GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
RAILWAY RECRUITMENT BOARDS

(RECRUITMENT TO VARIOUS POSTS IN VARIOUS LEVELS OF 7th CPC Matrix)

NOTICE ON NORMALIZATION METHODOLOGY FOR COMPUTER BASED TEST(CBT) EXAMS

{FOR ALL CENTRALIZED EMPLOYMENT NOTICES (CENs)}

It is notified for all concerned that following normalization methodology for normalization of scores/marks shall be followed by RRBs for normalizing the ***raw scores*** of the candidates in the examination conducted in multiple shifts of exams. For this, the RRB shall use the percentile equivalence:

1) ***Percentile Scores*****:** ***Percentile Scores*** are scores based on the relative performance of all those who appear for the examination. The marks obtained are transformed into a scale ranging from 100 to 0 for each shift of examinees. The ***Percentile Score*** is not the same as the percentage of marks obtained.

2) The ***Percentile Score*** indicates the percentage of candidates that have scored EQUAL TO OR BELOW (same or lower ***raw scores***) that particular Percentile in that examination. Therefore, the topper (highest score) of each shift will get the same Percentile of 100 which is desirable. The marks obtained in between the highest and lowest scores are also converted to appropriate Percentiles.

3) The ***Percentile Score*** will be the Normalized Score for the examination (instead of the ***raw marks*** of the candidate) and shall be used for the preparation of the merit lists.

4) The ***Percentile Score*** of a Candidate for a particular shift will be calculated as below

$$\textit{Percentile Score} = \frac{\text{Number of candidates appeared in the 'Shift' with } \textit{raw score} \text{ EQUAL TO OR LESS than the candidate}}{\text{The total number of the candidates who appeared in the 'Shift'}} \times 100$$

5) The ***Percentile Scores*** for the ***raw score*** of all the candidates for all the shifts would be merged and shall be called the ***RRB Scores*** (***RRC scores***- For Level-1 Exam) which will then be used for the compilation of results and further processing for deciding the merit allocation.

6) The ***Percentile Scores*** will be calculated up to 5 decimal places to avoid the bunching effect and reduce ties.

7) In case of two or more candidates securing same ***Percentile Score***, their merit position shall be determined by age criteria i.e., older person shall be placed at higher merit and in case age being same, then alphabetical order (A to Z) of the name shall be taken into account to break the tie.

8) In order to finalize the Merit based on ***Percentile Score*** as mentioned above it is necessary to include only those candidates in the Merit list who have secured Minimum Percentage of Marks {for eligibility in various categories: UR-40%, EWS-40%, OBC (Non creamy layer)-30%, SC-30%, ST-25% (ST-30 % for Level-1 Exam)} as per qualifying criteria given in the CENs.

9) For this ***Normalized Marks*** of each candidate will also be calculated as detailed below which will be basis for deciding who are the candidates that have scored Minimum Percentage of Marks as per qualifying criteria given in the CENs as well as for giving weightage in marks to CCAA candidates for Level-1 Exam.

Selection of *Base Shift*:

"***Base Shift***" is a shift having the "Highest Mean" (Average) among all the Shifts of CBT with a condition that its Present Candidate Counts should be 70 % or more than the average of all Shifts". In case the "Highest Mean" of two Shifts are same then Shift having "Highest Individual Marks" shall be considered as "***Base Shift***". In case both the "Highest Mean" and "Highest Individual Marks" are same then the Shift having "Highest Present Count" shall be considered as "***Base Shift***" to break the tie."

Calculation of *Normalized Marks*:

X is the percentile score of a candidate. If X percentile score is found in ***Base Shift***, then corresponding ***Normalized Marks*** (N) are directly available. Otherwise following standard mathematical formula of interpolation is to be used.

Interpolation Formula:

a) For the candidates whose ***Percentile Score*** is greater than or equal to the minimum percentile of ***Base Shift*** percentile:

$$N = \left(\left(\frac{F2-F1}{X2-X1}\right) * (X-X1)\right) + Y1$$

N = ***Normalized Marks***
X2 is immediate higher ***Percentile Score*** in ***Base Shift***
X1 is immediate lower ***Percentile Score*** in ***Base Shift***
Y2 is marks corresponding to X2 ***Percentile Score*** in ***Base Shift***
Y1 is marks corresponding to X1 ***Percentile Score*** in ***Base Shift***.

b) For the candidates whose ***Percentile Score*** is less than that of the minimum percentile of ***Base Shift*** Percentile:

$$N = Y1-\left(\left(\frac{F2-F1}{X2-X1}\right) * (X1-X)\right)$$

N = ***Normalized Marks***
X1 is immediate higher ***Percentile Score*** in ***Base Shift***
X2 is immediate next higher ***Percentile Score*** in ***Base Shift***
Y1 is marks corresponding to X1 ***Percentile Score*** in ***Base Shift***.
Y2 is marks corresponding to X2 ***Percentile Score*** in ***Base Shift***.

Candidates are advised to refer only to the official websites of RRBs for latest updates on the recruitment process. Please do not be misled by unauthenticated sources. Beware of touts who try to misguide candidates with fake promises of appointment for jobs on illegal consideration. RRB selections are based on Computer Based Test (CBT) and recruitment is based only on the merit of the candidates.

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Chairpersons
Railway Recruitment Boards