

## NORMALIZATION METHODOLOGY

**Sub: Methodology for Normalization of scores (in case exam is conducted in multiple batches for one position)**

Since the upcoming exam for the post of Vidyut Sahayak (Junior Assistant) is scheduled to be held in multiple batches (13, 14, 15 October, 2018 – 03 batches each day), the candidates' scores should be normalized before result declaration. The following method will be apply.

### **Methodology:**

1. The average of scores of each batch is calculated first. The average of marks is calculated as mentioned below:

$$\bar{x} = \frac{\text{Sum of marks of all candidates}}{\text{Number of candidates in the batch}}$$

2. The batch with highest average is considered as **Base Batch**. All other batches will be normalized against this Base Batch.
3. The **Standard Deviation ( $\sigma$ )** of each batch is calculated. The formula to calculate the Standard Deviation is as mentioned below:

$$\sigma = \sqrt{\frac{\sum(x - \bar{x})^2}{N - 1}}$$

Where:

$\sigma$  = Standard Deviation

$x$  = Score of candidate

$\bar{x}$  = Mean of Scores of the candidates in the batch

$N$  = Number of candidates in the batch

4. Assuming that Batch 1 is to be normalized against Batch 2 (Base Batch), then the normalized score of candidate is calculated using the following formula:

$$X_n = \frac{S_2}{S_1} * (X - X_{avg}) + Y_{avg}$$

Where:

$S_1$  = Standard Deviation for Batch 1

$S_2$  = Standard Deviation for Batch 2 (Base Batch)

$X$  = Score of candidate

$X_{avg}$  = Average Score of candidate's batch

$Y_{avg}$  = Average score of Base Batch

$X_n$  = Normalized Score of candidate

The same formula can be used in case there are more than two batches for a Post.

5. The following candidates will be eligible for Merit List:

- a. **Unreserved Category:** Candidates having Normalized score of more than or equal to 50
- b. **Reserved category (OBC/SC/ST):** Candidates having Normalized score of more than or equal to 45

The following points will be handled during scheduling of candidates:

1. Batches will have nearly equal number of candidates scheduled
2. Equal distribution of candidates as per their categories