*** Choose the right answer from the given options. [1 Marks Each]** **[20]**

1. In an examination 70% students passed both in Mathematics and Physics 85% passed in Mathematics and 80% passed in Physics If 30 students have failed in both the subjects then the total number of students who appeared in the examination is equal to:
   (A) 900 (B) 600 (C) 150 (D) 100
2. Choose the correct answers from the given four option:
   Let R be set of points inside a rectangle of sides a and b (a, b > 1) with two sides along the positive direction of x-axis and y-axis. Then
   (A) R = {(x, y) : 0 ≤ x ≤ a, 0 ≤ y ≤ b}.
   (B) R = {(x, y) : 0 ≤ x < a, 0 ≤ y ≤ b}.
   (C) R = {(x, y) : 0 ≤ x ≤ a, 0 < y < b}.
   (D) R = {(x, y) : 0 < x < a, 0 < y < b}.
3. Let S = {2, 4, 6, 8,.....20}. What is the maximum number of subsets does S have?
   (A) 10 (B) 20 (C) 512 (D) 1024
4. Which of the following has only one subset?
   (A) {0,1} (B) {1} (C) {0} (D) {}
5. If Y ∪ {1, 2} = {1, 2, 3, 5, 9}, then:
   (A) The smallest set of Y is {3, 5, 9}
   (B) The smallest set of Y is {2, 3, 5, 9}
   (C) The largest set of Y is {1, 2, 3, 5, 9}
   (D) The largest set of Y is {2, 3, 4, 9}
6. All the students of a batch opted Psychology, Business, or both. 73% of the students opted Psychology and 62% opted Business. If there are 220 students, how many of them opted for both Psychology and business?
   (A) 60 (B) 100 (C) 77 (D) 35
7. Find the equivalent set for A − B.
   (A) $A \cup (A \cap B)$ (B) $A - B$ (C) $A - (A \cap B)$ (D) $A \cap B$
8. Choose the correct answers from the given four option:
   Let S = set of points inside the square, T = the set of points inside the triangle and C = the set of points inside the circle. If the triangle and circle intersect each other and are contained in a square. Then
   (A) $S \cap T \cap C = \phi$ (B) $S \cup T \cup C = C$ (C) $S \cup T \cup C = S$ (D) $S \cup T = S \cap C$
9. For any two sets A and B, $A \cap (A \cup B)'$ is equal to:
   (A) A (B) B (C) ϕ (D) $A \cap B$.
10. If A ⊂ B, then A ∩ B is:
    (A) B (B) $\frac{A}{B}$ (C) A (D) $\frac{B}{A}$
11. In last quadrant?

(A) X < 0, Y > 0 (B) X < 0, Y < 0 (C) X > 0, Y < 0 (D) X > 0, Y > 0

12. In a community of 175 persons, 40 read the Times, 50 read the Samachar and 100 do not read any. How many persons read both the papers?
(A) 10 (B) 15 (C) 20 (D) 25

13. For any two sets A and B, A - $\mathrm{B} \cup \mathrm{B} = \mathrm{A} =$
(A) $(\mathrm{A}$ - $\mathrm{B}) \cup \mathrm{A}$ (B) $(\mathrm{B}$ - $\mathrm{A}) \cup \mathrm{B}$
(C) $(\mathrm{A} \cup \mathrm{B}) - (\mathrm{A} \cap \mathrm{B})$ (D) $(\mathrm{A} \cup \mathrm{B}) \cap (\mathrm{A} \cap \mathrm{B})$.

14. If A = {1, 2, 3, 4, 5, 6}, B = {2, 4, 6, 8}, then A - B will be:
(A) {1, 3, 5, 8} (B) {1, 3, 5}
(C) {1, 2, 3, 4, 5, 6, 8} (D) = {}

15. The symmetric difference of A and B is not equal to:
(A) $(\mathrm{A} - \mathrm{B}) \cap (\mathrm{B} - \mathrm{A})$ (B) $(\mathrm{A} - \mathrm{B}) \cup (\mathrm{B} - \mathrm{A})$
(C) $(\mathrm{A} \cup \mathrm{B}) - (\mathrm{B} \cap \mathrm{A})$ (D) $\{(\mathrm{A} \cup \mathrm{B}) - \mathrm{A}\} \cup \{(\mathrm{A} \cup \mathrm{B}) - \mathrm{B}\}$.

16. If A = {x, y} then the power set of A is:
(A) {xx, yy} (B) {f, x, y}
(C) {f, {x},{2y}} (D) {f, {x},{y},{x, y}}

17. The sets Sx are defined to be (x, x + 1, x + 2, x + 3, x + 4) where x = 1, 2, 3,.....80. How many of these sets contain 6 or its multiple?
(A) 65 (B) 66 (C) 59 (D) 60

18. In an examination, 34% of the candidates fail in Arithmetic and 42% in English.If 20% fail in Arithmetic and English, the percentage of those passing in both subjects is:
(A) 44 (B) 45 (C) 46 (D) 47

19. n a class of 55 students, the number of students studying different subjects are 23 in Mathematics and 24 in Physics, 19 in Chemistry, 12 in Mathematics and Physics, 9 in Mathematics and Chemistry, 7 in Physics and Chemistry and 4 in all the three subjects, The number of students who have taken exactly one subject is:
(A) 20 (B) 24 (C) 23 (D) 22

20. In set-builder method the null set is represented by:
(A) {} (B) ϕ (C) $\{\mathrm{x} : \mathrm{x} \neq \mathrm{x}\}$ (D) $\{\mathrm{x} : \mathrm{x} = \mathrm{x}\}$.

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