no consistent solution is possible.

So, depending on which arc, we choose in any order, the domains look like:-

- ①  $A=1, B=1, C=2, D=(2,3), E=3, F=(), G=2.$
- ②  $A=1, B=1, C=2, D=(2,3), E=3, F=2, G=().$
- ③  $A=1, B=1, C=2, D=(3), E=3, F=2, G=().$
- ④  $A=1, B=1, C=2, D=(1,2,3), E=3, F=(), G=2.$
- ⑤  $A=1, B=1, C=2, D=(1,2,3), E=3, F=2, G=().$

∴, now we see that there is no outcome in which all variables have domains assigned without violating any constraints. Hence, there is no consistent solution for this problem.

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