B.Sc. III Paper Code - 327

Topic - L.P. (objective)

Q.1 L.P.P. stands for

(A) Linear programming problem (B) Left problem program
(C) Linear programming process (D) Linear process of programming

Q.2. The following problem

Max $Z = x_1 + x_2$

subject to $x_1 - x_2 \leq 1$, $x_1^2 + x_2^2 \leq 3$

and $x_1, x_2 \geq 0$ is

(A) a L.P.P. (B) an I.P.P., (C) not a L.P.P. (D) None of these

Q.3. The L.P. Technique was developed during

(A) World war I. (B) World war II (C) 1930-1935, (D) None of these.

Q.4. If there is no feasible region in a L.P.P., then we say that the problem has

(A) infinite solutions (B) no solution (C) unbounded solution
(D) None of these.

Q.5 The maximum number of basic solutions to a set of m simultaneous equations in n unknowns ($n \geq m$) is

(A) m (B) $n-B$ (C) ${}^nC_m$ (D) None of these

Q.6. By graphical method, the L.P.P.

Max $Z = x_1 + x_2$, subject to

$5x_1 + 10x_2 \leq 50$

$x_1 + x_2 \geq 1$

$x_2 \leq 4$, & $x_1, x_2 \geq 0$ has

(A) No feasible solution (B) unbounded solution
(C) infinite number of solution (D) None of these

Q.7. A solution of L.P.P. is said to be optimal if

(A) it is feasible and optimizes the objective function
(B) is is not feasible and optimizes the objective function
(C) it is feasible and does not optimize the objective function
(D) None of these

Q.8. If all the elements in the coloumn of a incoming vector in simplex table are negative then solution of LPP is
(A) Not feasible (B) Bounded (C) Unbounded (D) None of these

Q.9. For the L.P.P., Max $Z = x_1 + 3x_2$
s.t. $x_1 + x_2 \leq 5$, $x_1 - x_2 \leq 1$, $x_2 \leq 2$
& $x_1, x_2 \geq 0$, the value of Z is maximum at the point
(A) (0,5) (B) (1,0) (C) (2,1) (D) $(3/2, 2)$

Q.10. In a basic feasible solution of a L.P.P. the vectors associated to non-zero variables are:
(A) Linearly dependent (B) Linearly independent
(C) Unit vectors (D) None of these.

Q.11 In L.P.P. the linear function which is to be optimized is called:
(A) price vectors (B) constrains
(C) Objective function (D) inequality

Q.12. A L.P.P. is said to be in standard primal form of for a maximization L.P.P. all constrains have:
(A) $>$ sign (B) $\geq$ sign (C) $\leq$ sign (D) $<$ sign

Q.13. In graphical method of solving the L.P.P. to convert inequalities in to equations we:
(A) use slack variables (B) use surplus variables
(C) (A) & (B) both (D) Simply assume them as zero

Q.14 The set of all convex combinations of finite number of points is called:
(A) Convex set (B) Convex hull (C) Convex polyhedron
(D) None of these.

Q.15. The convex combination of two points x_1 and x_2 is given by $x = \lambda_1 x_1 + \lambda_2 x_2$ such that $\lambda_1, \lambda_2 \geq 0$ and
(A) $\lambda_1 + \lambda_2 < 1$. (B) $\lambda_1 + \lambda_2 \leq 1$
(C) $\lambda_1 + \lambda_2 = 1$ (D) None of these.