

Haryana Staff Selection Commission
Bays No.67-70, Sector-2, Panchkula-134151
(www.hssc.gov.in)

PUBLIC NOTICE

Haryana Staff Selection Commission conducts written examinations for the purpose of recruitment to some Group B posts and all Group C and D posts in Haryana Government. Sometimes these examinations are conducted in multiple shifts because of large number of candidates appearing for the same and due to the difficulty in getting adequate number of examination centres for the conduct of the examination in one shift. The examination papers in different shifts are at times of different difficulty level and also at times set by different examiners.

So, in view of above circumstances, the Haryana Staff Selection Commission has decided to normalise the scores of candidates for the examinations which are conducted in multi-shifts. On the advice of Indian Statistical Institute, Delhi, normalization procedure based on percentile method will be adopted by the Commission to calculate final marks of candidates in multi-shift examinations.

Percentile method

A good and statistically robust normalisation procedure is to normalise the marks based on percentiles. The scale of marks for each candidate in each shift is transformed into one common uniform scale from 0 to 100.

The normalised score of any candidate is defined as the percentile of the candidate in the shift. This is the same as the percentage of candidates from the same shift who have scored less than or equal to the marks scored by the candidate. In such a case, the person who scores the maximum marks in any shift will get the maximum percentile score of 100 which is desirable. Also the person who has scored the lowest marks in any shift will be assigned the score of 0.

Depending on the number of candidates in each shift the percentiles can be calculated or rounded off either to 5 or 6 decimal places. This is done to reduce bunching effect and hence the number of ties. For example, if each shift has about 20,000 (or 2×10^5) candidates, then 5 decimal places will suffice. On the other hand, if the number of candidates in each shift is in lakhs (of the order 10^6), then 6 decimal places are recommended.

The prevalent system for breaking or ties can be followed with the modification that now the percentiles (normalised scores) will be used instead of the raw marks.

The ranking will now be based on the normalised score. A person with a higher normalised score will be ranked higher than another person with a lower percentile score.

A step-by-step procedure for calculating percentiles

This report is concluded by giving a step-by-step procedure to facilitate the calculation of percentiles. This can be done programmatically by using any standard programming language.

At the same time, the steps involved are simple enough to be implemented in any spreadsheet (like Excel or Libre Office etc.). Use of such spreadsheets is very common. Hence the steps enumerated below are for direct implementation in such spreadsheets.

Part 1: Calculation of Percentile Scores This step is to be completed separately for each shift.

1. Record the number of candidates who have actually appeared in the shift. Denote this number by N.
2. Sort all the candidates in one shift in decreasing order of their marks.
3. Note the raw marks for each candidate. Suppose this is denoted by T.

Count the number of candidates in that shift whose raw scores are less than or equal to T.

Denote this number by m.

4. The percentile score for this candidate is then calculated as

$$P = 100 \times \frac{m}{n}$$

The percentile P above can be rounded off to the requisite number of decimal places.

Part 2: Calculation of Ranks After completion of Part 1 above, separately for every shift, combine all the files into one single file.

1. Sort the records in decreasing order of percentile scores P.
Assign Rank 1 to the first candidate in the sorted list, Rank 2 to the 2nd candidate in the sorted list and so on.
2. Ties, if any, will be resolved by either assigning the same rank to all the candidates with the same percentile or by using a pre-decided tie-breaker.

21.09.2021

Sd/-
Secretary,
Haryana Staff Selection Commission,
Panchkula.