CLASS XI HOME ASSIGNMENTS CHATER SET

1

If a set A has elements, then the total number of subsets of A is

(a)  (b) 

(c)  (d) 

2. Sets A and B have 3 and 6 elements respectively. What can be the minimum number of the elements AB ?

(a) 3 (b) 6

(c) 9 (d) 18

3. In a certain town 25% families own a phone and 15% own a car, 65% families own neither a phone nor a car. 2000 families own both a car and a phone.

Consider the following statements in this regard :

1. 10% families own both a car and a phone
2. 35% families own either a car or a phone.
3. 40,000 families live in the town.

Which of the above statements are correct?

1. 1 and 2 (b) 1 and 3

(c) 2 and 3 (d) 1, 2 and 3

4. If, then 

(a)  (b) 

(c)  (d) 

5. The shaded region in the given figure is

1.  (b) 

(c)  (d) 

6. If , then the number of functions that can be defined from A onto B is

(a) 3 (b) 6

(c) 8 (d) 12

7. Set A has 3 elements and set has 4 elements. The number of injections (one-one mappings) that can be defined from A to B is

(a) 144 (b) 12

(c) 24 (d) None of these

8. If  then the number of onto mappings or surjection that can be defined from {1, 2, 3, ……} onto {1, 2} is

(a)  (b) 

(c)  (d) 

If A and B are any two sets, then what is the value of ?

(a) Complement of A (b) Complement of B

(c) B (d) A

10. Let A = {x:x is a square of a natural number and x is less than 100} and B is a set of even natural numbers. What is the cardinality of 

(a) 4 (b) 5

(c) 9 (d) None of these

11 Let U = { be the universal set, N being the set of natural numbers. If A ={1,2,3,4} and B={2,3,6,10} then what is the complement of (A-B)?

(a) {6,10} (b) {1,4}

(c) {2,3,5,6,7,8,9,10} (d) {5,6,7,8,9,10}

12 Which one of the following is a null set?

(a) {0} (b) {{{}}}

(c) {{}} (d) {x|x2+1=0,x}

13 If A is a subset of B, then which of the following is correct?

(a)  (b) 

(c)  (d) 

14 If A = {1,3,5,7}, then what is the cardinality of the power set P(A)?

(a) 8 (b) 15

(c) 16 (d) 17

15 Consider the following

i. 

ii. 

Which of the above statement(s) is/are correct?

(a) Only I (b) Only ii

(c) i and ii (d) Neither i nor ii

16 In a group of 50 people, two tests were conducted, one for diabetes and one for blood pressure. 30 people were diagnosed with diabetes and 40 people were diagnosed with high blood pressure. What is the minimum number of people who were having diabetes and high blood pressure?

(a) 0 (b) 10

(c) 20 (d) 30

17 In a class of 60 students, 45 students like music, 50 students like dancing, 5 students like neither. Then, the number of students in the class who like both music and dancing, is

(a) 35 (b) 40

(c) 50 (d) 55

18. Let A = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}. Then, the number of subsets of A containing exactly two element is

(a) 20 (b) 40

(c) 45 (d) 90

19. If A = {x : x is a multiple of 3} and B ={x : x is a multiple of 12}, then which one of the following is a null set?

(a)  (b) 

(c)  (d) 

20. What is the number of natural numbers less than or equal to 1000 which are neither divisible by 10 nor 15 nor 25?

(a) 860 (b) 854

(c) 840 (d) 824

22. Total number of elements in the power set A containing 15 elements is

(a) 215 (b) 152

(c) 215-1 (d) 215-1

23. What is the number of proper subsets of a given finite set with n elements?

(a) 2n-1 (b) 2n-2

(c) 2n-1 (d) 2n-2

24. If the cardinality of a set A is 4 and that of a set B is 3, then what is the cardinality of the set 

(a) 1 (b) 5

(c) 7 (d) Cannot be determined

25. Let n(U) = 700 , n(A)=200, n(B)=300, , then is equal to

(a) 400 (b) 600

(c) 300 (d) None of these

26. In a college of 300 students, every student reads 5 newspapers and every newspaper is read by 60 students. The number of newspapers is

(a) At least 30 (b) At most 20

(c) Exactly 25 (d) None of these

Directions (Q. Nos. 18-19) .Consider the function 

27. How many solutions does the function  have ?

(a) One (b) Two

(c) Three (d) Four

28. How many solutions does the function  have?

(a) One (b) Two

(c) Three (d) Four

29. What is the range of the function  where 

(a) [0,1) (b) [0,1]

(c) (0,1) (d) (0,1]

30 Suppose there is relation \* between the positive numbers x and y given by x\*y if and if only if xy2. Then which one of the following is correct?

(a) \* is reflexive but not transitive and symmetric

(b) \* is transitive but not reflexive and symmetric

(c) \* is symmetric and reflexive but not transitive

(d) \* is symmetric but not reflexive and transitive

31. If A = {1,2,5,6} and B = {1,2,3}, then what is equal to?

(a) {(1,1), (2,1), (6,1), (3,2)} (b) {(1,1), (1,2), (2,1), (2,2)}

(c) {(1,1), (2,2)} (d) {(1,1), (1,2), (2,5), (2,6)}

32. Which of the following is correct?

(a) 

(b) 

(c) 

(d) 

33. If, then  is equal to

(a)  (b) 

(c)  (d) 

34. If then  is equal to

(a)  (b) 

(c)  (d) 

35. Which one of the following functions,  is injective?

(a)  (b) 

(c)  (d) 

36 The domain of the function  is

(a)  (b) 

(c)  (d) None of these

37. The period of the function  is

(a) π/2 (b) π

(c) 2π (d) π/4

38. The domain of the function  is

(a)  (b) 

(c)  (d) None of these

39. The function  is

(a) An even function (b) An odd function

(c) Periodic function (d) None of these

40. The value of b and c for which the identity  is satisfied, where , are

(a) b=2, c=1 (b) b=4,c=-1

(c) b=-1,c=4 (d) None of these

41. The function defined by  is

(a) One-one and onto (b) Many-one and into

(c) One-one and onto (d) Many-one and onto

42. The children 'has the same father as' over the set of children is

(a) Only reflexive (b) Only symmetric

(c) Only transitive (d) An equivalence relation

43. What is the range of the function: 

(a) Set of all real numbers (b) Set of all integers

(c) {-1,1} (d) {-1,0,1}

44. If A is a finite set having n elements, then the number of relations which can be defined in A is

(a) 2n (b) n2

(c)  (d) nn

45. What is the value of 1 + i2 + i4 + i6 + …….+ i100, where i =  ?

(a) 0 (b) 1

(c) -1 (d) None of these

46.  is equal to

(a) 1 (b) 2

(c) 3 (d) 0

47. Evaluate

(a) 2(1-i) (b) 7(i-1)

(c) 2-7i (d) 8i+4

48 If , then  is equal to

(a) z (b) z2

(c) z3  (d) None of these

49. The argument of  is

(a) π/6 (b) π/4

(c) π/3 (d) None of these

50. If x2 + y2 =1 , then what is equal to?

(a) x-iy (b) x+iy

(c) 2x (d) -2iy

51. What is the conjugate of 

1.  (b) 
2.  (c) 

52. If where , then what is the value of A?

(a) -8 (b) 0

(c) (d) 8

53. If , then which of the following is correct?

(a) The real part of z is zero

(b) The imaginary part of z is zero

(c) The real part of z is equal to imaginary part of z

(d) The sum of real and imaginary parts of z is z