

**TELANGANA UNIVERSITY**  
**S.S.R. DEGREE COLLEGE, NIZAMABAD (C.C:5029)**  
**VI SEMESTER INTERNAL ASSESSMENT II EXAMINATIONS**  
**STATISTICS (OPERATIONAL RESEARCH) QUESTION BANK**

---

**I. Multiple choice questions.**

1. Every loop has an \_\_\_\_\_ number of cells. [     ]  
a. Even                      b. Odd                      c. Both (a & b)                      d. None
2. Any loop should have at least \_\_\_\_\_ cells. [     ]  
a. 5                      b. 4                      c. 3                      d. 2
3. Any loop should start and end at \_\_\_\_\_ cell [     ]  
a. Occupied                      b. Basic                      c. Non-Basic                      d. None
4. Unbalanced transportation problem means [     ]  
a.  $\sum_{i=1}^n a_i = \sum_{j=1}^m a_j$                       b.  $\sum_{i=1}^n a_i a_j$                       c.  $\sum_{i=1}^n a_i = \sum_{j=1}^m b_j$                       d.  $\sum_{i=1}^n a_i \cdot \sum_{j=1}^m b_j$
5. If there are less than  $m+n-1$  basic cells, it is \_\_\_\_\_ [     ]  
a. Degeneracy                      b. Non-degeneracy                      c. Optimal                      d. None
6. Determine  $u_i$  and  $v_j$  values by using the relation [     ]  
a.  $u_i - v_j = c_{ij}$                       b.  $u_i + v_j = c_{ij}$                       c.  $u_i = v_j$                       d. None
7. In the transshipment problem, in IBFS we omit \_\_\_\_\_ [     ]  
a. Vertical cell                      b. Horizontal cell                      c. Diagonal cell                      d. None
8. In assignment problem, we use \_\_\_\_\_ method [     ]  
a. Fisher                      b. Gussets                      c.  $\chi^2$  - test                      d. Hungarian
9. In Hungarian method of solving an assignment problem requires the no. of rows and columns are \_\_\_\_\_ [     ]  
a. Equal                      b. Not equal                      c. Less than                      d. None
10. In travelling salesman problem, he will \_\_\_\_\_ different possible ways of visits. [     ]  
a.  $n!$                       b.  $(n-1)!$                       c.  $(n+1)!$                       d. None

## II. Fill in the blanks.

1. In a sequencing problem, there are \_\_\_\_\_ possible sequences.
2. In a sequencing problem,  $t_{ij} =$  \_\_\_\_\_
3. In a sequencing problem,  $x_{ij} =$  \_\_\_\_\_
4. In a sequencing problem,  $T =$  \_\_\_\_\_
5. The optimum sequence for "n" jobs & two machines method was developed by \_\_\_\_\_
6. In degeneracy problem in TPP, we should assign a small positive quantity \_\_\_\_\_
7. Balanced assignment problem means \_\_\_\_\_ matrix.
8. In unbalanced assignment problem we should add a dummy row or column with the cost \_\_\_\_\_
9. In maximization assignment problem can be converted into \_\_\_\_\_ problem.
10. Subtract each element from large element in maximize assignment problem, the obtained matrix called \_\_\_\_\_

## III. Answer the following questions.

1. Define transshipment problem?
2. Define assignment problem?
3. Define travelling salesman problem?
4. Define processing time ?
5. Define Idle time on a machine ?