ASSIGNMENT 2

Q1. Every basic feasible solution of a L.P.P. is an _____ ?
Q2. Can cones be bounded?
Q3. In simplex method what is the condition to check if a current basic feasible solution is optimal or not?
Q4. Suppose the primal has feasible point but the dual has no feasible point . Then what can you conclude about the optimal value of the primal problem?
Q5. In Newton's method when the matrix $JF(x, y, s)$ is invertible?
Q6. Algorithm of IP type takes _____ time.
Q7. Let $u, v \in \mathbb{R}^n$ with $u^t v \geq 0$ then $\|uv\| \leq - - \|u + v\|^2$.
Q8.What are the values of σ_k for Predictor and Corrector step?
Q9. Which path following algorithm uses the biggest nbd of points?
Q10. Can any convex optimization problem be considered as an LP problem?
Q11. S^n is the set of all real $n \times n$ symmetric matrices .For which value of k $S^n \approx \mathbb{R}^k$?
Q12. Is the SDP is an LP? Give logic.
Q13. The dual of an SDP is ——.
Q14. Does the strong duality held in general between SDP and DSDP?
Q15. Let $x, z \in S^m_+$, then $\langle x, z \rangle \Rightarrow \ xz =$——?
Q16. Is dual of an IP problem is an IP problem?
Q17. If $\bar{x}$ is an ε-minimzer of f(x) over $\mathbb{R}^n$ then $0 \in$——.
Q18. What is the necessary condition for $\bar{x}$ to be a global minimizer of a DC function f=g-h over $\mathbb{R}^n$?
Q19. Can a non-constant convex function attain its supremum over a closed, convex set c in the interior of C?
Q20. Is $N^{\varepsilon}_C(\bar{x})$ is a cone?