Ques 1. The global maximum value of function f (x) = sin x + cos x, x ∈ [0, π] = _____.

Ans. √2

Ques 2. If x = a(1– cosθ), y = a(θ + sinθ), then dy/dx= _____.

Ans. cotθ/2

Ques 3. ∫ [(e2x- 1) / (e2x + 1)] dx = _____ + C

Ans. log (e2x + 1)- x

Ques 4. ∫ ex [(1 + sin x)/ (1- sin x)] dx = _____ + C

Ans. extan x/2

Ques 5. ∫ [1 / (4x- x2)1/2] dx = _____ + C

Ans. Sin-1((x- 2) / 2)

Ques 6. If | (2017 2018), (2019 2020) | + | (2021 2022), (2023 2024) | = 2k, so k 3 = _____.

Ans.-8

Ques 7. If the area of △PQR with vertices P (k, 1), Q (2, 4) and R (1, 1) is 3 square units, then k = _____.

Ans.- 1, 3

Ques 8. If A = [(0 0-1), (0-1 0), (-1 0 0)] then I + A 2 = _____.

Ans. 2I

Ques 9. f the value of cosα is _____, then A + A' = I. where A = [(sinα-cosα), (cosα sinα)]

Ans. √3/2

Ques 10. If A is a square series such that A 2 = A, then (I- A) 3- (I + A) 2 = _____.

Ans. 2(I- 2A)

Ques 11. sin-1 (sin23π/6) = _____.

Ans.- p/6

Ques 12. The value of tan-1(-1) + sec-1(-2) + sin-1(1/√2) is _____.

Ans. 2p/3

Ques 13. If y = tan-1 x then _____. Ans.- $\pi/2 \le y \le \pi/2$

Ques 14. If f : Z → Z, f(x) = x 3 + 2 is defined, then the function f _____.

Ans. One-by-one

Ques 15. The relation R = {(a, a), (b, b), (c, c) (a, c)} defined on the set {a, b, c} is _____.

Ans. spontaneous, traditional, but not conformist.

Ques 16. If P(B) ≠ 0 and P(A | B) = 1 for two events A and B, then _____.

Ans. B ⊂ C

Ques 17. If a pair of dice is thrown, the probability of getting an even prime number on each die is _____.

Ans. 1/36

Ques 18. Given events A and B are absolute and P(A) = p, P(B) = 1/2 and P(A ∪ B)=3/5, the value of p is _____.

Ans. ⅕

Ques 19. If x + y ≤ 55 and x + y ≥ 10, x ≥ 0, y ≥ 0 the minimum value of the objective function z = 7x + 3y

Ans. Solution region is not feasible, so not found.

Ques 20. If the vertices of the finite feasible solution region are (0, 6), (3, 3), (9, 9), (0, 12), then the maximum value of the objective function z = 6x +12y_____.

Ans. 162