



INDIAN SCHOOL AL WADI AL KABIR

Class XI, Applied Mathematics (241)

SETS

16-08-2022

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|-------------|--|---|----------|-----------------|----------|---|----------|---------------|
| Q.1. | A = {x: x is an integer neither positive nor negative}, then A is | | | | | | | |
| | A | an empty set | B | a non-empty set | C | Finite set | D | Both B & C |
| Q.2. | Number of elements in the power set of {a, b}, where a and b are distinct elements. | | | | | | | |
| | A | 1 | B | 4 | C | 3 | D | 2 |
| Q.3. | A = { \emptyset , { \emptyset }, 2, {2, \emptyset }, 3}, which of the following is true. | | | | | | | |
| | A | { \emptyset , { \emptyset } } \in A | B | {2} \in A | C | $\emptyset \subset A$ | D | 3 \subset A |
| Q.4. | Power set of an empty set has exactly _____ subset | | | | | | | |
| | A | 1 | B | 2 | C | 3 | D | 0 |
| Q.5. | In which of the following sets A- B is equal to B – A | | | | | | | |
| | A | A = {1, 2, 3}, B = {2, 3, 4} | | | B | A = {1, 2, 3}, B = {1, 2, 3, 4} | | |
| | C | A = {1, 2, 3}, B = {2, 3, 1} | | | D | A = {1, 2, 3, 4, 5, 6}, B = {2, 3, 4, 5, 1} | | |
| Q.6. | What is the Cardinality of the Power set of the set {0, 1, 2}. | | | | | | | |
| | A | 6 | B | 7 | C | 8 | D | 9 |
| Q.7. | If A has 4 elements B has 8 elements then the minimum and maximum number of elements in A \cup B are respectively | | | | | | | |
| | A | 4, 8 | B | 8, 12 | C | 4, 12 | D | None of these |
| Q.8. | . If A is {{ \emptyset }, { \emptyset , { \emptyset }}, then the power set of A has how many element? | | | | | | | |
| | A | 1 | B | 2 | C | 3 | D | 4 |
| Q.9. | Two sets A and B contains 'a' and 'b' elements respectively. If power set of A contains 16 more elements than that of B, value of 'b' and 'a' are respectively | | | | | | | |
| | A | 4, 5 | B | 5, 6 | C | 5, 4 | D | 6, 5 |

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|----------------|---|----|-----------|----|-----------|----|-----------|----|
| Q.10. | If $n(A)=20$ and $n(B)=30$ and $n(A \cup B) = 40$ then $n(A \cap B)$ is | | | | | | | |
| | A | 40 | B | 30 | C | 20 | D | 10 |
| Q11. | If $A = \{x: x \in \mathbb{N}, x \text{ is a factor of } 6\}$ and $B = \{x: x \in \mathbb{N}, x \text{ is a factor of } 8\}$ then find (i) $A - B$, (ii) $B - A$. | | | | | | | |
| Q12. | Let $U = \{1, 2, 3, 4, 5, 6, 7, 8\}$; $A = \{1, 2, 3, 4\}$; $B = \{3, 4, 6\}$; $C = \{5, 6, 7, 8\}$, find: (i) $A - (B \cup C)$ (ii) $A \cap C'$ (iii) $B' \cap C'$ (iv) $B' \cup A'$ (v) $A - (B \cup C)'$ | | | | | | | |
| Q13. | In a certain town, 25% of the families own a phone. 15% own a car and, 65% families own neither a phone nor a car. 2000 families own both a car and a phone. Find how much percentage of families own either a car or a phone. Also, find how many families live in the town. | | | | | | | |
| Q14. | In a class of 35 students, 17 have taken Mathematics, 10 have taken Mathematics but not Economics. If each student has taken either of the two subjects, then find the number of students who have taken Economics but not Mathematics. | | | | | | | |
| Q15. | In a survey of 25 students, it was found that 12 have taken Physics 11 have taken Chemistry and 15 have taken Mathematics 4 have taken Physics & chemistry and 9 have taken Physics and Mathematics 5 have taken Chemistry and Mathematics while 3 have taken all the three subjects. Find the numbers of students who have taken. (i) Physics only. (ii) Chemistry only. (iii) Mathematics only. (iv) Physics and Chemistry but not Mathematics. (v) Physics and Mathematics but not Chemistry. (vi) Only one of the subjects. (vii) At least one of the three subjects. (viii) None of the three subjects | | | | | | | |
| ANSWERS | 1. | D | 2. | B | 3. | C | 4. | A |
| | 5. | C | 6. | C | 7. | B | 8. | D |
| | 9. | A | 10 | D | 11 | | | |
