

SETS**POWER SETS****EXERCISE**

(For competitive exam)

- Q.1** Which among the following is not a member of the power set of $\{2, 3\}$?
- (a) Φ (b) $\{2\}$
(c) $\{\{2,3\}\}$ (d) $\{2,3\}$
- Q.2** If a set A contains 3 elements, determine the number of elements in the power set of set A.
- (a) 1 (b) 2
(c) 8 (d) 27
- Q.3** If set $A = \{1, 2, 3\}$, which of the following statements is inaccurate?
- (a) $\Phi \in A$ (b) $\Phi \in P(A)$
(c) $\Phi \subset A$ (d) $\Phi \subset P(A)$
- Q.4** If set $X = \{2, 3, 5, 7\}$, then the cardinality of the power set $P(X)$ is _____.
- (a) 8 (b) 16
(c) 32 (d) 64
- Q.5** How many elements are in the power set $P(A)$ when $A = \varphi$?
- (a) 1 (b) 2
(c) 3 (d) 4
- Q.6** If $A = \{a, b, c\}$ then the power set $P(A)$ is $\{\{a\}, \{b\}, \{c\}, \{a, b\}, \{b, c\}, \{a, c\}, \{a, b, c\}\}$.
- (a) True
(b) False
- Q.7** If $X = \{1,2\}$ then $P(X) = \{\varphi, \{1\}, \{2\}, \{1,2\}\}$.
- (a) True
(b) False

- Q.8** The number of elements in the power set of $\{0, 1, 2, \dots, 6\}$ is _____.
(a) 1024 (b) 4096
(c) 512 (d) 128
- Q.9** If a set $A = \{x: x \text{ is a prime number less than } 4\}$ then $n[P(P(A))]$ is _____.
(a) 8 (b) 16
(c) 32 (d) 64
- Q.10** If set $A = \{\Phi\}$ then the power set $P(A)$ is _____.
(a) $\{\Phi\}$ (b) $\{\{\Phi\}\}$
(c) $\{\Phi, \{\Phi\}\}$ (d) Φ

ANSWER KEY

1. (c)
2. (c)
3. (a)
4. (b)
5. (a)
6. (b)
7. (a)
8. (d)
9. (b)
10. (c)