

Question: Which of the following (w.o.t.f) is a possible.

- (a) $\exists A$ st $P(A) = \emptyset$ X
- (b) $\exists A$ st $P(A) = \{\emptyset\}$
- (c) $\exists A$ st $P(A) = \text{finite}$
- (d) $\exists A$ st $P(A) \neq \text{Countable}$
- (e) $\exists A$ st $P(A)$ is uncountable.

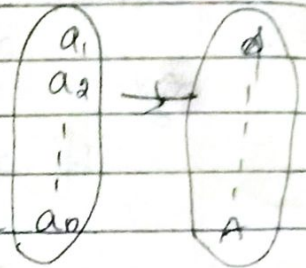
$$\# A = n \quad \# P(A) = 2^n$$

Sol. (a) $\because \forall A, \emptyset \subseteq A$

$\Rightarrow \emptyset \in P(A)$ so $P(A) \neq \emptyset$

(b) Let $A = \emptyset$ then $P(A) = \{\emptyset\}$

(c) $A = \{1\} \Rightarrow P(A) = \{\emptyset, \{1\}\} = \text{finite}$



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