

## Technical Report: September 2022 CHRL ELE

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**HR** | Human Resources  
**PA** | Professionals Association

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# Executive Summary<sup>1</sup>

*Note that this technical report covers only the primary new form or forms administered during an administration, and not detailed results for all forms used.*

The CHRL Employment Law Exam (CHRL ELE) was administered to 218 candidates using computer-based testing via live remote proctoring September 21–October 5, 2022, inclusive. The examination comprised 110 three-option multiple choice items and had a 3½-hour time limit.

As per the CHRL ELE blueprint, the exam was scored using the 98–102 best-performing items (while adhering to the prescribed distribution across topics). The mean score for first-time candidates ( $n=199^2$ ) was 74.0 (72.6%), and for all candidates it was 73.6 (72.1%), out of 102 validated items for scoring. Reliability was borderline at .79 (noting that there is range restriction with these candidates, and the disattenuated value was .84). The final set of scored items adhered to the blueprint parameters.

The pass mark was set using equating back to the September 2021, January 2022, and March 2022 administrations, yielding an integer pass mark of 64. Equating was conducted to compensate for minor changes in exam form difficulty so that any given candidate has an equivalent hurdle regardless of when they write the CHRL ELE. This pass mark resulted in a pass rate for first-time candidates of 86.4% and a pass rate for all candidates of 86.2%.

This report, the analyses performed, and the processes followed are consistent with NCCA standards<sup>3</sup> and ISO 17024 standards.<sup>4</sup>

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<sup>1</sup> This technical report is an abbreviated version of the full report. Information has been excluded that if known to candidates could negatively affect the validity of future candidate test score interpretations. This includes item-level statistics, some information about the construction of test forms, and some specific details concerning equating.

<sup>2</sup> Excludes those who had failed an HRPAs employment law examination in the past, who were identified as being statistical outliers, or who had written an alternative test form.

<sup>3</sup> National Commission for Certifying Agencies (2014). *Standards for the accreditation of certification programs*. Washington, DC: Institute for Credentialing Excellence.

<sup>4</sup> International Organization for Standardization (2012). *ISO/IEC 17024:2012 Conformity assessment – General requirements for bodies operating certification of persons*. Geneva: International Organization for Standardization.

# Administration

## Form Setting

Using only validated test items, Wickett Measurement Systems prepared one 110-item test form. Wickett constructed the final test form according to the following parameters:

1. Including only items validated by the validation panel in the past 2 years
2. Fitting the total item count of 110
3. Excluding enemy items
4. Matching the blueprint weights
5. Maximizing spread across subtopics as per the blueprint weights
6. Reducing item exposure
7. Selecting items with perceived psychometric effectiveness, using statistics from previous administrations as available

After selecting the 110 items for each form, Wickett split the forms in half to allow for the administration of the exam in two sections. Section 1 was allocated 55 items and Section 2 was allocated 55 items. With each form, the two sections were set to balance for:

- Proportion of independent items and case sets
- Number of words
- Item difficulty
- Item discrimination (adjusted point-biserial)
- Number of experimental items
- Adherence to blueprint
- Number of anchor items

The final form was reviewed for currency and enemy items by Jennifer King and Annette Dhanasar (CHRL Examination Validation Committee members), facilitated remotely, in a session held June 23, 2022.

The final form composition for the primary September 2022 CHRL ELE is shown in Table 1 (domain weighting) and Table 2 (cognitive level weighting). The form reflected the examination blueprint (see Appendix for full CHRL ELE blueprint).

Note that at any administration, HRPAs make use of previously validated and administered test forms along with new test forms, in addition to employing other mechanisms to maintain the integrity of the exams and candidate scores.

Table 1: Domain fit at administration

Domain	Actual Items	Target Range	Target Items	Variance
A Employment Contracts and Terminations	50	46% ± 5%	46–56	—
B Employer Obligations	37	33% ± 4%	32–40	—
C Regulations and Legislation	23	21% ± 3%	20–26	—
<b>TOTAL</b>	<b>110</b>		<b>110</b>	<b>—</b>

Table 2: Cognitive level fit at administration

Cognitive Level	Actual Items	Target Range	Target Items	Variance
Knowledge	11	10% ± 3%	8–14	—
Application	55	50% ± 10%	44–66	—
Critical thinking	44	40% ± 10%	33–55	—
<b>TOTAL</b>	<b>110</b>		<b>110</b>	<b>—</b>

The test form adhered to the blueprint for content domain and cognitive level.

## Testing Window

The examination was administered via computer-based testing using live remote proctoring and at Prometric test sites primarily in Ontario. The testing window was September 21–October 5<sup>5</sup>, 2022, inclusive, and 218 candidates wrote the exam.

Candidates were able to select either a test centre (assuming one was available reasonably close to them) or live remote proctoring from a location of their choosing. Standard security methods (as per Prometric protocols<sup>6</sup>) were employed for both methods. Candidates were allowed one 15-minute break after submitting section 1 and before beginning section 2. This break did not count against total time for the candidate.

Candidates had access to a basic-function calculator on screen and access via PDF to 10 pieces of searchable legislation (compiled into 2 documents):

### Provincial

- AODA – *Accessibility for Ontarians with Disabilities Act, 2005*
- ESA – *Employment Standards Act, 2000*

<sup>5</sup> The window was extended to October 6 for candidates experiencing technical difficulties.

<sup>6</sup> Information on procedures and security can be found at [www.prometric.com/ProProctor](http://www.prometric.com/ProProctor) and [www.prometric.com/proproctorcandidate](http://www.prometric.com/proproctorcandidate).

- LRA – *Labour Relations Act, 1995*
- OHRC – *Human Rights Code*
- OHSAA – *Occupational Health and Safety Act*
- PEA – *Pay Equity Act*
- WSIA – *Workplace Safety and Insurance Act, 1997*

*Federal*

- CHRA – *Canadian Human Rights Act*
- CLC – *Canada Labour Code*
- PIPEDA – *Personal Information Protection and Electronic Documents Act*

The versions of the legislation were as accessed on May 16, 2022.



# Analysis

## Data Cleaning and Integrity Checks

Prometric provided data in .xml format via a secure ftp site. Candidate files were provided as candidates completed the examination throughout the testing window. These files were extracted to Microsoft Excel for processing. They contained identifying information for each candidate, form information, start and stop times, answer string, key string, candidate total score, item comments if the candidate made any, and time spent per item.

The data files received were reconciled against the roster provided by Prometric to ensure that all .xml files had been received. Further, each candidate total score as computed by Prometric was reconciled with that computed by Wickett for the full set of 110 items to verify key accuracy. Comments on items were also reviewed to identify any specific item-level issues. No problems were encountered.

The average time taken by all candidates was assessed to detect potential examination timing concerns. The distribution is shown in Figure 1. The mean was 3 hours, 0 minutes (3 minutes less than in March 2022). The section 1 mean time was 1 hour, 35 minutes; the section 2 mean time was 1 hour 24 minutes. Seventeen candidates (8%) took the full 3½ hours, suggesting that those candidates may have wanted more time, and 13 candidates (6%) left at least one item blank, suggesting that those candidates timed out of the exam before being able to complete it. These metrics will continue to be monitored, but presently they do not appear problematically high. Compared with the March 2022 administration, there was little change in these values. Note that because they have access to legislation, candidates may take more time by researching more answers. This may generally skew time metrics higher.

Some candidates who were granted an accommodation took longer than the 3½ hours.

The correlation between scores on the 110 items and time spent writing the examination was negligible at a value of  $-.04$ , suggesting that time was not generally related to candidate performance.

Candidate scores were computed across the window to look for any evidence of item exposure. As shown in Figure 2, there was little variation across the window, and the difference between the first 3 days and the last 4 days was a small increase of 1.3 marks out of 110.

As a matter of interest, candidate volumes were also examined across the window; these are also shown in Figure 2. As is usually the case, candidates were more likely to book their session at the end of the testing window.

Figure 1: Examination time distribution for all candidates

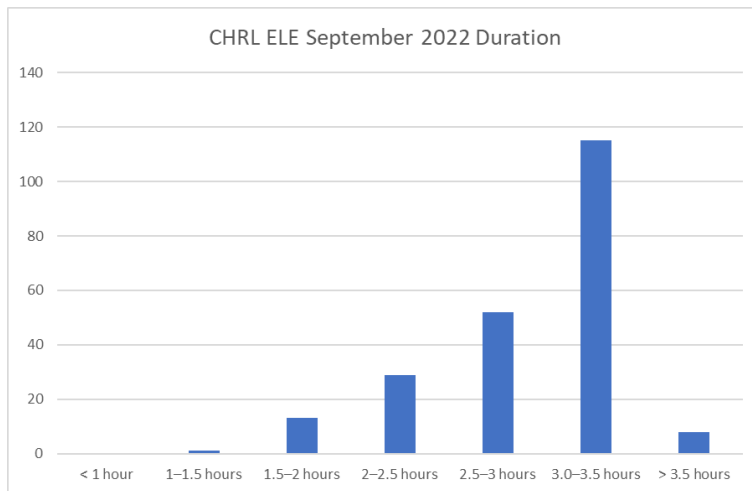
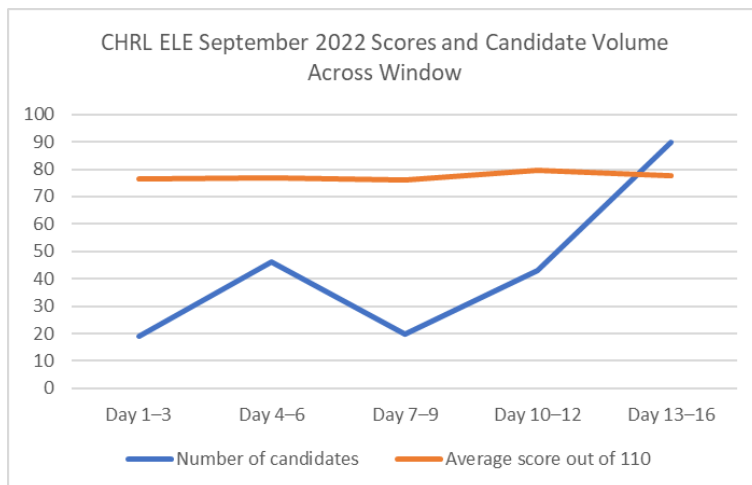


Figure 2: Candidate volume and score trends across testing window



After removing candidates who were administered a previously used test form (who were scored using the same decisions employed at the time that form was originally used), scores were calculated for all remaining candidates based on the full set of 110 items. No candidates were flagged for an abnormally low or high score ( $z$  value outside  $\pm 3.0$ ). Also, the 110 items were arbitrarily broken into 4 blocks of 25 items for each candidate plus 1 final block of 10 items; the 5 resulting subscores for each candidate were evaluated for outliers as well. For candidates with any subscore more than 3 standard deviations (SD) from their average  $z$ -score, the .xml file was examined closely for any issues. All outliers were removed from initial analyses; candidates with abnormal response patterns (such as having 5 or more blanks) were also removed. As a result of these factors, 1 candidate was removed from analyses.

Candidates who had failed a previous employment law examination (CHRP ELE or CHRL ELE) scored lower than did those who had not (72.8 and 78.1, respectively, on the full exam of 110 items). This difference was statistically significant ( $t(36)=3.31$ ,  $p<.01$ ), as is typical of repeat test

takers. In keeping with standard procedures, all repeat candidates were removed from subsequent analyses. The CHRL ELE analysis proceeded with 199 candidates.

Owing to the modest number of candidates, all subsequent analyses were interpreted with caution.

## Post-Examination Survey

Candidates were provided access to the post-examination survey immediately after submitting their responses to the CHRL ELE; 214 candidates responded (response rate, 98%).

Table 3 shows the content-related questions; there was a tendency to more neutrality on these questions though several show moderately high positive ratings. Table 4 shows the responses to the administration-related questions. Note that candidates were generally positive about the administration experience, except with respect to accessing legislation and case text files (Q14) that will be monitored.

**Table 3: Content-related post-examination survey questions\***

	Question	SA	A	N	D	SD	Score	Agree rate	Agree rate last 5 <sup>^</sup>
1.	The time allotted for this examination was sufficient.	64	93	15	30	12	3.78	73%	76%
2.	Information available prior to exam day provided me with adequate details about the content and format of the exam.	62	114	22	13	3	4.02	82%	80%
3.	I feel I was adequately prepared to write this examination.	22	107	64	17	4	3.59	60%	61%
4.	The questions in the examination were clearly written.	21	95	58	34	6	3.43	54%	57%
5.	The terminology used in the examination was accurate.	23	152	29	8	2	3.87	82%	81%
6.	The situations presented in the examination were realistic.	41	149	19	5	0	4.06	89%	85%
7.	The questions in the examination reflected the Employment Law Examination blueprint.	18	140	40	14	2	3.74	74%	69%
8.	The examination was a fair assessment of my ability.	18	105	54	32	5	3.46	57%	54%

\*Response categories: SA = Strongly Agree; A = Agree; N = Neutral; D = Disagree; SD = Strongly Disagree.

<sup>^</sup>Mean value of candidate agreement across the previous 5 administrations.

Table 4: Administration-related post-examination survey questions\*

	Question	SA	A	N	D	SD	Score	Agree rate	Agree rate last 5 <sup>^</sup>
9.	I was able to book to write the examination at a time that was convenient for me.	72	121	9	8	3	4.18	91%	82%
10.	I was well informed about the examination rules and regulations.	94	106	8	5	1	4.34	93%	96%
11.	Proctors enforced the exam-day rules.	114	93	5	1	1	4.49	97%	96%
12.	Proctors were professional and courteous.	114	83	11	3	3	4.41	92%	93%
13.	The tutorial helped me understand how to complete the examination on the computer.	96	102	12	3	0	4.37	93%	89%
14.	The legislation and case texts were easy to access during the examination.	49	89	25	38	13	3.57	64%	63%
15.	Navigation through the examination was easy and intuitive.	61	125	16	10	2	4.09	87%	87%

\*Response categories: SA = Strongly Agree; A = Agree; N = Neutral; D = Disagree; SD = Strongly Disagree.

<sup>^</sup>Mean value of candidate agreement across the previous 5 administrations (excepting Q9 – Q11 which have only been asked in this form since August 2020).

Candidates were asked where they had preferred to write (Table 5) and where they actually wrote the examination (Table 6), and based on their response the questions that followed differed. Table 7 shows that candidates were generally able to write using the modality of their preference.

Table 5: Testing location preference

Response	Count	%
I preferred using my own location.	136	64%
I preferred going to a test centre.	65	30%
I had no preference.	13	6%

Table 6: Actual testing location

Response	Count	%
Test centre	67	31%
Own location	146	69%

Table 7: Testing location preference by actual testing location

Response	LRP*	TC^
I preferred using my own location.	130	5
I preferred going to a test centre.	6	59
I had no preference.	10	3

\*Live remote proctoring (equivalent to 'own location').

^Test centre.

Candidates who indicated they tested in the own location (via live remote proctoring) responded to questions shown in Table 8 through Table 10. These candidates were generally positive about the experience and identified convenience as the main reason for choosing live remote proctoring. They were also very supportive of HRP A continuing to offer the examination using live remote proctoring.

Table 8: Reason for choosing own location (live remove proctoring candidates)

Response	Count	%
No test centres were open in my area.	18	12%
I preferred to avoid being around other people.	12	8%
I liked the convenience of not having to travel to a test centre.	90	62%
I felt like I would perform better in my own environment.	22	15%
Other (please specify)	4	3%

Table 9: Evaluation of testing experience (live remove proctoring candidates)

	Count	%
Very positive	42	29%
Positive	54	37%
Neutral	36	25%
Negative	12	8%
Very negative	2	1%

Table 10: Value in future candidates being able to test from their own location (live remote proctoring candidates)

Response	Count	%
Yes	146	100%
No	0	0%

Candidates who indicated they tested in a test centre responded as shown in Table 11 through Table 13. These candidates were positive about being able to write at a convenient location and were also positive about their testing experience (and more positive about their testing experience than were live remote proctoring candidates). They were also generally supportive of HRPAs continuing to offer the examination using live remote proctoring.

Table 11: Able to write at a convenient location (test centre candidates)

	Count	%
Strongly agree	27	40%
Agree	29	43%
Neither agree nor disagree	6	9%
Disagree	5	7%
Strongly disagree	0	0%

Table 12: Evaluation of testing experience (test centre candidates)

	Count	%
Very positive	33	49%
Positive	26	39%
Neutral	7	10%
Negative	1	1%
Very negative	0	0%

Table 13: Value in future candidates being able to test from their own location (test centre candidates)

Response	Count	%
Yes	55	82%
No	12	18%

Open-ended questions were also posed to candidates asking for any additional comments in general and regarding test delivery method. Those comments were provided to HRPAs for

information and consideration. Nothing actionable with respect to scoring emerged in these comments.

## Initial Analysis

The full CHRL ELE examination was 110 items, of which approximately 100 were to be scored. The other 8–12 items were designated as experimental. However, because only 1 new form was administered, all items were potentially available for scoring and the focus of subsequent item analysis and key validation was on determining the best set of approximately 100 items that still reflected the examination blueprint.

The initial analysis summary statistics are presented in Table 14. The section statistics are shown in Table 15. Though efforts are taken to have the two sections be comparable across all metrics, in this situation candidates found Section 2 to be easier owing to an unanticipated imbalance of item difficulties on new items.

**Table 14: Initial examination statistics**

Index	CHRL ELE
Items	110
Total candidates	218
Candidates in analysis	199
Mean	78.2 (71.1%)
Range	51–99 (46.4–90.0%)
Standard deviation	9.23
Cronbach's alpha	.78
Disattenuated alpha	.85
Mean $r_{pb}^*$	.17

Table 15: Section item statistics

Index	Section 1	Section 2
Scorable items	55	55
Candidates in analysis	199	
Mean	36.8 (66.9%)	41.4 (75.3%)
Standard deviation	5.3	5.1
Range	22–47	24–53
Mean time (minutes)	95.3	84.8
Words	6660	6659

A comparison between live remote proctoring candidates (mean score = 76.4) and test centre candidates (mean score = 80.6) was made which showed a significant difference favouring test centre candidates ( $t(216)=3.19, p<.01$ ). Though significant, the difference is not substantial and not in a problematic direction.

Though not reported here, several additional analyses were added with administration to investigate potential candidate misconduct. These results were reported confidentially to HRP.

Standard classical test theory analysis was conducted to identify the following:

1. Item difficulty (percent obtaining correct result,  $p$ )
2. Item discrimination (corrected point-biserials,  $r_{pb}^*$ )
3. Distractor quality (based primarily on distractor discrimination)

Wickett compiled these statistics, along with any comments made by candidates concerning flagged items, to identify items that may have been keyed incorrectly or that were performing poorly. Most emphasis was placed on the corrected point-biserials as evidence of item quality, after removing items at the extremes of difficulty. Because of the relatively low variance and sample size, items with marginally negative point-biserials were to be expected and these low values were not necessarily indicative of poor item quality. Items were ranked from worst performing to best performing accordingly.

## Key Validation

Key validation was conducted via web meeting on October 17, 2022, using members of the CHRL Examination Validation Committee (EVC). The group (Table 16) was first reminded of the methods used for key validation and was oriented to the main statistics used to evaluate the quality of the CHRL ELE.



Table 16: CHRL Examination Validation Committee – Key validation

Member	Credential	Years of Relevant Experience	Start on EVC	Industry
✓ Nancy Richard, CHAIR	CHRL	15–19	2017	Canadian Nuclear Safety Commission
Jennifer King, VICE CHAIR	CHRL	20–29	2017	Banking Industry
✓ Sameera Akram	CHRL	15–19	2022	Global Science and Technology
Liz Austin	CHRL	10–15	2021	Unionized
✓ Nadine Bellhouse	CHRL	15–19	2019	Printing
✓ Jennifer Borges	CHRL	10–14	2017	Manufacturing
Tanya Dacres	CHRL	15–19	2021	Digital Business/Transformation
✓ Annette Dhanasar	CHRL	15–19	2017	Real Estate
Maja Falarz	CHRL	5–9	2017	Stock Exchange
Christine Kelsey	CHRL	5–9	2017	Media
Kelly McDonald	CHRL	15–19	2022	Port Authority
Cynthia Ogbarney-Tetteh	CHRL	15–19	2022	Municipal
Karen Pantaleo	CHRL	20–29	2019	Healthcare / Consulting

✓ Participated in the session.

The group was informed that test reliability, as measured by Cronbach's alpha, was .78 based on the set of 110 potentially scored items and that this was below the generally accepted threshold of .80. The group was advised that restriction of range was considered the most likely basis for the lower value and were provided with the disattenuated value of .85 as an estimate of the true reliability of these test scores. They were also informed that part of the goal of the key validation review was to bring this value up if possible.

The group was walked through the flagged items one at a time, with the recommendation that the worst-performing items be removed from scoring but were given less direction on those with borderline statistics. Where available, candidates' comments about the items were also shown. The group made decisions based on content and the data through discussion; they removed 8 items that they felt were least appropriate to retain for scoring. Panel members' comments about specific items were recorded for future item revision activities.

Not all remaining items were strong-performing, and several items were retained that were very easy or very hard or that had a low corrected point-biserial (generally in cases where historic data suggested stronger statistics). Most were moderate to strong items, however. The final alpha for the set of 102 scored items was .79 (disattenuated alpha was .84). The difficulties ranged from 35.2% to 96.0%, with a mean of 72.6%. The  $r_{pb}^*$  values ranged from  $-.02$  to  $.41$ , with a mean of  $.18$ . Note that with a small sample of candidates, negative point-biserial values

are not necessarily a sign of a problematic item, and items that have performed well in the past were more likely to be retained even if showing a poor point-biserial in this candidate sample.

Table 17 shows the scored CHRL ELE's final fit to the domain weighting. Table 18 shows the same for cognitive level, and Table 19 shows the same for item type. The exam fit on all dimensions.

The group endorsed the final set of items for use in scoring the September 2022 CHRL ELE candidates.

Table 17: Domain fit for final scored items

Domain	Actual Items	Target Range	Target Items	Variance
A Employment Contracts and Terminations	48	46% ± 5%	42–52	—
B Employer Obligations	35	33% ± 4%	30–37	—
C Regulations and Legislation	19	21% ± 3%	19–24	—
<b>TOTAL</b>	<b>102</b>		<b>102</b>	<b>—</b>

Table 18: Cognitive level fit for final scored items

Cognitive Level	Actual Items	Target Range	Target Items	Variance
Knowledge	11	10% ± 3%	8–13	—
Application	49	50% ± 10%	41–61	—
Critical thinking	42	40% ± 10%	31–51	—
<b>TOTAL</b>	<b>102</b>		<b>102</b>	<b>—</b>

Table 19: Item type fit for final scored items

Item Type	Actual Items	Target Range	Target Items	Variance
Independent	26	25% ± 3%	23–28	—
Case	76	75% ± 3%	74–79	—
<b>TOTAL</b>	<b>101</b>		<b>102</b>	<b>—</b>

## Establishing the Pass Mark: Equating

Equating, as per Kolen and Brennan (2014)<sup>7</sup> and Livingston and Kim (2009),<sup>8</sup> was used to establish the pass mark for the September 2022 CHRL ELE. The goal of this process was to set a pass mark that would be equivalent to that set for previous administrations; that is, to set a pass mark that would give each candidate the same probability of passing regardless of which form they took.

The passing standard for the CHRL ELE was last set after the January 2018 offering of the CHRL ELE using the Modified Angoff and Bookmark methods. Specific information on the standard-setting session is provided in the Technical Report issued for the January 2018 administration.

Three equating procedures were conducted back to different administrations (September 2021, January 2022, and March 2022). The intention following these equating runs was to average them to arrive at a final pass mark for the September 2022 CHRL ELE.

### Equating Back to the September 2021 Administration

Linear equating (Tucker) was the chosen method for setting the pass mark and it was conducted once key validation was complete. Linear equating is the primary method considered with more than 100 candidates; equipercentile equating would have been considered with more than 1,000 candidates. With candidate samples of fewer than 100, mean or circle arc equating is most prudent.

All candidates in the analysis (i.e., no repeat candidates or outliers) were used in the equating process. Delta-plot analysis was used to identify anchor items showing substantial deviations (generally, although not exclusively, greater than 3 *SD* units) from expected difficulty values, with an emphasis on establishing an anchor set with difficulty equivalent to that of the full form that adhered to the blueprint. Further, items with very high or low difficulty values and those with low corrected point-biserials were also flagged for potential removal from the anchor set. The goal was a strong midi-test (i.e., moderate range of difficulty, moderate to high discrimination, fit to blueprint) of sufficient length to estimate candidate ability.

The selected set of anchor items had a mean difficulty of 0.73 and a mean corrected point-biserial of .20.

Table 20 shows the fit of the set of anchor items to the blueprint, as percentages. The actual counts are aligned with the targets and reflect the scope and weighting across the full exam.

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<sup>7</sup> Kolen, M.J., & Brennan, R.L. (2014). *Test equating, scaling, and linking*. New York, NY: Springer.

<sup>8</sup> Livingston, S.A., & Kim, S. (2009). The circle-arc method for equating in small samples. *Journal of Educational Measurement*, 46, 330-343.

Table 20: Anchor item fit to blueprint – To September 2021

	Area	Actual	Target
<b>A</b>	Employment Contracts and Terminations	46%	46%
<b>B</b>	Employer Obligations	36%	33%
<b>C</b>	Regulations and Legislation	18%	21%

The mean, Tucker, Levine observed-score, and circle arc methods were computed to ascertain concordance of solutions. Given the sample sizes and similarities of test parameters, Tucker was considered the primary method.

Table 21 shows some of the parameters used to derive the equating estimates, along with other parameters describing the test forms. Of note is that on the anchor items, the sample taking the September 2022 CHRL ELE scored marginally higher than the sample taking the September 2021 CHRL ELE (73.5% vs. 72.9%, respectively;  $t(401)=0.52$ , *ns*). Because the September 2022 CHRL ELE candidates were of marginally higher ability (based on the anchors, non-significance notwithstanding), they should have a marginally higher pass rate (however, the tails of the distribution will be more erratic with small samples).

The equating analysis shows this result (Table 22), though there was a modest drop in pass rate. All methods show a pass mark of 63–64, with the fluctuation due to variance differences (likely partly attributable to the small number of candidates). Given the sample sizes involved, Tucker would be the primary method under consideration.

Table 21: Equating parameter table – To September 2021

		Sep. 2021	Sep. 2022
N		204	199
Scored items		102	102
Mean score	Total	73.9%	72.6%
	Anchors	72.9%	73.5%

Table 22: Equating outcome table – To September 2021

Method	Pass Mark		Pass Rate	
	Precise	Integer	All	First Time
Equating Sep. 2021	65.27	66	85.8%	89.2%
Tucker	62.86	63	87.6%	87.4%
Levine observed	63.53	64	86.2%	86.4%
Mean	63.57	64	86.2%	86.4%
Circle Arc 1	63.43	64	86.2%	86.4%
Circle Arc 2	63.40	64	86.2%	86.4%

### Equating Back to the January 2022 Administration

Linear equating (Tucker) was the chosen method for setting the pass mark and it was conducted once key validation was complete. Linear equating is the primary method considered with more than 100 candidates; equipercentile equating would have been considered with more than 1,000 candidates. With candidate samples of fewer than 100, mean or circle arc equating is most prudent.

All candidates in the analysis (i.e., no repeat candidates or outliers) were used in the equating process. Delta-plot analysis was used to identify anchor items showing substantial deviations (generally, although not exclusively, greater than 3 *SD* units) from expected difficulty values, with an emphasis on establishing an anchor set with difficulty equivalent to that of the full form that adhered to the blueprint. Further, items with very high or low difficulty values and those with low corrected point-biserials were also flagged for potential removal from the anchor set. The goal was a strong midi-test (i.e., moderate range of difficulty, moderate to high discrimination, fit to blueprint) of sufficient length to estimate candidate ability.

The selected set of anchor items had a mean difficulty of 0.72 and a mean corrected point-biserial of .18.

Table 23 shows the fit of the set of anchor items to the blueprint, as percentages. The actual counts are reasonably aligned with the targets and reflect the scope and approximate weighting across the full exam.

Table 23: Anchor item fit to blueprint – To January 2022

	Area	Actual	Target
<b>A</b>	Employment Contracts and Terminations	47%	46%
<b>B</b>	Employer Obligations	33%	33%
<b>C</b>	Regulations and Legislation	19%	21%

The mean, Tucker, Levine observed-score, and circle arc methods were computed to ascertain concordance of solutions. Given the sample sizes and similarities of test parameters, Tucker was considered the primary method.

Table 24 shows some of the parameters used to derive the equating estimates, along with other parameters describing the test forms. Of note is that on the anchor items, the sample taking the September 2022 CHRL ELE scored marginally higher than the sample taking the January 2022 CHRL ELE (72.4% vs. 71.0%, respectively;  $t(325)=1.07$ , *ns*). Because the September 2022 CHRL ELE candidates were of slightly higher ability (based on the anchors), they should have a slightly higher pass rate.

The equating analysis showed this result (Table 25). The methods showed an integer pass mark of 62–63. Given the sample sizes involved, Tucker would be the primary method under consideration and the equated value of 62.22 was carried forward in the analysis.

Table 24: Equating parameter table – To January 2022

		Jan. 2022	Sep. 2022
	N	128	199
	Scored items	101	102
Mean score	Total	71.9%	72.6%
	Anchors	71.0%	72.4%

Table 25: Equating outcome table – To January 2022

Method	Pass Mark		Pass Rate	
	Precise	Integer	All	First Time
Equating Jan. 2022	61.83	62	85.2%	85.9%
Tucker	62.22	63	87.6%	87.4%
Levine observed	61.79	62	88.1%	87.9%
Mean	62.30	63	87.6%	87.4%
Circle Arc 1	61.98	62	88.1%	87.9%
Circle Arc 2	61.98	62	88.1%	87.9%

### Equating Back to the March 2022 Administration

Linear equating (Tucker) was the chosen method for setting the pass mark and it was conducted once key validation was complete. Linear equating is the primary method considered with more than 100 candidates; equipercentile equating would have been considered with more than 1,000 candidates. With candidate samples of fewer than 100, mean or circle arc equating is most prudent.

All candidates in the analysis (i.e., no repeat candidates or outliers) were used in the equating process. Delta-plot analysis was used to identify anchor items showing substantial deviations (generally, although not exclusively, greater than 3 *SD* units) from expected difficulty values, with an emphasis on establishing an anchor set with difficulty equivalent to that of the full form that adhered to the blueprint. Further, items with very high or low difficulty values and those with low corrected point-biserials were also flagged for potential removal from the anchor set. The goal was a strong midi-test (i.e., moderate range of difficulty, moderate to high discrimination, fit to blueprint) of sufficient length to estimate candidate ability.

The selected set of anchor items had a mean difficulty of 0.72 and a mean corrected point-biserial of .18.

Table 26 shows the fit of the set of anchor items to the blueprint, as percentages. The actual counts are aligned with the targets and reflect the scope and weighting across the full exam.

Table 26: Anchor item fit to blueprint – To March 2022

	Area	Actual	Target
<b>A</b>	Employment Contracts and Terminations	48%	46%
<b>B</b>	Employer Obligations	30%	33%
<b>C</b>	Regulations and Legislation	21%	21%

The mean, Tucker, Levine observed-score, and circle arc methods were computed to ascertain concordance of solutions. Given the sample sizes and similarities of test parameters, Tucker was considered the primary method.

Table 27 shows some of the parameters used to derive the equating estimates, along with other parameters describing the test forms. Of note is that on the anchor items, the sample taking the September 2022 CHRL ELE scored lower than the sample taking the March 2022 CHRL ELE (72.4% vs. 74.3%, respectively;  $t(322)=1.60$ , *ns*). Because the September 2022 CHRL ELE candidates were of lower ability (based on the anchors), they should have a lower pass rate (though the tails of the distribution will be more erratic with small samples).

The equating analysis shows this result (Table 28). All methods show a pass mark of 65–66. Given the sample sizes and comparability of anchor parameters, Tucker would be the primary methods under consideration.

Table 27: Equating parameter table – To March 2022

		Mar. 2022	Sep. 2022
N		125	199
Scored items		102	102
Mean score	Total	72.3%	72.6%
	Anchors	74.3%	72.4%



Table 28: Equating outcome table – To March 2022

Method	Pass Mark		Pass Rate	
	Precise	Integer	All	First Time
Equating Mar. 2022	63.23	64	82.2%	89.6%
Tucker	64.62	65	84.9%	85.4%
Levine observed	65.84	66	83.0%	83.9%
Mean	64.78	65	84.9%	85.4%
Circle Arc 1	65.13	66	83.0%	83.9%
Circle Arc 2	65.10	66	83.0%	83.9%

### Combined Results

Table 29 shows the pass mark values across the 3 equating runs. The value highlighted in green is the one that would be selected based on sample parameters at each equating run. Overall, the difference between the Tucker values is relatively small, and the optimal solution without clear reason to do otherwise is to take the weighted average across the 3 values (equalling 63.19 out of 102). Weighting was done by number of anchor items and number of candidates in the previous administration (on the premise that more anchors and more candidates produce a more stable solution). This procedure should serve to lessen the impact of sample-dependent fluctuations. Note that each equating method yields the same weighted integer pass mark.

Using the established convention for this testing program, the averaged pass mark would be rounded up to a cut score of 64. The resulting pass rate for first-time candidates (86.4%) is about the same as in recent administrations, which is in line with expectations from the equating runs. The pass rate for all candidates was 86.2%. See Table 30 for historical pass rates.

The final pass mark value, and the process used to derive it, was presented to the CHRL EVC (Table 31) via teleconference on October 20, 2022. No concerns were raised regarding the process, pass mark or pass rate. The panel formally approved the pass mark (which was presented along with the consequent pass rate data) for recommendation to HRP. The HRP Exams Manager accepted the recommended pass mark on behalf of HRP and so the pass mark was formally established.

Table 29: Equating outcome table – Combined results

	May 21	Sep. 21	Jan. 22	Weighted Average
Tucker	62.9	62.2	64.6	63.2
Levine observed	63.5	61.8	65.8	63.7
Mean	63.6	62.3	64.8	63.5
Circle arc 1	63.4	62.0	65.1	63.5
Circle arc 2	63.4	62.0	65.1	63.5

Table 30: Historical pass rates

	Pass rate	
	All	First-time
Jan. 2020	86.8%	89.6%
Aug.	88.2%	90.7%
Nov.	83.2%	84.7%
Jan. 2021	91.1%	95.2%
May	91.5%	91.7%
Sep.	85.8%	89.2%
Jan. 2022	85.2%	85.9%
Mar.	82.8%	90.3%
Sep.	86.2%	86.4%

Table 31: CHRL Examination Validation Committee – Pass mark approval

Member	Credential	Years of Relevant Experience	Start on EVC	Industry
✓ Nancy RichardIR	CHRL	15–19	2017	Canadian Nuclear Safety Commission
Jennifer King, VICE CHAIR	CHRL	20–29	2017	Banking Industry
Sameera Akram	CHRL	15–19	2022	Global Science and Technology
✓ Liz Austin	CHRL	10–15	2021	Unionized
Nadine Bellhouse	CHRL	15–19	2019	Printing
✓ Jennifer Borges	CHRL	10–14	2017	Manufacturing
Tanya Dacres	CHRL	15–19	2021	Digital Business/ Transformation
Annette Dhanasar	CHRL	15–19	2017	Real Estate
Maja Falarz	CHRL	5–9	2017	Stock Exchange
Christine Kelsey	CHRL	5–9	2017	Media
✓ Kelly McDonald	CHRL	15–19	2022	Port Authority
Cynthia Ogbarney-Tetteh	CHRL	15–19	2022	Municipal
✓ Karen Pantaleo	CHRL	20–29	2019	Healthcare / Consulting

✓ Participated in the session.

## Scoring

To finalize the scoring, candidates who were not included in the item and form analyses were reinserted into the dataset. Scores for each of the 3 domain areas were also computed for each candidate. An Excel file with the final candidate results was provided to HRP.

Table 32 provides the means and standard deviations for the domains and for the total score, using all candidates who took the September 2022 CHRL ELE. Table 33 provides the correlations between each domain. Figure 3 shows the distribution of scores for all candidates, along with the pass mark.

Table 32: Total and domain scores for all candidates

Domain	Percentage	Mean	SD*
A Employment Contracts and Terminations	73%	35.1	5.1
B Employer Obligations	73%	25.5	3.5
C Regulations and Legislation	68%	13.0	2.3
<b>Total score</b>	<b>72.1%</b>	<b>73.6</b>	<b>9.0</b>

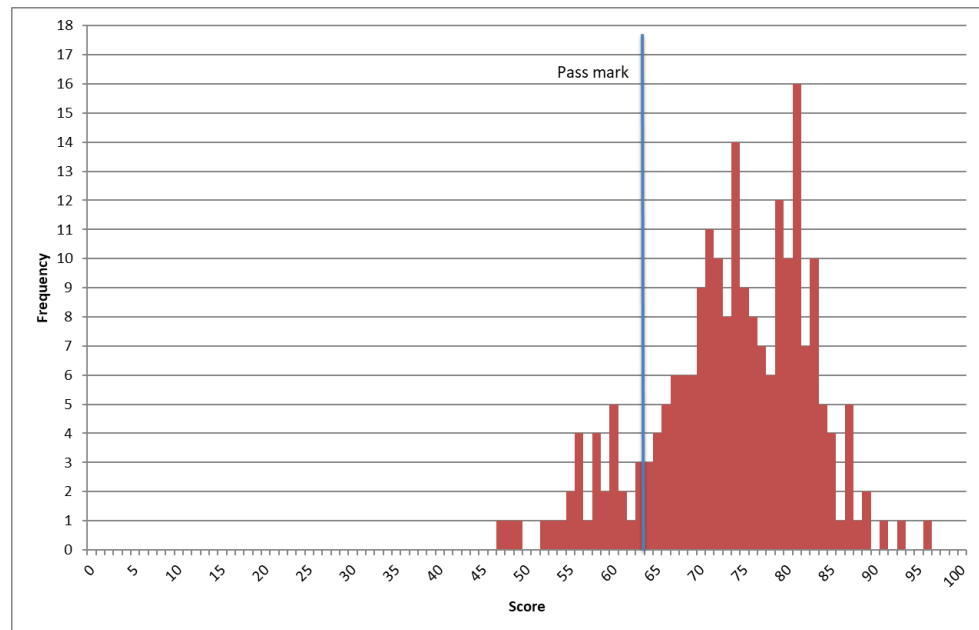
\*SD = Standard deviation.

Table 33: Correlations between functional area scores for all candidates

Domain*	A	B	C
A		.57	.46
B			.33
C			

\*See Table 32 for the full name of each functional area.

Figure 3: Score distribution for all candidates



## Key Examination Metrics

Table 34 shows the key examination metrics for candidates included in the main analysis; that is, only first-time candidates, with outliers removed. Past metrics are provided for reference.

Table 34: Key examination metrics – Candidates included in analysis only

Index	September 2022	March 2022	January 2022	September 2021	May 2021
Scored items	102	102	101	102	102
Candidates	199	124	128	204	229
Mean	74.0 (72.6%)	74.0 (72.5%)	72.6 (71.9%)	75.4 (73.9%)	74.0 (72.6%)
Median	75 (73.5%)	74 (72.5%)	74 (73.3%)	75 (73.5%)	75 (73.5%)
Skewness	-0.643	-0.034	-0.322	-0.107	-0.520
Kurtosis	0.242	-0.021	-0.561	-0.084	0.343
Range	47–96 (46.1– 94.1%)	51–94 (50.0– 92.2%)	52–92 (51.5– 91.1%)	54–95 (52.9– 93.1%)	52–91 (51.0– 89.2%)
Standard deviation	9.09	8.31	9.15	7.98	7.61
Cronbach's alpha	.79	.75	.79	.74	.71
Mean $r_{pb}^*$	.18	.15	.17	.14	.13
SEM <sup>i</sup>	4.12	4.14	4.16	4.06	4.13
SEM at the pass	4.57	4.58	4.60	4.51	4.55
Decision consistency (uncorrected) <sup>ii</sup>	.91	.88	.89	.87	.90
Perceived fairness <sup>iii</sup>	57%	56%	57%	55%	50%
Pass mark	63.194	63.576	61.832	65.270	63.543
Effective pass mark	64	64	62	66	64
Pass rate	86.4%	90.3%	85.9%	89.2%	91.7%

<sup>i</sup>SEM = standard error of measurement.

<sup>ii</sup>Subkoviac method.

<sup>iii</sup>Based on responses to the post-examination survey for all candidates.

## Related Development Activities

Since the last administration of the CHRL ELE in March 2022, the following exam development activities have taken place.

### Item Writing

To fill gaps in the bank and renew content, item writing was conducted in March–May 2022. Item writers (see Table 35) were identified by HRP A and trained in a remote session by Wickett on February 23, 2022.

Table 35: Item writers

Writer	Credentials	Years of Relevant Experience	Industry
Bruce Goldie	CHRL	41	Part-Time Professor, HR Associate - Region of Peel
Enda Soostar	CHRL, LL.M.	30	Full Time Professor
Alanna Twohey	BA, LL.B.	16	Legal Education Services, Lawyer/Professor

The item writers were provided with training via teleconference, and received printable files covering the main elements of the training. The general guidance for writing quality multiple choice items was drawn primarily from Haladyna & Rodriguez (2013).<sup>9</sup>

Each item writer was selected based on expertise in identified topics from the ELE blueprints, and they were assigned items within those topics as per their stated preferences. Item writers were assigned 24 items each to write, for a total of 72 items.

The item writers had access to the style guide that governs language usage on the HRP A exams and were provided with recent textbooks, legislation, and employment law cases as necessary. Item writers were required to include at least one authoritative source to back up each test item, and also provide rationales for the correct and incorrect answers.

Each item writer worked remotely, sending items to Wickett for review and comment via a secure file share site. Items were exchanged until such time as the item writer was comfortable with the content and Wickett was comfortable that the item would be successful at review, validation and upon use with candidates. This generally required several iterations per item.

Once all items were drafted and declared complete, another HR professional was contracted to review the references to ensure they were accurate and on occasion sent items back to the item writer for clarification or a new source. Finally, all items were sent a certified professional editor for editorial review.

<sup>9</sup> Haladyna, T. M., & Rodriguez, M.C. (2013). *Developing and validating test items*. New York, NY: Routledge.

## Validation

To renew the validation of items expiring from usability and to validate newly written items, a validation session was held with the EVC (see Table 36) remotely on September 19 and October 3, 2022.

Table 36: CHRL Examination Validation Committee – Validation

Member	Credential	Years of Relevant Experience	Start on EVC	Industry
<b>Nancy Richard, CHA</b>	CHRL	15–19	2017	Canadian Nuclear Safety Commission
✓ <b>Jennifer King, V CHAIR</b>	CHRL	20–29	2017	Banking Industry
✓ <b>Sameera Akram</b>	CHRL	15–19	2022	Global Science and Technology
✓ <b>Liz Austin</b>	CHRL	10–15	2021	Unionized
<b>Nadine Bellhouse</b>	CHRL	15–19	2019	Printing
✓ <b>Jennifer Borges</b>	CHRL	10–14	2017	Manufacturing
<b>Tanya Dacres</b>	CHRL	15–19	2021	Digital Business/Transformation
✓ <b>Annette Dhanas</b>	CHRL	15–19	2017	Real Estate
✓ <b>Maja Falarz</b>	CHRL	5–9	2017	Stock Exchange
✓ <b>Christine Kelsey</b>	CHRL	5–9	2017	Media
✓ <b>Kelly McDonald</b>	CHRL	15–19	2022	Port Authority
✓ <b>Cynthia Ogbarmey-Tetteh</b>	CHRL	15–19	2022	Municipal
✓ <b>Karen Pantaleo</b>	CHRL	20–29	2019	Healthcare / Consulting

✓ Participated in one or both days of the session.

The EVC members received advance materials outlining:

- Purpose of the session
- Description of the CHRL credential
- CHRL ELE blueprint
- Criteria for good test items
- Validation process
- Relevant legislation

The committee members received refresh training on the validation activity on the first day of the session. Committee members were provided with 80 items and case texts via a secure file share site, and then worked individually reviewing items through the day, submitting their appraisal and any suggested revisions to Wickett through the day. They were directed to make

sure the items reflected current practice and were suitable to make decisions about who should receive the CHRL credential.

At the end of each day, the committee convened online and were shown items flagged for revision. Where committee members proposed changes, these were discussed by the group before implementation.

For each item, the committee was asked to either:

- Validate the item for use in the next two years to make decisions about who would be certified as CHRL
- Move the item to the CHRP ELE bank
- Revise the item to make it suitable for use
- Declare the item unsound and send it back for revision or removal from the bank

At the close of each day, committee members were walked through a process to verify deletion of all item files in use that day.

The committee validated 79 items and case texts as suitable for the CHRL ELE, rejected 1 item, and shifted 0 items for eligibility in the CHRP ELE bank. Twenty-seven items/case texts were revised prior to validation as part of this exercise. The committee also verified the topic and cognitive level for all items, and added rationales and references where missing, incomplete, or not current.



# Appendix

## Blueprint

### CHRL Employment Law Examination Blueprint

Human Resources Professionals Association

*Version 2.0*

*Approved by CHRL Exam Validation Committee March 13, 2018*

*Approved by HRP A Registrar March 14, 2018*

*Effective September 2018 administration*

### Credential

Passing the CHRL Employment Law Examination is a requirement for certification of CHRL candidates.

### Purpose

The CHRL ELE assesses whether a candidate has the ability to make effective decisions when presented with HR situations where comprehension of laws and regulations is centrally relevant, at the CHRL level, in Ontario.

### Structure

The structural variables provide high level guidance as to what the examination will look like. These appear in Table 37.

**Table 37: Employment Law Examination Blueprint Structural Variables**

Item types	75% Case-based 3-option multiple choice (15-20 single scenarios tied to 4-6 test items each)
	25% Independent 3-option multiple choice
Length	110 total items
	8–12 experimental items
Duration	Up to 3½ hours
Delivery mode	Computer based testing in proctored test centres
Frequency	3 windows per year

## Content Weighting

The topic weights were set through a survey of employment lawyers on the most typical situations where employment-related issues are escalated to legal proceedings.

Categories are:

- A. Employment Contracts
- B. Employer Obligations
- C. Regulations and Legislation

Within each Category, the Topics are:

- A. Employment Contracts
  - A1 Termination
  - A2 Contracts
  - A3 Employee Benefits and Perquisites
- B. Employer Obligations
  - B1 Duty to Accommodate
  - B2 Misconduct in the Workplace
  - B3 Common Law
  - B4 Sale of Business
- C. Regulations and Legislation
  - C1 Employment Standards Act
  - C2 Occupational Health and Safety Act
  - C3 Jurisdiction
  - C4 Pay Equity Act
  - C5 Canada Labour Code

The full blueprinted list of Categories, Topics and Subtopics, along with their weighting, appears in Table 38.

Table 38: Employment Law Examination Blueprint Content Weights

Category Weight	Topic Weight	Topic	Subtopic Weight				
46%	A. Employment Contracts and Terminations	28%	A1. Termination	A1.1 Termination with or without cause	8%		
				A1.2 Termination pay, termination notice, and pay in lieu of notice	6%		
				A1.3 Continuation of benefits to employee after termination	5%		
				A1.4 Severance pay entitlements	5%		
				A1.5 What type of income is considered part of terminated employee's salary	2%		
				A1.6 Whether or not it is legal to lay off an employee	1%		
				A1.7 When and how to lay off an employee	1%		
				11%	A2. Contracts	A2.1 Contracts and employment agreements	9%
		A2.2 Collective bargaining contracts	2%				
		7%	A3. Employee Benefits and Perquisites	A3.1 Vacation time, vacation pay and bonuses	5%		
				A3.2 Overtime exemptions	2%		
		33%	B. Employer Obligations	16%	B1. Duty to Accommodate	B1.1 Mental health or physical disabilities	9%
						B1.2 Discriminatory grounds (such as family status, age, marital status, etc.)	5%
						B1.3 The duty to accommodate until undue hardship (the threshold)	2%
						9%	B2. Misconduct in the Workplace
B2.2 HR professional approach to dealing with discipline	2%						
B2.3 Workplace investigations	2%						
6%	B3. Common Law			B3.1 Including consideration of Common Law principles	5%		
				B3.2 Employers' obligations under Common Law	1%		
2%	B4. Sale of Business			B4.1 The effects of the sale of the business	2%		
21%	C. Regulations and Legislation			10%	C1. Employment Standards Act	C1.1 How to properly interpret the <i>Employment Standards Act, 2000</i>	5%
						C1.2 Probation period under <i>Employment Standards Act, 2000</i>	2%
						C1.3 Different leaves permitted under the <i>Employment Standards Act, 2000</i>	2%
						C1.4 Employers' obligations under <i>Employment Standards Act, 2000</i>	1%

<b>4%</b>	<b>C2. Occupational Health and Safety Act</b>	
	C2.1 Making policies that are compliant with the <i>Occupational Health and Safety Act, 1990</i>	2%
	C2.2 Ministry of Labour's rights under the <i>Occupational Health and Safety Act, 1990</i>	2%
<b>4%</b>	<b>C3. Jurisdiction</b>	
	C3.1 The difference between federal and provincial legislations	2%
	C3.2 Determining governing legislation when the organization is interprovincial	2%
<b>2%</b>	<b>C4. Pay Equity Act</b>	
	C4.1 Application of <i>Pay Equity Act, 1990</i>	2%
<b>1%</b>	<b>C5. Canada Labour Code</b>	
	C5.1 Employers' obligations under <i>Canada Labour Code, 1985</i>	1%

Note: Reasonable ranges around the Topic weights are employed.

## Cognitive Level

The cognitive level weights are based on Bloom's taxonomy. The purpose of this weighting is generally to ensure that an examination does not unintentionally over-focus on specific types of items, and to provide candidates with a range of items (in approximate proportion) that reflects the cognitive operations they must apply on the job. The weights appear in Table 39.

Table 39: CHRL Employment Law Examination Blueprint Cognitive Level Weights

Level	Weight	Range
Knowledge	10%	+/- 3%
Application	50%	+/- 10%
Critical Thinking	40%	+/- 10%

## Miscellaneous Guidance

Guidance is not considered binding on the examination, but is used in item development and form development to help create balanced forms.

1. Where scenarios or test items include a workplace, the workplace allocation will be as follows:
  - a. For profit enterprise, 60% (+/- 10%)
  - b. Government, 20% (+/- 5%)
  - c. Not-for-profit, 20% (+/- 5%)
2. 20% (+/- 10%) of workplaces mentioned in scenarios and test items will be unionized.
3. 10% (+/- 5%) of employers mentioned in scenarios and test items will have physical locations in more than one Canadian province.
4. 10% (+/- 5%) of employers mentioned in scenarios and test items will have physical locations both inside and outside of Canada.