10TH MATHS MCQS TEST CHAPTER 1 & 2

1) If n(A x B) = 6 and A = {1,3} then n(B) is

(a) 1 (b) 2 (c) 3 (d) 6

2) A = {a,b,p}, B = {2,3}, C = {p,q,r,s} then n[(A U C) x B] is

(a) 8 (b) 20 (c) 12 (d) 16

3) If A = {1, 2}, B = {1, 2, 3, 4}, C = {5, 6} and D = {5, 6, 7, 8} then state which of the following statement is true..

(a) (A x C) ⊂ (B x D) (b) (B x D) ⊂ (A x C) (c) (A x B) ⊂ (A x D) (d) (D x A) ⊂ (B x A)

4) If there are 1024 relations from a set A = {1, 2, 3, 4, 5} to a set B, then the number of elements in B is

(a) 3 (b) 2 (c) 4 (d) 8

5) The range of the relation R = {(x, x^2) |x is a prime number less than 13} is

(a) {2,3,5,7} (b) {2,3,5,7,11} (c) {4,9,25,49,121} (d) {1,4,9,25,49,121}

14) If g = {(1,1), (2,3), (3,5), (4,7)} is a function given by g(x) = αx + β then the values of α and β are

(a) (-1,2) (b) (2,-1) (c) (-1,-2) (d) (1,2)

15) f(x) = $(x + 1)^3 - (x - 1)^3$ represents a function which is

(a) linear (b) cubic (c) reciprocal (d) quadratic

16) If f : R⟶R is defined by (x) = x^2 + 2, then the preimage 27 are _____

(a) 0.5 (b) 5, -5 (c) 5, 0 (d) $\sqrt{5}, -\sqrt{5}$

17) $(x - \frac{1}{x}) = x^2 + \frac{1}{x^2}$ then f(x) =

(a) x^2 + 2 (b) $x^2 + \frac{1}{x^2}$ (c) x^2- 2 (d) $x^2 - \frac{1}{x^2}$

18) Let f(x) = x^2 - x, then f(x- 1) - (x + 1) is _____

(a) 4x (b) 2-2x (c) 2-4x (d) 4x-2

26) If n(A) = p, n(B) = q then the total number of relations that exist between A and B is _____

(a) pq (b) 2^{pq} (c) q^p (d) p^q

27) If f(x) = 2 - 3x, then f o f(1 - x) = ?

(a) 5x+9 (b) 9x-5 (c) 5-9x (d) 5x-9

28) If f(x) + f(1 - x) = 2 then $f\left(\frac{1}{2}\right)$ is _____

(a) 5 (b) -1 (c) -9 (d) 1

63) Functions are subsets of _____.

(a) Relation (b) Cartesian Product (c) Range (d) Function

64) If f:N-R is defined by $f(n)=2^n$,then the range of the function is

(a) Set of all even positive integers (b) N (c) R

(d) A subset of set of all even positive integers

4) The sum of the exponents of the prime factors in the prime factorization of 1729 is

(a) 1 (b) 2 (c) 3 (d) 4

5) The least number that is divisible by all the numbers from 1 to 10 (both inclusive) is

(a) 2025 (b) 5220 (c) 5025 (d) 2520

6) $7^{4k} \equiv$ _____ (mod 100)

(a) 1 (b) 2 (c) 3 (d) 4

7) Given $F_1 = 1$, $F_2 = 3$ and $F_n = F_{n-1} + F_{n-2}$ then F_5 is

(a) 3 (b) 5 (c) 8 (d) 11

17) Three numbers a, b and c will be in A.P. if and only if _____

(a) 2a = b + c (b) 2b = a + c (c) 2c = a + b (d) none of these

18) The Average of first 100 natural numbers is _____

(a) 5055 (b) 5050 (c) 5550 (d) 5150

19) -74 = _____ (mod 7)

(a) 4 (b) 3 (c) -4 (d) 1

20) If t_n is the n^{th} term of A.P, then $t_{2n} - t_n$ is _____.

(a) 2nd (b) nd (c) a+nd (d) 2a+2nd

42) HCF of two equal positive integers k, k is _____

(a) k (b) 1 (c) 0 (d) none of the above

43) Euclid's division lemma cail be used to find the _____ of any two positive integers

(a) HCF (b) Multiples (c) Both (d) None of these

44) Euclid's division lemma is not applicable for which values of b?

(a) Positive integer (b) Zero (c) Negative integer (d) All of these

45) Using Euclid's division lemma HCF of 455 and 42 canbe expressed as_____

(a) 455 = 42 x 9 + 77 (b) 455 = 42 x 10 + 35 (c) 455 = 42 x 11 - 7 (d) 455 = 42 x 12 - 49