



**Punjab State Power Corporation Limited**

**Regd. Office: PSEB HEAD OFFICE, THE MALL, PATIALA-147001 (PUNJAB)**

**CIN No: U40109PB2010SGC033813, GSTIN No.: 03AAFCP5120Q1ZC, PAN No. AAFCP5120Q**

## **Advertisement No. CRA 303/24**

**Recruitment for the Posts of Junior Engineer/Electrical, Junior Engineer/Sub-Station and Junior Engineer/Civil in PSPCL**

<b>IMPORTANT DATES</b>	
Start date of online registration/submission of application and fees Deposit	09.02.2024
Last date of online registration/submission of application and fees Deposit.	01.03.2024

Punjab State Power Corporation Limited (PSPCL), a Power Generating and Distribution company owned by Government of Punjab, which has played a key role in implementation of Punjab Government plans for 24\*7 uninterrupted quality power supply in the State of Punjab, is looking for young & dynamic candidates with brilliant academic record for the **posts of Junior Engineer (JE)**.

The Pay-Scale will be as per PSPCL financial circular no. 21/2022 dated 17.08.22. The minimum Pay admissible as per 7th CPC/Pay Matrix and report of the inhouse Committee will be Rs.35,400/-per month.

*During the probation period mentioned in the offer of appointment or extended probation period whichever is more, newly appointed candidates shall be paid 'minimum admissible pay' only as per Department of Finance (Finance Personnel 1 Branch) Chandigarh, letter No. 7/42/2020-5FP1/741-746, Chandigarh dated 17.07.2020 and it will not include any Grade pay, Dearness allowance, annual increment or any other allowance except the travelling allowance and medical reimbursement if any, as per the entitlement of the post held by such candidate. However, in case of appointment of candidates already in service of PSPCL, their pay shall be protected, if the 'minimum admissible pay' in the offer of appointment is lower than the pay actually drawn by them on the post they actually hold lien. But they will not be given any increment or allowance except TA and medical reimbursement during the probation period.*

The probation period for these posts will be 3 years or as per instructions issued by Govt. of Punjab from time to time.

1. Total number of vacancies to be filled for the posts of Junior Engineers are detailed as under:-

TABLE-'A'

Sr. No	Name of Post	No. of vacancies
1	Junior Engineer/Electrical	378
2	Junior Engineer /Sub-Station	112
3	Junior Engineer /Civil	54
	<b>Total</b>	<b>544</b>

Tentative category-wise detailed breakup of posts is given below:

1. Junior Engineer/Electrical:-

TABLE-'B-1'

Sr. No	Name of Category	Backlog	New posts		Total Posts	Posts reserved for women (out of total 378 posts)
			Total	Posts reserved for women		
1	Gen-General	----	58	16	58	16
2	EWS -Economically Weaker Section	----	25	07	25	07
3	SC (MZB) -Scheduled Caste (Mazhabi Balmiki)	----	24	09	24	09
4	SC (MZB-XSM-Self/Dep.) - Scheduled Caste (Mazhabi Balmiki-Ex-servicemen-Self/Dependent)	17	05	0	22	0
5	SC (MZB-SP) - Scheduled Caste (Mazhabi Balmiki-Sports person)	08	02	0	10	0
6	SC (OT) - Scheduled Caste (Others)	----	25	11	25	11
7	SC (OT-XSM-Self/Dep.) - Scheduled Caste (Others-Ex-servicemen-Self/Dependent)	05	05	00	10	0
8	SC (OT-SP) - Scheduled Caste (Others-Sports person)	06	01	00	07	0
9	BC only - Backward Class only	09	25	10	34	10
10	BC (XSM-Self/Dep.) - Backward Class (Ex-servicemen-Self/Dependent)	11	05	00	16	0

Sr. No	Name of Category	Backlog	New posts		Total Posts	Posts reserved for women (out of total 378 posts)
			Total	Posts reserved for women		
11	XSM (Self/Dep.) - Ex-servicemen (Self/Dependent)	16	17 + 30*	10 + 8*	63	18
12	PWD (PD) - Person with disability					
a)	Deaf and hard of hearing	25	04	02	29	02
b)	Locomotor disability	21	03	02	24	02
c)	Intellectual disability and mental illness or multiple disabilities	-	03	01	03	01
13	SP (G) - Sports person (General)	08	4 + 9*	2 + 3*	21	05
14	FF - Freedom Fighter	04	03	02	07	02
	<b>TOTAL</b>	<b>130</b>	<b>248</b>	<b>83</b>	<b>378</b>	<b>83</b>

\* **Note:**As per GoP instructions 309, 234 and 318/Amd/11/2019 dated 14.10.2019 and G.S.R.38/Const./Art.309/Amd.(1)/2019 dated 21.10.19, 39 vacant posts (30 of XSM and 09 of sports) in CRA 294/19 was filled from General/open category due to non-availability of eligible candidates of XSM and SP category. Now in this CRA, these 30 and 09 posts have been given back to XSM and SP category respectively, after reducing the same from new posts of General category.

2. **Junior Engineer/Sub-Station:-**

**TABLE-'B-2'**

Sr. No.	Name of Category	Backlog	New posts		Total Posts	Posts reserved for women (out of total 112 posts)
			Total	Posts reserved for women		
1	Gen-General	----	36	10	36	10
2	EWS -Economically Weaker Section	----	9	3	9	3
3	SC (MZB) -Scheduled Caste (Mazhabi Balmiki)	----	10	3	10	3
4	SC (MZB-XSM-Self/Dep.) - Scheduled Caste (Mazhabi Balmiki-Ex-servicemen-Self/Dependent)	----	2	0	2	0

Sr. No.	Name of Category	Backlog	New posts		Total Posts	Posts reserved for women (out of total 112 posts)
			Total	Posts reserved for women		
5	SC (MZB-SP) - Scheduled Caste (Mazhabi Balmiki-Sports person)	----	0	0	0	0
6	SC (OT) - Scheduled Caste (Others)	----	9	4	9	4
7	SC (OT-XSM-Self/Dep.) - Scheduled Caste (Others-Ex-servicemen-Self/Dependent)	----	1	0	1	0
8	SC (OT-SP) - Scheduled Caste (Others-Sports person)	----	1	0	1	0
9	BC only - Backward Class only	----	9	4	9	4
10	BC (XSM-Self/Dep.) - Backward Class (Ex-servicemen-Self/Dependent)	----	2	0	2	0
11	XSM (Self/Dep.) - Ex-servicemen (Self/Dependent)	12	7	4	19	4
12	PWD (PD) - Person with disability					
a)	Deaf and hard of hearing	3	1	0	4	0
b)	Locomotor disability	3	1	1	4	1
c)	Intellectual disability and mental illness or multiple disabilities	-	1	0	1	0
13	SP (G) - Sports person (General)	1	2	1	3	1
14	FF - Freedom Fighter	1	1	1	2	1
	<b>TOTAL</b>	<b>20</b>	<b>92</b>	<b>31</b>	<b>112</b>	<b>31</b>

3. **Junior Engineer/ CIVIL:-****TABLE-'B-3'**

Sr. No.	Name of Category	Backlog	New posts		Total Posts	Posts reserved for women (out of total 54 posts)
			Total	Posts reserved for women		
1	Gen-General	-----	15	4	15	4
2	EWS -Economically Weaker Section	-----	5	1	5	1
3	SC (MZB) -Scheduled Caste (Mazhabi Balmiki)	-----	5	1	5	1
4	SC (MZB-XSM-Self/Dep.) - Scheduled Caste (Mazhabi Balmiki-Ex-servicemen-Self/Dependent)	-----	1	0	1	0
5	SC (MZB-SP) - Scheduled Caste (Mazhabi Balmiki-Sports person)	-----	1	0	1	0
6	SC (OT) - Scheduled Caste (Others)	-----	5	3	5	3
7	SC (OT-XSM-Self/Dep.) - Scheduled Caste (Others-Ex-servicemen-Self/Dependent)	-----	1	0	1	0
8	SC (OT-SP) - Scheduled Caste (Others-Sports person)	-----	0	0	0	0
9	BC only - Backward Class only	-----	5	2	5	2
10	BC (XSM-Self/Dep.) - Backward Class (Ex-servicemen-Self/Dependent)	-----	2	0	2	0
11	XSM (Self/Dep.) - Ex-servicemen (Self/Dependent)	-----	3+5*	2+1*	8	3
12	PWD (PD) - Person with disability					
a)	Deaf and hard of hearing	1	1	1	2	1
b)	Locomotor disability	1	1	1	2	1
c)	Intellectual disability and mental illness or multiple disabilities	-	-	-	-	-
13	SP (G) - Sports person (General)	-----	0+1*	0+1*	1	1
14	FF - Freedom Fighter	-----	1	1	1	1
	<b>TOTAL</b>	<b>02</b>	<b>52</b>	<b>18</b>	<b>54</b>	<b>18</b>

\***Note:** As per GoP instructions 309, 234 and 318/Amd/11/2019 dated 14.10.2019 and G.S.R.38/ Const./Art.309/Amd.(1)/2019 dated 21.10.19, 06 vacant posts (05 of XSM and 01 of sports) in CRA 294/19 was filled from General/open category due to non-availability of eligible candidates of XSM and SP category. Now in this CRA, these 05 and 01 posts have been given back to XSM and SP category respectively, after reducing the same from new posts of General category.

**Note:**

- 1) The vacancies shown reserved for Women candidates in the above Tables shall be filled as per the Punjab Civil Services (Reservation for Women) Rules 2020 and clarification issued by Govt. of Punjab, Department of Social Security and Women & Child Development vide memo no. 11/05/2017-1-SS(3SS) E-283416/370 dt. 07.02.2022. As per these rules, if any vacancies reserved for women remains unfilled due to lack of sufficient number of eligible women candidate then such vacancies shall be filled from amongst the eligible candidates other than Women in the respective category.
- 2) The vacancies which are not reserved for Women candidates shall be filled from amongst the eligible candidates as per merit irrespective of Gender (i.e. shall be filled from amongst men/women/others).
- 3) The candidates are advised to read it carefully before filling online application as category/sub-category once filled cannot be changed to any other category. Category once filled will be considered as final and no benefit of other category/sub-category will be admissible later on. It is further informed that candidature of such candidate who applies under wrong category will be '**Rejected**' without giving any further notice.
- 4) PSPCL reserves the right to increase or decrease the number of posts as indicated above or cancel the entire/partial recruitment against the said CRA- 303/24 or make any changes in conditions of this CRA at any stage without giving any reason/notice. Further, actual position of posts under a particular category/sub-category may vary.

**2. Eligibility Criteria**

**2.1 Basic and Professional qualification:**

**TABLE-'C'**

Sr. No	Name of Post	Basic and Professional qualification
1	<b>Junior Engineer/ Electrical</b>	The candidate should possess full time regular 3/4 years Diploma in Electrical/Electrical and Electronics Engineering from an institute recognized by State/Central Govt. with minimum of 60% marks. <b>Note:</b> B.E./B.Tech./B.Sc/AMIE (from Institution of Engineers (India) Calcutta) or higher qualification in Electrical /Electrical and Electronics Engg will

		be considered only if the candidate has essential qualification. i.e. <b>Full Time Regular 3/4 years Diploma in Electrical/Electrical and Electronics Engineering from an institute recognized by State/Central Govt. with minimum of 60% marks.</b>
2	<b>Junior Engineer / Sub-Station</b>	The candidate must possess full time regular 3/4 years Diploma in Electrical/Electrical and Electronics Engineering from an institute recognized by State/ Central Govt. with minimum of 60% marks. <b>Note:</b> B.E./B.Tech./B.Sc/AMIE (from Institution of Engineers (India) Calcutta) or higher qualification in Electrical /Electrical and Electronics Engg will be considered only if the candidate has essential qualification. i.e. <b>Full Time Regular 3/4 years Diploma in Electrical/Electrical and Electronics Engineering from an institute recognized by State/Central Govt. with minimum of 60% marks.</b>
3	<b>Junior Engineer / Civil</b>	The candidate should possess full time regular 3/4 years Diploma in Civil Engg. from an institute recognized by State/ Central Govt. with minimum of 60% marks. <b>Note:</b> B.E./B.Tech./B.Sc/AMIE (from Institution of Engineers (India) Calcutta) or higher qualification in Civil Engg will be considered only if the candidate has essential qualification. i.e. <b>Full Time Regular 3/4 years Diploma in Civil Engineering from an institute recognized by State/Central Govt. with minimum of 60% marks.</b>

## 2.2 Knowledge/Qualification of Punjabi:

Qualification/Knowledge of Punjabi is essential for all posts. For this purpose, the candidates must have passed Punjabi of at least Matriculation or its equivalent level.

Note: The candidate must possess the above requisite qualifications up to last date of Submission/registration of online application.

## 2.3 Age Limit

As per Punjab Govt. Notification G.S.R.20/Const./Art.309/Amd.(10)/2010 dated 24.05.2010, candidates should not be below 18 years and above 37 years of age as on 01/01/2024 to be eligible for these posts and relaxation in age will be as per Govt. of Punjab instructions.

**Relaxation in Upper Age Limit**

Upper age limit relaxation is as admissible under rules/instructions of PSPCL/Punjab Government adopted by PSPCL from time to time. Relaxation in upper age in different categories, subject to the condition that the candidate is meeting other eligibility criteria for the post as given below:

- a. SC and Backward class: 5 years over & above the normal maximum recruitment age.
- b. Ex-Serviceman (Self): Ex-servicemen of Punjab Domicile shall be allowed to deduct the period of his service in the Armed Forces of Union from his actual age and if the resultant age does not exceed the maximum age limit prescribed for direct appointment to such a vacancy in the concerned Service Rules by more than three years, he shall be deemed to satisfy the condition regarding age limit.
- c. Physically Handicapped: 10 years over and above the normal maximum recruitment age.
- d. In case of the following, the upper age limit shall be 40 years:
  - i. Widow;
  - ii. Women who are legally separated from their husbands or have been divorced;
  - iii. Women whose husbands have been ordered by Civil or Criminal Courts to pay maintenance to them;
  - iv. Women who have, because of their desertion, been living separately from their husbands for more than two years.
  - v. Women whose husbands have re-married; and
  - vi. Wives of the serving military personnel and wives of those who are disabled while in Military service.
- e. For serving employees of PSPCL/PSTCL/Punjab Govt.:  
To the extent of service rendered in PSPCL or erstwhile PSEB/PSTCL/Punjab Govt.

**Note:**

- (i) Only those candidates who fulfill the criteria of qualification, age, etc. and other requirements as mentioned in this CRA are eligible to apply against this recruitment. The candidate not meeting the above criteria will be rejected during checking of documents or at any time thereafter if found ineligible.



- (ii) The candidate must possess the above requisite qualifications up to last date of submission of online application & shall submit the proof in this regard at the time of document checking. Candidate who fails to do so, shall not be considered even if he/she has qualified the online test and no relaxation shall be given in this regard.
- (iii) Candidates who have appeared/are appearing in the relevant examination/certificate, but their result is awaited, can also apply but he/she must acquire the requisite qualifications upto the last date of submission of online application and shall produce the proof for the same. Candidate, who fails to do so even if he/she has qualified the online computer-based test, shall not be considered and no relaxation shall be given in this regard.
- (iv) The candidates whose result has been declared recently and the certificate is yet to be issued, then the date of declaration of result shall be considered as date of completion of his that qualification. However, candidates have to submit proof in this regard.
- (v) Detailed instructions, given on the PSPCL website ([www.pspcl.in](http://www.pspcl.in)), may be referred at the time of filling online application.
- (vi) Candidates in their own interest are advised not to wait till the last date & time and should submit their application well within the stipulated time. PSPCL shall not be held responsible, if any candidate(s) are not able to submit application and fee due to last time rush or any internet issue or any other reason whatsoever.

### 3.0 Online application fee: -

<b>Fees Details (Non-Refundable):</b>				
<b>Sr. No.</b>	<b>Category</b>	<b>Application fees</b>	<b>Applicable GST @ 18%</b>	<b>Total</b>
<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E (C+D)</b>
1	All candidates except Schedule Cast and Person with Disability category	Rs.1200/- per Application	216	Rs 1416 + Bank Charges (if applicable)
2	Schedule Cast and Person with Disability Category	Rs. 750/- per Application	135	Rs 885 + Bank Charges (if applicable)

*\*GST rate shall be applicable as per GOI norms issued from time to time.*

- **Fee will be accepted by online mode only. No other mode for depositing fee is acceptable.**

- Submission of application shall be considered complete only if the application fee has been deposited. Application without deposit of requisite fee shall be rejected.
- The fee once paid shall neither be refunded under any circumstances nor the fee can be held in reserve for any other recruitment or selection.
- If a candidate want to apply for more than one type of post mentioned in Table-A, then he has to register/submit application and fees separately for each post for which he want to apply.

#### 4.0 **RESERVATION**

- (i) The reservation of posts for reserved categories is applicable for candidates of Punjab Domicile only.
- (ii) All reserved category candidates are required to produce Punjab Domicile during document checking.
- (iii) Candidates are advised to read the category-wise breakup of posts very carefully before filling up the online application. If any candidate applies against any reserved category to which he/she belongs then he/she should possess reservation certificates in accordance with Govt. of Punjab instructions for that category/sub-category. The candidates are advised to fill/select their category carefully & with due diligence. **The category once selected by a candidate will not be changed under any circumstances and the candidature of such candidate who applies against the category to which he/she does not belong shall be rejected without giving any further notice.**
- (iv) Reservation for women shall be applicable as per The Punjab Civil Services (Reservation for Women) Rules 2020 and clarification issued by Govt. of Punjab, Department of Social Security and Women & Child Development vide memo no. 11/05/2017-1-SS(3SS) E-283416/370 dt. 07.02.2022.
- (v) It is important to mention here that other than the categories shown in category-wise break up of posts in Table 'B-1 to B-3', candidates belonging to Vimukt Jati and Bazigars, can also apply against SC/OT/Vimukt Jati and Bazigars category. As per Dept. of Social Justice Empowerment and Minorities (Reservation Cell), Govt. of Punjab notification no. 01/24/2020/RC1/321 dated 15.09.2022, reservation to Vimukt Jati and Bazigars will be applicable as per instructions issued vide no. 1/3/98-RC1/948 dated 20.12.2001.
- (vi) Reservation to Ex-serviceman category candidates will be given as per Govt. of Punjab, Department of Personnel & Administrative Reforms (Personnel policy branch), notification no.G.S.R 11/Const./Arts. 309, 234, and 318/82 dated 02.02.1982 and GoP Department of Defence Services Welfare

(Defence welfare Branch) G.S.R 37/Const./Arts. 309, 234, and 318/Amd/11/2019 dated 14.10.2019 and amendments, if any . **It should be noted that as per Punjab Recruitment of Ex-Servicemen Rules, 1982, preference shall be given to Ex-servicemen/Self and SC/BC (Ex-servicemen/Self) category candidate over Ex-servicemen/Dependent and SC/BC Ex-servicemen/Dependent category candidate.**

*(Note: As per Pb. Govt. Letter No. 15/25/2001-4DW/1591 dated 21.05.2002, an Ex-serviceman is allowed the benefit of Reservation for the second time and even thereafter in subsequent recruitments in accordance with the provisions of these Rules).*

*"Provided that where an Ex-serviceman is not available for recruitment against a reserved vacancy, such a vacancy shall be reserved to be filled in by recruitment of the wife or one dependent child of an Ex-serviceman, who has neither been recruited against a reserved vacancy under these rules;*

*"Provided further that the wife or the dependent child of the ex-serviceman shall be recruited against the reserved vacancy subject to the conditions that: -*

- (i) he or she possesses the prescribed qualifications and is within the prescribed age limits;*
- (ii) he or she is not already in service;*
- (iii) he or she will be eligible to avail the benefit only once in life:"*

*"Provided further that one grand Child of the Gallantry Award Winner shall be recruited against the reserved vacancy, in case the benefit or reservation has not been availed of by any of the children or dependents such winner or by the winner himself;*

**Explanation:** *For the purpose of this proviso, Gallantry Award Winner includes the winner of the Paramvir Chakra, the Mahavir Chakra, the Vir Chakra, the Sena or Nao Sena or Vayu Sena Medal and Mention-in-Despatches."*

- (vii)** Reservation to Persons with disability will be given as per 'THE RIGHTS OF PERSONS WITH DISABILITY ACT 2016' and as per instructions issued vide No. 1/1/2017-3DC/1588894/1 dt 03.10.2019 by, Department of Social Security and Women and Child Development, Govt. of Punjab . According to Section 2 (r) of The Rights of Person with Disabilities Act, 2016, "Person with Benchmark disability" means a person with not less than 40% of a specified disability. Only those persons with "Benchmark disabilities" and Punjab domicile would be eligible for reservation in the Persons with Disability category.
- (viii)** As per Govt. of Punjab letter no. 1/3/2019-RC1/120 dated 28.05.2019 and letter no. 1/3/2019-RCI/700 dated 30.10.2020, reservation has been provided to residents of Punjab belonging to (EWSs) Economically Weaker Sections

(whose family income is less than Rs. 8.00 lacs per annum) who are not covered under the existing scheme of reservation for Scheduled Castes and Backward Classes. Reservation of EWS category will be governed by Govt. of Punjab notification no.1/3/2019-RC1/196 dated 18.03.2021.

- (ix) As per clause 6.2 of Principal Secy., Social Justice, Empowerment and Minorities (Reservation Cell), Govt. of Punjab letter no. 1/3/2019-RCI/700 dated 30.10.2020 for EWS category candidates, it is mandatory to produce 'Income and Asset Certificate' showing gross annual income of his/her family for financial year 2022-23.
- (x) The category-wise final merit shall be prepared based on the marks secured in Computer based test only (except for Sports person category candidates whose final merit shall be prepared by the O/o Director/Sports, Punjab as per Sports gradation policy no. 47/26/83-5Edu./2036 dated 10.12.1997 and Punjab Recruitment of Sportsman Rules, 1988 with applicable amendments, if any. The O/o Director Sports, Punjab is the competent authority to issue Sports Gradation Certificate and any other Sports Certificate issued by any other authority will not be accepted as valid Certificate for claim of reservation under the Sports Person, Punjab Category). After the process of document checking of candidates of Sportsperson category qualified in the online exam, their Sports Gradation certificates will be sent to the O/o Director/Sports, Punjab for verification and for issue of final list of Sports persons. Further, if two or more candidates have secured same marks in Computer based test, then their relative merit shall be determined by their age where higher age candidate shall be placed at higher merit.
- (xi) **Reservation Certificates shall be as per instructions mentioned in Table Below:**

Category	Certificate
EWS (Economically Weaker Section)	Certificate as per the instructions of the concerned department of Govt, of Punjab.
SC/BC (Scheduled Caste/ Backward Class)	Certificate as per the instructions of the concerned department of Govt, of Punjab.
XSM (Ex-servicemen/Self)	Ex-servicemen Certificate submitted by Self should be duly issued by the concerned District Sainik Welfare Officer, Govt. of Punjab.
XSM (Ex-servicemen/ Dependent)	Lineal Descendant Certificate duly issued by the concerned District Sainik Welfare Officer, Govt. of Punjab.
FF (Freedom Fighter)	The requisite certificate issued by the Deputy Commissioner of the concerned district as per the instructions of the Govt. of Punjab.

Category	Certificate
SP (Sports person)	A relevant Sports gradation Certificate as issued by Director Sports Department, Punjab.
PWD (Person with disability)	The PWD certificate with permanent disability shall be issued by Civil Surgeon of Govt. of Punjab. <b>For PWD candidates who are applying for this post shall be given the reservation to the extent of disability allowed as per lists of posts identified by Pb. Govt. Please refer Annexure 'A'</b>

- **Candidates must produce original reservation related certificate (as per their category mentioned in online application form) at the time of document checking.**

#### 5.0 **Scheme of Examination :**

1	Questions related to the concerned discipline of the post applied	70 Questions
2	General Knowledge	10 Questions
3	Reasoning	10 Questions
4	General English	10 Questions

- The question paper will consist of 100 objective type multiple-choice questions (MCQ).
- All the multiple-choice questions will carry one mark for each correct answer and there will be negative marking for a wrong answer @ 0.25 (1/4<sup>th</sup>) of the marks allotted for correct answer.
- The exam would be of 2 hours (120 minutes) duration.

#### 5.1 **Minimum qualifying marks:**

General Category candidates: 45%  
Reserve Category candidates: 35%

- Reserve category candidate includes** Economical Weaker Section, Scheduled Caste, Backward Class, Ex-Serviceman, Freedom Fighter, Sports person & Person with Disability candidates.
- If two or more candidates secure same marks, then their relative merit shall be determined by their age where higher age candidates shall be placed at higher merit.

#### 5.2 **Normalization:**

Normalization means adjusting values measured on different scales to a notionally common scale.

### **Need for Normalization in Exam**

Exam pertaining for a particular post/course could be spread across multiple shifts which will have different question paper for each shift. The normalization is to be done by considering the difficulty level of each set, since the questions may be different in different sets and difficulty level of a particular set may be different from other sets.

Hence the normalization of scores needs to be carried out for all the candidates who had written the exam, across shifts for the same post/course.

**Normalization Method to be applied shall be as per Annexure – 'B'.**

### **6.0 ABOUT THE ONLINE TEST: -**

- a) *The information regarding the online test (admit card, date & time of exam etc.) will be made available on website [www.pspcl.in](http://www.pspcl.in) from time to time.*** The online test is tentatively scheduled to be held at any Centre in Punjab/Chandigarh which will be intimated while sending/uploading the admit card through PSPCL website ([www.pspcl.in](http://www.pspcl.in)). The test Centre will be allotted by PSPCL while sending/uploading the admit card and no change of test Centre will be permissible. The exact date, time and venue of the online test and information regarding dispatch/uploading of e-Admit Cards to the candidates, with instructions of the test will be made available prior to the date of the test by email and on website of PSPCL.
- b)** Firstly, the admit cards with particulars of the candidates except test center will be uploaded atleast 7 days before the date of exam. Final admit card with test center shall be made available at least 3 days before the date of exam.
- c)** After conduct of the online test, the question paper-cum-answer key will be displayed on PSPCL's website ([www.pspcl.in](http://www.pspcl.in)) and notice will be issued, wherein, if a candidate have any objection on the answers displayed on website, then he/she can file objection regarding the same as per guidelines in the notice. On the basis of objections received, the question/answer keys will be reviewed by the expert committee and final merit shall be prepared accordingly. Normalization formula, as & if applicable, will also be applied on the merit list prepared after reviewing of the objections. The decision taken by expert committee shall be final.

### **7.0 Merit:**

- a) The merit list of candidates shall be prepared on the basis of marks scored in online exam and only those candidates shall be considered in merit list who scores minimum qualifying marks in online exam as mentioned above.
- b) In case online exam is conducted in a single shift, result/final merit list shall be prepared on the basis of actual marks secured by the candidate in online examination.
- c) It is informed that online exam conducted for a particular post may be spread across multiple shifts which will have different question paper for each shift. As such normalization (as above) will be done in order to neutralize the effect of difference in difficulty level of each set of papers in different shifts. The final merit list will be prepared on the basis of marks worked out after

normalization in case exam is conducted in multiple shifts. Thus, raw marks may vary with normalized marks in the final merit list.

- d) The category-wise final merit shall be prepared based on the marks secured in Computer based test only except for Sports person category candidates whose final merit shall be prepared by the O/o Director/Sports, Punjab as per Sports gradation policy no. 47/26/83-5Edu. /2036 dated 10.12.1997 and Punjab Recruitment of Sportsman Rules, 1988 with applicable amendments, if any. The O/o Director Sports, Punjab is the competent authority to issue Sports Gradation Certificate and any other Sports Certificate issued by any other authority will not be accepted as valid Certificate for claim of reservation under the Sports Person, Punjab Category). After the process of document checking of candidates of Sportsperson category qualified in the online exam, their Sports Gradation certificates will be sent to the O/o Director/Sports, Punjab for verification and for issue of final list of Sports persons.
- e) Further, if two or more candidates have secured same marks in Computer based test, then their relative merit shall be determined by their age where higher age candidate shall be placed at higher merit.

#### **8.0 Document checking process:**

On the basis of result/merit list, candidates who qualify in online examination shall be called for document checking. Candidates must produce original documents/certificates before the document checking committee wherein their fulfillment of eligibility criteria w.r.t. to qualification, age, reservation etc. as per CRA shall be checked and the original documents shall be returned to the candidates on the same day after checking. However, the candidates must submit one photocopy of all the documents, duly self-attested, to the document checking committee. The date of document checking shall be notified through registered e-mail IDs (as mentioned by the candidate in his/her online application form) and on PSPCL's website ([www.pspcl.in](http://www.pspcl.in)) only. Thus, candidates are advised to mention their email IDs very carefully and to visit the PSPCL site frequently.

#### **Note:**

- i) It is further clarified that mere calling of any candidate for document checking doesn't entitle him/her for selection/appointment to the said post.
- ii) Candidate shall be notified about the date of document checking through Registered E-mail ID (as mentioned by the candidate in his/her online application form) and on PSPCL's website ([www.pspcl.in](http://www.pspcl.in)) only. *In case candidate does not appear on the 1<sup>st</sup> scheduled date, then 2<sup>nd</sup> chance (final chance) would be given to such candidate and in case he/she again fails to appear for document checking even on 2<sup>nd</sup> chance (final chance), then no further chance would be given & his/her candidature shall be cancelled/forfeited without any further notice.*
- iii) Candidate has to himself/herself appear for the process of document checking. Nobody on candidate's behalf can appear in the document checking. In case candidate himself/herself fails to appear before the

document checking committee within stipulated time, then his/her candidature will be cancelled/forfeited without any further notice.

**9.0 Offer of appointment/Joining: -**

The successful candidates qualified in the online test and have successfully completed the process of document checking relating to the various qualifications and eligibility criteria such as age, academic qualification, passing of Punjabi language & certificates in respect of reservation etc. and found eligible after checking of his/her documents, shall be considered on the selection panel.

**Note:**

- i) The candidature of a candidate will be rejected without any notice if any information, certificate or document provided by the candidate is found to be wrong/fake/fictitious/forged or bogus or does not meet with the eligibility criteria(s) as mentioned in the CRA. The candidate must acquire the requisite qualification upto the last date of submission of online application and shall produce proof for the same. Candidate, who fails to do so even if he/she has qualified the online exam shall not be considered and no relaxation shall be given in this regard.
- ii) The offer of appointment, for the number of posts to be filled, shall be issued by the appointing authority to the candidates brought on the selection panel.
- iii) Those candidates who has been issued appointment letter shall be given 21 days to join the services of PSPCL. In case, candidate does not report for joining on scheduled date, then final/last notice of 21 days will be given to such candidates. In case, any candidate fails to join PSPCL within stipulated time period, his/her appointment letter shall be cancelled automatically without any further notice.
- iv) Candidate has to deposit all his/her original documents at the time of joining in the office of appointing authority for getting the same verified by appointing authority.
- v) Validity of selection panels for above said posts will be one year from the date of approval of 1<sup>st</sup> selection panel by the competent authority. After the expiry of validity of panel, waiting list shall cease to exist and candidates in waiting list will not be considered for selection. Even if document checking process of a candidate has been completed, he/she will not be considered for selection/issuance of appointment letter after expiry of validity of panel **as mere calling of any candidate for document checking doesn't entitle him/her for selection/appointment to the said post.**
- vi) Candidates working in Government/Semi-Government or Cooperative organizations shall have to submit "No objection certificate" from their organization after resigning and before joining PSPCL.



**10.0 Training: -**

PSPCL may depute the selected candidates to undergo training at Technical Training Institute, PSPCL, Patiala or any other institute in India.

**11.0 ACTION AGAINST MISCONDUCT:**

11.1 Candidates are advised in their own interest that they should not furnish any particulars that are false, tampered, fabricated, or should not suppress any material information while filling up the online application.

11.2 **At any stage of recruitment, if a candidate is or has been found guilty of**

- Using unfair means during the examination.
- Impersonating or procuring impersonation by any person.
- Misbehaving in the examination hall or taking away/destroying damaging any equipment or any other things in the examination hall.
- Resorting to any irregular/unfair means in connection with his/her candidature during selection process.
- Obtaining support for his/her candidature by any means.
- Apart from above, any other unfair means relating to Conduct of Examination or any other relevant matter.

**Such candidates in addition to rendering himself/herself liable to criminal prosecution may also be liable to be:**

- Disqualified from the examination hall.
- Debarred either permanently or for a specified period from any examination/recruitment.

11.3 Mobile-phone/Cellphone/Hand-bag/Purse/Electronics/Non-Electronics instrument/Ornaments/Goods/Articles etc. are strictly not allowed and are banned in the examination complex.

11.4 Candidates are advised to bring only Admit Card, Photo Identity Card. Frisking will be done at entry point and during the exam. PSPCL or Examination Centre will not be responsible for keeping custody of any of prohibited items & the candidate shall be solely responsible for its safe custody outside the examination complex. Candidates should, therefore, read these instructions carefully and follow them strictly. If any of the candidates is found/possessing any of the prohibited items inside the examination hall, he/she shall be straightaway debarred from examination on the spot, apart from action as per law may also be initiated against him/her.

**12. GUIDELINES FOR SUBMISSION OF ONLINE APPLICATION: -**

- a) Carefully read the advertisement and the guidelines regarding online filling /submission of application form.
- b) Candidates will apply online through PSPCL website in English only. **No other means/mode of submission of applications including manual/paper will be accepted under any circumstances.**

- c) Candidate should have a valid personal mobile number and personal e-mail ID. These should be kept active during the entire recruitment process. Registration number after the completion of registration process will be sent on this registered mobile/email. Communication for document checking or any other communication will be sent through the registered e-mail ID and will be uploaded on PSPCL website. The candidates are, therefore, requested to check their registered e-mail and visit PSPCL website on regular basis for any communication from PSPCL. Under no circumstances, the candidate should share/mention e-mail ID password to any other person.

**12.1 STEP-I: REGISTRATION FOR ONLINE APPLICATION FORM:**

- 12.1.1** Please visit PSPCL website [www.pspcl.in](http://www.pspcl.in) and click on "**Recruitment**" tab on website's home page and then click on – "**Recruitment for the posts of Junior Engineer in PSPCL against CRA-303/24**" and then Click on the "**Link for applying online recruitment of Junior Engineer in PSPCL against CRA-303/24**" and follow the instructions there.
- 12.1.2** Select CRA then Click on 'NEW REGISTRATION' (for first time registration) or 'REGISTERED CANDIDATE' (if already registered).
- 12.1.3** **New Registration Part-1:** Enter Post Applied and other details like Name Date of Birth (DOB), Father's Name, Mobile No. Email id etc..
- 12.1.4** **New Registration Part-2:** Verify the OTP received on registered e-mail ID and mobile number.
- 12.1.4** After successful verification, fill all the details, on the next screen, required in the online application form (including Photo and sign).
- 12.1.5** "Save Draft" is for partial saving of information entered. A candidate can edit or view his/her information any time.  
"Save and Preview" will save the complete information and will show the preview of completely filled form to the candidate for confirmation. Here the candidate can "Submit" or go back to edit any information. If a candidate clicks "SUBMIT" button on confirmation screen, he/she will not be able to edit his/her information anymore.
- 12.1.6** Before submission of his/her Step-I details, by clicking check boxes, accept the Terms and Conditions and Self-declaration.
- 12.1.7** Candidates who have appeared in the examination of requisite qualification but result is awaited should write '**RESULT AWAITED**' in the column: 'Year of Passing'. However, the candidate should possess the requisite qualification upto the last date of registration/submission of online application as detailed in the CRA.
- 12.1.8** On completion of Step-I, a message will be sent to candidate's registered mobile/email conveying his/her completion of online application.
- 12.1.9** Instructions regarding scanning of Photograph of applicant and Signature of applicant:  
Candidates should upload the scanned (digital) image of their photograph and signature in JPG/JPEG format, as per the process given below:

**a) Photograph:**

- Dimensions should be 150 x 200 pixels (preferred).
- Size of file should be between 20kb-50kb and should not be more than 50 kb. Photograph must be a recent passport size colored picture.

**b) Signature:**

- Dimensions should be 140x60 pixels (preferred).
- Size of file should be between 10kb-20kb and should not be more than 20 kb.
- The applicant has to sign on white paper with **Black** ink pen only.
- The signatures must be signed by the applicant herself/himself only and not by any other person.

**12.2 STEP-II: DEPOSITING ONLINE APPLICATION FEE (NON REFUNDABLE)**

After successful submission of online application, the candidate shall be directed to fee payment link, where the candidate should deposit the requisite application/processing fee and bank charges (if applicable). If candidate has not submitted the fee at the time of application submission the candidate can pay the fees as under:

- 12.2.1 Please visit PSPCL website [www.pspcl.in](http://www.pspcl.in) and go to "**Recruitment for the posts of Junior Engineer in PSPCL against CRA-303/24**" and then Click on the "**Link for applying online recruitment of Junior Engineer in PSPCL against CRA-303/24**".
- 12.2.2 After Login, Click on "Pay Fee" button, which will be redirected to Payment Page of SBI Payment Gateway.
- 12.2.3 Select the On-line payment option i.e. Internet Banking/Credit Card/Debit Card. Kindly make the online payment via credit or debit card or Internet Banking and retain the transaction number for future reference.
- 12.2.4 After successful completion, the candidate should **take printout of Payment Receipt (Subject to Realization)**.

**12.3 STEP III: PRINT APPLICATION FORM:**

- 12.3.1 After successful deposit of online application fee, login again after clicking on **REGISTERED CANDIDATE**.
- 12.3.2 **Check Fee Status:**
- If fee status is not paid, then payment is still not updated,
  - If fee status is paid, then payment is updated.
- 12.3.3 Click on **PRINT APPLICATION FORM**. It should be noted that no e-mail will be sent to the registered candidates containing final application form. It is suggested that candidates should download and retain the application form carefully for future reference.
- 12.3.4 On successful registration of online application candidates are advised not to attempt for registration for the same post again since multiple registration numbers may create problem for candidates in future.

*\*For any queries/issues faced in applying online the candidates may write an email to the Helpdesk at [helpdesk-recruitment@pspcl.in](mailto:helpdesk-recruitment@pspcl.in)*

**13.0 OTHER TERMS AND CONDITIONS: -**

- a. On successful registration of online application, candidates are advised not to attempt for re-registration for the same post since multiple registration number and password may create problem for candidates in future. The applicants who submit multiple applications for the same post should note that only the latest application (i.e. application with Highest/Latest Application Number) shall be entertained by the PSPCL and also note that the fees paid against one Application Number shall not be adjusted against any other Application Number.
- b. Admit card for online test, containing the details of the Centre/venue for the examination etc. will be sent to the candidates at their registered e-mail ID. The candidates are required to take a printout of their admit card. Candidate can also download their admit card from the PSPCL website using their registration number and the password. Candidates will not be allowed to enter the examination hall without valid admit card.
- c. Candidates in their own interest are advised, not to wait till the last date & time and register their application well within the time. PSPCL shall not be held responsible, if the candidates are not able to submit their application due to last time rush.
- d. PSPCL does not assume any responsibility for the candidates not being able to submit their applications within the last date on account of the aforesaid reasons or for any other reason whatsoever.
- e. Candidates are also advised to keep copy of application form, payment slip and e-admit card with them for reference and record.
- f. Please note that the above procedure is the only valid procedure for applying. No other mode of application shall be accepted.
- g. Candidates serving in Govt./Quasi Govt. offices, public sector undertakings are required to submit "No objection Certificate" from their employer at the time of Joining, failing which their candidature may not be considered.
- h. **Candidate should note that his/her candidature is purely "PROVISIONAL" subject to fulfillment of eligibility after document checking. Mere issue of admit card/passing of online examination will not imply that his/her candidature has been finally cleared by the PSPCL. Before submitting the application, the candidate must ensure that he/she fulfills all the eligibility criteria as laid down in this advertisement or amendments, if any, issued subsequently.**
- i. Candidates should only submit their application online and they are not required to send hard copy of online application form or any certificate to PSPCL separately.

- j. The decision of the PSPCL about the mode of selection to the post and eligibility conditions shall be final and binding. No correspondence will be entertained in this regard.
- k. No TA/DA will be paid for the journeys performed for the online test/document checking/counseling etc.
- l. Candidates are requested to mention their sub-category viz-a-viz Caste in online application form.
- m. All information including qualifications, category, age etc. declared by the candidate in their application is presumed to be correct subject to its checking conducted by documenting checking committee later-on in respect of those eligible candidates who may be called for document checking before their appointment for joining PSPCL. There is no mechanism to verify the information/data during the online application. If, at any stage (during document checking before issue of appointment letter or even after his/her joining the PSPCL), any information of the candidate is found to be wrong forged/fictitious/bogus, the candidature of such candidate will be cancelled ab initio and action will be taken against him/her according to law.
- n. Only those Government employees, if selected shall be eligible to be issued appointment letters who are certified by the Head of the Department as not having any pending disciplinary proceedings or undergoing punishment under Punjab Civil Services (Punishment & Appeal) Rules-1970, or any other applicable rules, as the case may be, not undergoing any trial/prosecution or any other material disqualification in terms of integrity and professional misconduct and necessary NOC should be obtained from the Head of the Department.
- o. The selected candidates will be governed by PSPCL Rules & Regulations amended from time to time.
- p. In case the candidate fails to deposit the requisite fee, his/her application shall stand automatically cancelled/rejected and shall not be considered for further processing.
- q. For any clarifications regarding the online filling of the form, the candidate can contact through email: [helpdesk-recruitment@pspcl.in](mailto:helpdesk-recruitment@pspcl.in)
- r. The venue, date and time of document checking/counseling of the candidates in merit will be available on the website [www.pspcl.in](http://www.pspcl.in). Candidates will be informed individually about the document checking schedule only on their registered email id filled in application form. So, candidates are advised to register email id in application form that is personally used by them.
- s. Candidates are advised to regularly visit PSPCL official website ([www.pspcl.in](http://www.pspcl.in)) for any updates regarding this advertisement.
- t. In case, candidate is unable to get the admit card, he/she must contact personally at the facilitation counter to be opened before the online test and will be notified through PSPCL website before the said examination.

- u. Candidates must bring print out of Admit Card for verification on the day of online examination at the venue of the Examination Centre. For identification candidate must bring Adhaar Card and one more photo identity proof in original. Valid photo identification card are employer ID (Govt.), Driving license, Voter card and Passport issued by Govt. authorities etc.
- v. In case of any ambiguity/dispute or interpretation, decision of the PSPCL shall be final and binding on the candidate. Legal jurisdiction shall be subject to Local Courts at Patiala only.

In case of any difficulty or query related to online application only, please contact through email id: [helpdesk-recruitment@pspcl.in](mailto:helpdesk-recruitment@pspcl.in) by quoting the registration number.

**Date:-05-02-2024**

**Place : Patiala**

  
**Chief Engineer/HRD,  
PSPCL, Patiala.**

**ANNEXURE-'A'**

**Identification of Suitable Category of Benchmark Disability for reservation under PwD category for the posts of JE/Electrical, JE/Sub-Station and JE/Civil against CRA 303/24**

<b>Sr. No.</b>	<b>Post</b>	<b>Functional Requirements</b>	<b>Suitable category of Benchmark Disabilities</b>
1	Junior Engineer /Electrical	S, ST, W, BN, L, KC, PP, MF, RW, SE, C	a) D, HH b) OL, CP, LC, Dw, AAV c) ASD (M), SLD, MI d) MD involving (a) to (c) above
2	Junior Engineer /Sub-Station	S, ST, W, BN, L, KC, PP, MF, RW, SE, C	a) D, HH b) OL, CP, LC, Dw, AAV c) ASD (M), SLD, MI d) MD involving (a) to (c) above
3	Junior Engineer /Civil	S, ST, W, BN, L, KC, MF, RW, SE, H, C	a) D, HH b) OA, OL, CP, LC, Dw, AAV c) SLD,MI d) MD involving (a) to (c) above

**FUNCTIONAL REQUIREMENT ABBREVIATIONS USED:**

S	Sitting
ST	Standing
W	Walking
BN	Bending
L	Lifting
KC	Kneeling &Crouching

PP	Pulling & Pushing
MF	Manipulation with Fingers
RW	Reading & Writing
SE	Seeing
H	Hearing
C	Communication

**CATEGORY ABBREVIATIONS USED:**

D	Deaf
HH	Hard of Hearing
OA	One Arm
OL	One Leg
CP	Cerebral Palsy
LC	Leprosy Cured
Dw	Dwarfism
AAV	Acid Attack Victims

ASD(M)	Autism Spectrum Disorder (M= Mild)
SLD	Specific Learning Disability
MI	Mental Illness
MD	Multiple Disabilities

## Normalisation Formula

### Procedure to be adopted for compilation of NORMALIZED SCORES/MARKS for multi- Shift/Session Exams

(Normalization procedure based on Percentile and Equi percentile method)

#### Need for Normalisation

For some posts, the exam may be conducted in different shifts. Since the question paper for any subject in different shifts are different and it is quite possible that despite all best possible efforts of maintaining equivalence among various question papers, the difficulty level of these question papers administered in different shifts may not be the same or similar. Some of the candidates might have end up attempting a relatively tougher set of questions when compared to other sets. The candidates who attempted the comparatively tougher examination are likely to get lower marks as compared to those who attempted the easier one; the scores/marks of the candidates across shifts are not directly comparable. There is a need for normalizing the marks across shifts to make them amenable to such comparisons.

For each post for which the examination is held in multiple shifts, the raw score for each candidate appearing in the exam will be converted into Normalized Score in the following three steps:-

#### **Step1: Convert Raw Scores into Percentile Scores.**

The percentiles are calculated separately for each shift.

1. Record the number of candidates who have appeared in a 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:

$$P = \frac{m}{N} * 100$$

#### **Illustration:**

Suppose that the examination in a certain subject is held in two different shifts,  $S1$  and  $S2$ , say. Consider six candidates  $A, B, C, D, E$  and  $F$  out of which  $A, B, C$  are from shift  $S1$  and the other three are from shift  $S2$ .



Let the raw marks of the six candidates be  $x_A, x_B, x_C$  (shift  $S1$  marks) and  $y_D, y_E, y_F$  (shift  $S2$  marks).

For candidates  $A, B, C$ , the percentiles are calculated using the total marks obtained by candidates appearing in shift  $S1$  (in the same post exam) as explained above.

Similarly, for candidates  $D, E, F$ , the percentiles are calculated using the total marks obtained by candidates appearing in shift  $S2$  (in the same post exam) as explained above.

Let the respective percentiles be denoted by  $P_A, P_B, P_C, P_D, P_E, P_F$ .

The above data is summarised in the following table. The terms in **red colour or Bold letters** indicate that these are the output of this step.

Shift S1			Shift S2		
Candidate	Raw score	Percentile	Candidate	Raw score	Percentile
A	$x_A$	$P_A$	D	$y_D$	$P_D$
B	$x_B$	$P_B$	E	$y_E$	$P_E$
C	$x_C$	$P_C$	F	$y_F$	$P_F$

Since the calculation for percentiles in any shift depends only on the data from that shift alone, there is a separate table for each shift.

**Step2:** Pull-back of the percentiles to the marks scale for each session to get Normalised Score.

- The data across all sessions tabulated at the end of *step 1* is collated into a single table.
- The columns for the shift-wise raw score are kept separate.
- All the records are then sorted in decreasing order of the percentiles.

### **Illustration (Continued):**

In the illustrative example given above, suppose that the percentiles of the six candidates satisfy

$$P_E > P_A > P_C = P_F > P_B > P_D$$

Then the collated table would look as given below:

Candidate	Percentile	RawScoreS1	RawScoreS2
E	$P_E$	-	$y_E$
A	$P_A$	$x_A$	-
C&F	$P_C = P_F$	$x_C$	$y_F$
B	$P_B$	$x_B$	-
D	$P_D$	-	$y_D$

Candidate  $C$  from shift  $S1$  and candidate  $F$  from shift  $S2$  have the same percentile. The relevant entries under “Raw Score  $S1$ ” and “Raw Score  $S2$ ” are the actual raw scores  $x_C$  and  $y_F$  respectively. This has the obvious interpretation that marks  $x_C$  of shift  $S1$  are equivalent to marks  $y_F$  of shift  $S2$ .

Candidates *A* and *B*, appearing in shift *S1*, have a blank entry in column “*Raw Score S2*”, as there is no corresponding candidate having exactly the same percentile from shift *S2*. Similarly, Candidates *D* and *E*, appearing in shift *S2*, have a blank entry in column “*Raw Score S1*”, as there is no corresponding candidate having exactly the same percentile from shift *S1*.

- In the remaining part of this *Step 2*, the blank entries in the two “*Raw Score*” columns are filled up using linear interpolation.
- Consider a record (row) whose entry in the column “*Raw Score S1*” is blank. The blank will be replaced by the interpolated score *X* which is calculated as:

$$X = x_1 + \frac{x_2 - x_1}{p_2 - p_1} (P - p_1)$$

Where:

- *P* is the corresponding entry in “*Percentile*” column
- *x*<sub>1</sub> is the first *non-blank* entry BELOW *X*. i.e., *x*<sub>1</sub> < *X* and there is no other non-blank entry in the column between *x*<sub>1</sub> and *X*.
- *x*<sub>2</sub> is the first *non-blank* entry ABOVE *X*. i.e., *x*<sub>2</sub> > *X* and there is no other non-blank entry in the column between *x*<sub>2</sub> and *X*.
- *p*<sub>1</sub> is the entry in the “*Percentile*” column corresponding to *x*<sub>1</sub> from the column “*Raw Score S1*”.
- *p*<sub>2</sub> is the entry in the “*Percentile*” column corresponding to *x*<sub>2</sub> from the column “*Raw Score S1*”.

Note that there may be several blank entries between *x*<sub>1</sub> and *x*<sub>2</sub>.

- All the blank entries in column “*Raw Score S1*” can now be replaced by the interpolated values.
- The blank entries in column “*Raw Score S2*” are also replaced using a similar procedure.

### **Illustration (Continued):**

The table in the illustrative example would look like the following, where the entries in **red/bold** indicate the addition output at the end of this step.

Candidate	Percentile	Raw Score S1	Raw Score S2
E	<i>P</i> <sub>E</sub>	<b><i>X</i><sub>E</sub></b>	<i>y</i> <sub>E</sub>
A	<i>P</i> <sub>A</sub>	<i>x</i> <sub>A</sub>	<b><i>Y</i><sub>A</sub></b>
C&F	<i>P</i> <sub>C</sub> = <i>P</i> <sub>F</sub>	<i>x</i> <sub>C</sub>	<i>y</i> <sub>F</sub>
B	<i>P</i> <sub>B</sub>	<i>x</i> <sub>B</sub>	<b><i>Y</i><sub>B</sub></b>
D	<i>P</i> <sub>D</sub>	<b><i>X</i><sub>D</sub></b>	<i>y</i> <sub>D</sub>

### **Step3: Calculation of the Normalised Score**

Now for each exam *there is a score assigned to each percentile value for each shift*. The **Normalised score, Z**, corresponding to a percentile value *P*, is calculated as:

$$Z = \text{Average of } (u, u_B, u_C, \dots \dots u_t) = \frac{u_A + u_B + u_C + \dots \dots + u_t}{t}$$

Where  $u, u_B, u_C, \dots \dots u_t$  denote the raw scores corresponding to the percentile *P* in each of different shifts

### **Illustration (Continued):**

The **final** table in the *illustrative example* would be as follows:

Candidate	Percentile	Raw ScoreS1	Raw ScoreS2	Normalized Score
E	$P_E$	$X_E$	$y_E$	$(X_E + y_E)/2$
A	$P_A$	$x_A$	$Y_A$	$(x_A + Y_A)/2$
C&F	$P_C = P_F$	$x_C$	$y_F$	$(x_C + y_F)/2$
B	$P_B$	$x_B$	$Y_B$	$(x_B + Y_B)/2$
D	$P_D$	$X_D$	$y_D$	$(X_D + y_D)/2$

### **Step- by- Step Procedure for Converting from Raw Score to Normalized Score: -**

**Example:** Suppose a test was held in 4 phases of examinees as per details given below: -

(Allocation of Days and shifts were done randomly)

Session	Day	Shift	No of Candidates			Raw Score	
			Absent	Appeared	Total	Highest	Lowest
Session-1	Day-1	Shift-1	3974	28012	31986	200	-40
Session-2	Day-1	Shift-2	6189	32541	38730	194	-36
Session-3	Day-2	Shift-1	6036	41326	47362	188	-36
Session-4	Day-2	Shift-2	9074	40603	49677	200	-40
Total (Session-1 to Session-4)			25273	142482	167755	200	-40

i. Highest Raw Score and Percentile Score: -

Session	Total Candidates Appeared	Highest Raw Score	Candidates who scored EQUAL OR LESS THAN Highest Raw Score	Percentile Score	Remarks
Session-1	28012	200	28012	100.0000000 [(28012/28012) *100]	i.e., All the highest raw scores would be normalized to 100 Percentile Score for their respective session.
Session-2	32541	194	32541	100.0000000 [(32541/32541) *100]	
Session-3	41326	188	41326	100.0000000 [(41326/41326) *100]	
Session-4	40603	200	40603	100.0000000 [(40603/40603) *100]	

ii. Lowest Score and Percentile Score: -

Session	Total Candidates Appeared	Lowest Raw Score	Candidates who scored EQUAL OR LESS THAN Highest Raw Score	Percentile Score	Remarks
Session-1	28012	-40	1	0.0035699 [(1/28012) *100]	i.e., Percentile Score of all the lowest raw scores are different i.e., Percentile Score depend on the total number of candidates who have taken the examination for their respective session.
Session-2	32541	-36	1	0.0030730 [(1/32541) *100]	
Session-3	41326	-36	1	0.0024198 [(1/41326) *100]	
Session-4	40603	-40	1	0.0024629 [(1/40603) *100]	

**Step1: Convert Raw Score into Percentile Score**

The percentile score for this candidate is then calculated as:

$$\text{Percentile Score} = 100 \times \frac{\text{No. of Candidates appeared from the session with raw score EQUAL TO OR LESS than T Score}}{\text{Total No. of Candidates appeared in the session}}$$

Candidate	Raw Score S1	Percentile Score
A20020720	200	100
A20411664	192	99.969144
A20018569	190	99.831255
A20339879	184	99.732901
A20074407	180	99.432054
A20751862	88	88.654575
A20922992	48	74.137715
A21004667	40	69.290405
A21141123	22	52.135343
A25465232	8	30.675846
A26545946	6	27.584445
A25656543	2	24.886459
A26625216	1	22.351432
A26174451	0	19.997686
A25463225	-1	15.23523
A26598636	-6	11.104361
A26596462	-40	0.053034

Candidate	Raw Score S2	Percentile Score
B20123935	194	100
B20012622	192	99.9990405
B20656224	100	96.9671093
B20410215	42	69.2904047
B20236444	26	67.7672549
B20128586	14	46.3751151
B20001667	4	27.0887703
B20042147	2	23.9100399
B20051256	0	12.225608
B20481968	-2	11.6211621
B20091701	-12	10.4982563
B20549576	-14	10.3947421
B20098269	-30	10.2430506
B20071356	-36	0.053034

Candidate	Raw Score S3	Percentile Score
C20150694	188	100
C20087997	186	99.969144
C20121991	184	99.831255
C20058572	180	99.732901
C20060310	172	99.432054
C20008597	56	78.338974
C20430859	36	69.00182
C20518247	20	52.135343
C20045510	14	38.091932
C20860609	9	30.675846
C20861476	5	27.584445
C20512680	3	24.886459
C20069270	2	22.351432
C20355550	0	12.188701
C20549576	-3	11.23523
C26598636	-22	0.0539983
C26596462	-36	0.053034

Candidate	Raw Score S4	Percentile Score
D20479616	200	100
D20040337	194	99.9990405
D20467385	98	88.6545749
D20398094	44	68.9660903
D20428934	40	49.5097099
D20032939	32	46.3751151
D20690279	30	27.0887703
D20840699	28	23.9100399
D20084751	26	20.8800276
D21237483	24	12.1887008
D21077463	1	11.5349248
D20348188	-2	11.0243302
D25463225	-40	0.053034

**Step2:** Pull Back of the percentiles to the marks scale for each session to get Normalized marks.

Candidate	Percentile Score	Raw Score S1	Raw Score S2	Raw Score S3	Raw Score S4
A20020720=B20123935=C20150694=D20479616	100	200	194	188	200
B20012622=D20040337	99.99904053	-	192	-	194
A20411664=C20087997	99.9691438	192	-	186	-
A20018569=C20121991	99.8312554	190	-	184	-
A20339879=C20058572	99.7329013	184	-	180	-
A20074407=C20060310	99.4320538	180	-	172	-
B20656224	96.9671093	-	100	-	-
A20751862=D20467385	88.6545749	88	-	-	98
C20008597	78.3389742	-	-	56	-
A20922992	74.1377149	48	-	-	-
A21004667=B20410215	69.2904047	40	42	-	-
C20430859	69.0018201	-	-	36	-
D20398094	68.9660903	-	-	-	44
B20236444	67.7672549	-	26	-	-
A21141123=C20518247	52.1353428	22	-	20	-
D20428934	49.50970986	-	-	-	40
B20128586=D20032939	46.37511514	-	14	-	32
C20045510	38.0919321	-	-	14	-
A25465232=C20860609	30.6758464	8	-	9	-
A26545946=C20861476	27.5844446	6	-	5	-
B20001667=D20690279	27.08877034	-	4	-	30
A25656543=C20512680	24.886459	2	-	3	-
B20042147=D20840699	23.91003991	-	2	-	28
A26625216=C20069270	22.3514324	1	-	2	-
D20084751	20.88002763	-	-	-	26
A26174451	19.9976858	0	-	-	-
A25463225	15.23523	-1	-	-	-
B20051256	12.225608	-	0	-	-
C20355550=D21237483	12.1887008	-	-	0	24
B20481968	11.62116211	-	-2	-	-
D21077463	11.53492478	-	-	-	1
C20549576	11.23523	-	-	-3	-
A26598636	11.1043613	-6	-	-	-
D20348188	11.0243302	-	-	-	-2
B20091701	10.49825625	-	-12	-	-
B20549576	10.39474209	-	-14	-	-
B20098269	10.2430506	-	-30	-	-
C26598636	0.0539983	-	-	-22	-
A26596462=B20071356=C26596462=D25463225	0.053034	-40	-36	-36	-40

In the remaining part of this Step2, the blank entries in the Raw Score Columns are filled up using following linear interpolation Formulae:

$$X = x_1 + \frac{x_2 - x_1}{p_2 - p_1} (P - p_1)$$

Candidate	Percentile Score	Raw Score S1	Raw Score S2	Raw Score S3	Raw Score S4
A20020720=B20123935=C20150694=D20479616	100	200	194	188	200
B20012622=D20040337	99.9990405	199.7512409	192	187.93781	194
A20411664=C20087997	99.9691438	192	171.96504	186	171.96504
A20018569=C20121991	99.8312554	190	167.63275	184	167.63275
A20339879=C20058572	99.7329013	184	164.54257	180	164.54257
A20074407=C20060310	99.4320538	180	155.09028	172	155.09028
B20656224	96.9671093	158.958447	100	158.4442	101.91063
A20751862=D20467385	88.6545749	88	82.580043	112.72997	98
C20008597	78.3389742	56.7810489	60.96241	56	69.707196
A20922992	74.1377149	48	52.158146	47.207694	58.184318
A21004667=B20410215	69.2904047	40	42	36.629757	44.889504
C20430859	69.0018201	39.6972017	38.968549	36	44.097997
D20398094	68.9660903	39.6597121	38.593224	35.966106	44
B20236444	67.7672549	38.4018305	26	34.828858	43.753534
A21141123=C20518247	52.1353428	22	17.231221	20	40.539799
D20428934	49.5097099	20.1081761	15.758363	18.878207	40
B20128586=D20032939	46.3751151	17.8496346	14	17.538962	32
C20045510	38.0919321	11.8814266	9.7051566	14	31.141031
A25465232=C20860609	30.6758464	8	5.8599046	9	30.371981
A26545946=C20861476	27.5844446	6	4.2570079	5	30.051402
B20001667=D20690279	27.0887703	5.2651195	4	4.6325597	30
A25656543=C20512680	24.886459	2	2.6143453	3	28.614345
B20042147=D20840699	23.9100399	1.6148289	2	2.6148289	28
A26625216=C20069270	22.3514324	1	1.7332164	2	26.97122
D20084751	20.8800276	0.374867	1.4813591	1.7104312	26
A26174451	19.9976858	0	1.3303305	1.5367886	25.79696
A25463225	15.23523	-1	0.5151508	0.5995493	24.70105
B20051256	12.225608	-4.6428439	0	0.0072632	24.008493
C20355550=D21237483	12.1887008	-4.6875164	-0.122119	0	24
B20481968	11.6211621	-5.3744647	-2	-1.785703	4.0338503
D21077463	11.5349248	-5.4788463	-2.767984	-2.057041	1
C20549576	11.23523	-5.8415966	-5.436905	-3	-0.760858
A26598636	11.1043613	-6	-6.602352	-3.222382	-1.529777
D20348188	11.0243302	-6.24622	-7.315066	-3.358377	-2
B20091701	10.4982563	-7.8647146	-12	-4.252322	-3.822101
B20549576	10.3947421	-8.1831815	-14	-4.428221	-4.180631
B20098269	10.2430506	-8.6498685	-30	-4.685987	-4.706027
C26598636	0.0539983	-39.9970333	-35.99943	-22	-39.99666
A26596462=B20071356=C26596462=D25463225	0.053034	-40	-36	-36	-40

Step3: Calculation of Normalized Score:

$$Z = \text{Average of } (u, u_B, u_C, \dots \dots u_t) = \frac{u_A + u_B + u_C + \dots \dots + u_t}{t}$$

Candidate	Percentile Score	Raw Score S1	Raw Score S2	Raw Score S3	Raw Score S4	Normalised Marks
A20020720=B20123935=C20150694=D20479616	100	200	194	188	200	195.5
B20012622=D20040337	99.999041	199.7512409	192	187.9378	194	193.4223
A20411664=C20087997	99.969144	192	171.965	186	171.965	180.4825
A20018569=C20121991	99.831255	190	167.6327	184	167.6327	177.3164
A20339879=C20058572	99.732901	184	164.5426	180	164.5426	173.2713
A20074407=C20060310	99.432054	180	155.0903	172	155.0903	165.5451
B20656224	96.967109	158.958447	100	158.4442	101.9106	129.8283
A20751862=D20467385	88.654575	88	82.58004	112.73	98	95.3275
C20008597	78.338974	56.7810489	60.96241	56	69.7072	60.86266
A20922992	74.137715	48	52.15815	47.20769	58.18432	51.38754
A21004667=B20410215	69.290405	40	42	36.62976	44.8895	40.87982
C20430859	69.00182	39.6972017	38.96855	36	44.098	39.69094
D20398094	68.96609	39.6597121	38.59322	35.96611	44	39.55476
B20236444	67.767255	38.4018305	26	34.82886	43.75353	35.74606
A21141123=C20518247	52.135343	22	17.23122	20	40.5398	24.94276
D20428934	49.50971	20.1081761	15.75836	18.87821	40	23.68619
B20128586=D20032939	46.375115	17.8496346	14	17.53896	32	20.34715
C20045510	38.091932	11.8814266	9.705157	14	31.14103	16.6819
A25465232=C20860609	30.675846	8	5.859905	9	30.37198	13.30797
A26545946=C20861476	27.584445	6	4.257008	5	30.0514	11.3271
B20001667=D20690279	27.08877	5.2651195	4	4.63256	30	10.97442
A25656543=C20512680	24.886459	2	2.614345	3	28.61435	9.057173
B20042147=D20840699	23.91004	1.6148289	2	2.614829	28	8.557414
A26625216=C20069270	22.351432	1	1.733216	2	26.97122	7.926109
D20084751	20.880028	0.374867	1.481359	1.710431	26	7.391664
A26174451	19.997686	0	1.330331	1.536789	25.79696	7.16602
A25463225	15.23523	-1	0.515151	0.599549	24.70105	6.203938
B20051256	12.225608	-4.6428439	0	0.007263	24.00849	4.843228
C20355550=D21237483	12.188701	-4.6875164	-0.12212	0	24	4.797591
B20481968	11.621162	-5.3744647	-2	-1.7857	4.03385	-1.28158
D21077463	11.534925	-5.4788463	-2.76798	-2.05704	1	-2.32597
C20549576	11.23523	-5.8415966	-5.43691	-3	-0.76086	-3.75984
A26598636	11.104361	-6	-6.60235	-3.22238	-1.52978	-4.33863
D20348188	11.02433	-6.24622	-7.31507	-3.35838	-2	-4.72992
B20091701	10.498256	-7.8647146	-12	-4.25232	-3.8221	-6.98478
B20549576	10.394742	-8.1831815	-14	-4.42822	-4.18063	-7.69801
B20098269	10.243051	-8.6498685	-30	-4.68599	-4.70603	-12.0105
C26598636	0.0539983	-39.9970333	-35.9994	-22	-39.9967	-34.4983
A26596462=B20071356=C26596462=D25463225	0.053034	-40	-36	-36	-40	-38



The above method is based on the work: "Normalization of marks in multi-session examinations", Abhay G. Bhatt et al, CURRENT SCIENCE, Vol. 118, No. 1, 10 January 2020

