Information Booklet
for the Pharmacist Evaluating Examination

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This booklet has been prepared by The Pharmacy Examining Board of Canada. It is reviewed and published annually.
Introduction

As regulated health care professionals, pharmacists are responsible and accountable to patients through legislation and the standards and bylaws of the professional regulatory authority in the province in which they practise. Provincial legislation and standards set out the requirements for licensure to practice. One of the requirements for initial registration and licensure is certification of an applicant’s knowledge, skills and abilities at entry to practice. This certification is granted by the PEBC to those who successfully complete the PEBC Qualifying Examination – Part I (MCQ) and Part II (OSCE). The Board is responsible for:

- assessing the qualifications of pharmacists and pharmacy technicians on behalf of provincial pharmacy regulatory authorities
- ensuring that entry-level pharmacists and pharmacy technicians have the necessary professional knowledge, skills and abilities to practise pharmacy within their scope of practice, in a safe and effective manner.

More information is available on the PEBC website: (http://www.pebc.ca/EnglishPages/General/AboutUs.html)

Registration and Licensure to Practise as a Pharmacist in Canada

Seeking initial registration and licensure to practise as a pharmacist involves the following:

- completion of an approved pharmacy education program, in which the academic institution awards a degree as evidence that the student has successfully completed an approved course of study to become a pharmacist
- successful completion of an evaluation of entry-level competence to practise pharmacy safely and effectively
- fulfilling all requirements of a provincial or territorial regulatory authority, demonstrating the individual's overall qualification and readiness to begin practice as a pharmacist.

The provincial and territorial regulatory authorities (with the exception of Québec) use the Certificate of Qualification, issued by PEBC, as one requirement for licensure. PEBC certification alone does NOT give an individual the right to practise pharmacy. In addition to PEBC certification, each province has additional requirements, such as practical experience, language proficiency, and jurisprudence examinations on pharmacy legislation and practice standards.

Registration and the granting of a provincial or territorial licence provides evidence to the public of the individual's overall qualification, practice training, and readiness to begin
practice as a pharmacist in that jurisdiction. PEBC certification alone does **NOT** give an individual the right to practise.

For further information regarding licensing requirements in a province or territory, contact the provincial regulatory authority (PRA) in the province or territory where you are seeking licensure. (The contact information for the provincial and territorial pharmacy regulatory authorities is available on the PEBC website).

**Language Proficiency**

Candidates for licensure are advised to contact the appropriate provincial regulatory authority for full information regarding language proficiency requirements for licensure in an individual province or territory.

Although PEBC has no language fluency requirements, you are advised that language proficiency will affect performance in both the Pharmacist Evaluating Examination and the Pharmacist Qualifying Examination (Part I and Part II). Effective written and verbal communication skills (at levels satisfactory for a health professional) are essential competencies for practice and for success in taking the PEBC examinations. Do not overlook this important step in your preparations.
Eligibility Requirements for International Pharmacy Graduates Seeking to Take the Pharmacist Qualifying Examination

1. American

If you are a graduate possessing a professional undergraduate degree in pharmacy, accredited by the Accreditation Council for Pharmacy Education (ACPE), you may apply directly for the Pharmacist Qualifying Examination. However, you must first have your qualifications assessed to confirm your eligibility, and you need to contact the PEBC office for further information. All graduates of American Universities must arrange to have their final transcripts sent to PEBC, directly from the university.

2. All Other International Pharmacy Graduates

For all other graduates, you must first have your qualifications evaluated (through PEBC Pharmacist Document Evaluation and the PEBC Pharmacist Evaluating Examination) to determine your eligibility to take the Pharmacist Qualifying Examination. If you have not yet been evaluated in this manner, you should contact the PEBC office, in writing, or check the PEBC website: www.pebc.ca for further information.

PEBC’s Two-step Evaluation Process

If you do NOT meet the eligibility requirements (listed above) to directly take the Pharmacist Qualifying Examination (Part I and Part II), you must first have your qualifications evaluated. The evaluation procedure is a two-step process:

DOCUMENT EVALUATION

- The first step is the evaluation of certain documents to ensure that you possess a qualification that is acceptable for admission into the Pharmacist Evaluating Examination. If your documents have not yet been evaluated, please contact the PEBC office, in writing, or check the PEBC website: www.pebc.ca for further information. Once your qualifications have been evaluated and ruled acceptable, you are eligible to write the Pharmacist Evaluating Examination.

EVALUATING EXAMINATION

- The second step is the successful completion of the Pharmacist Evaluating Examination. The Evaluating Examination is designed to determine if you have completed a program of study comparable to that accredited by The Canadian Council for Accreditation of Pharmacy Programs (CCAPP). It will evaluate your knowledge in all areas of current pharmaceutical education in Canada. Once you pass the Pharmacist Evaluating Examination, you will then be permitted to apply for the Pharmacist Qualifying Examination (Part I and Part II).
General Information

Office Hours

The PEBC office hours are Monday to Friday, 9:00 am to 4:00 pm, for receiving telephone calls and written correspondence by regular mail, email and fax. PEBC is not available for in-person candidate visits. Application forms may not be delivered in person, to the PEBC office.

Note that the office is closed for lunch between 12:00 noon and 1:00 p.m. and no telephone calls are received during the lunch break.

Correspondence

Once you start the PEBC evaluation process, you will be assigned a PEBC Identification Number. Always include your PEBC Identification Number in any correspondence and when contacting the office, whether by phone, fax or email.

Please allow sufficient time to receive a response to any enquiry you make, before contacting the office about the same matter again.

Document Evaluation Approval Deadline Dates

These are the deadline dates for Document Evaluation, that apply to the listed Pharmacist Evaluating Examination dates. Please check and follow all deadline dates carefully.

<table>
<thead>
<tr>
<th>DOCUMENT EVALUATION DEADLINE DATES</th>
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<tbody>
<tr>
<td>April 8 in order to apply for the <strong>July 13 &amp; 14, 2011</strong> Pharmacist Evaluating Examination</td>
</tr>
<tr>
<td>October 7 in order to apply for the <strong>January 11 &amp; 12, 2012</strong> Pharmacist Evaluating Examination</td>
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</table>

If you wish to be considered for an upcoming scheduled Pharmacist Evaluating Examination, you must submit your applications and fees for both Document Evaluation and the Pharmacist Evaluating Examination before the application deadline date.

**IMPORTANT NOTE REGARDING RECEIPT OF ALL DOCUMENTS:**

All Pharmacist Evaluating Examination applications received at PEBC by the application deadline (as stated above) will be held as “conditional”, until successful completion of your Document Evaluation. If your Document Evaluation Materials are **NOT** submitted completely and correctly by the deadline dates as shown above, your examination application will be applied to a future examination date.
Examination Dates

The PEBC Pharmacist Evaluating Examination will be administered twice during the 2011-2012 testing year.

2-DAY FORMAT:

The Pharmacist Evaluating Examination will be held over a two-day period, with a 3.5 hour (half-day) written, multiple-choice question examination sitting held on each of the two days.

<table>
<thead>
<tr>
<th>PHARMACIST EVALUATING EXAMINATION DATES</th>
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<td>(Each administration held over 2 days)</td>
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**SUMMER 2011: July 13 & 14, 2011**
Application deadline is **April 8, 2011**

**WINTER 2012: January 11 & 12, 2012**
Application deadline is **October 7, 2011**

Note that these application deadline dates apply **ONLY if:**

1) your Document Evaluation has already been approved;
   or
2) all the required documents for evaluation, in the correct format, are received by PEBC by the Evaluating Examination Application deadline shown here, **AND** if your Document Evaluation is assessed as acceptable.

It is recommended that you **NOT** make your travel arrangements more than one month in advance of the examination date.
Application Procedure

You may apply for Document Evaluation and the Pharmacist Evaluating Examination online. However, you cannot apply online for Document Evaluation and the Pharmacist Evaluating Examination at the same time. You must first apply for Document Evaluation and wait for PEBC to send you an email with your assigned PEBC Identification Number (usually takes one to two weeks). When you have received your PEBC Identification Number, you may then apply online for the next sitting of the Pharmacist Evaluating Examination. Please note that, if you apply online, you must still print off your completed online application form(s) and submit them, along with the checklist(s) and required documentation, to PEBC by the application deadline date. If you complete an application form online but do not send the printed form to PEBC, you will be charged an administrative fee of $100 (Canadian) and your application will not be processed and will be treated as a withdrawal.

If you have funds on account with PEBC, you cannot apply online and you need to print off the application form(s) and complete them manually. Application forms are available on the PEBC website, [www.pebc.ca](http://www.pebc.ca). There are English and French versions of the application forms. Please select the correct version, choosing the same language in which you wish to take the examination. The checklist on page two of the application form must also be completed and signed before the application form is sent to PEBC.

Please note that application forms cannot be delivered in person to the PEBC office.

Please keep us informed about any changes to your contact information (address, telephone number, email address), by advising us in writing by fax, mail or email.

Instructions for first page of application:

1. Enter your name on your application exactly as it appears on your identification.

2. You must indicate the following:
   - your chosen examination date
   - preferred language for the examination
   - preferred location (city) for the examination

3. Fill out all other information requested being sure not to miss anything as it is all required.

4. You will need two, identical, passport-acceptable photographs (with date taken, stamped or written on back by the photographer), for each application. They must
have been taken within twelve months of the examination date. They cannot be photocopies or digital prints and must be identical. Staple one photograph to the top, left corner of each application form. Paste one photograph in the box provided in the bottom, right corner of each application form.

5. You will need to find an acceptable witness with any of the following qualifications:
   • a notary public
   • a commissioner for oaths
   • a lawyer
   • a staff person at a Canadian Embassy

6. While in the presence of your witness:
   • Sign the application yourself in the space provided
   • Have your witness fill in city, date, name, signature & title/profession
   • Have your witness seal, stamp or sign the front of the photograph located in the bottom, right corner of the application. The signature needs to cover part of the photograph and application

**Checklist (page two of application):**

A checklist has been provided that you will need to sign, date and include with your application. Please go through it carefully in order to double check that you are including all of the information required. **If all of these instructions are not followed we may have to ask for documents to be resubmitted which could cause you to miss the deadline.**

**Receipt of Application:**

Completed application forms (including checklists) and all supporting documents must be received no later than the application deadline date. This includes applications that were printed and paid for using the online process. **Applications that are received after the deadline date will NOT be processed but will be held for a future examination date.**

Overseas candidates who require a visa to take the examination in Canada are strongly encouraged to apply for their visa prior to the application deadline date. Candidates are not eligible for a refund due to a visa refusal, unless they have withdrawn from the examination either before the application deadline date or at least 8 weeks before the date of the examination.

**Please do NOT** contact the PEBC office by telephone, fax or email to confirm receipt of your application or to check your examination location assignment. If you wish to know
whether PEBC has received your application, you must send it by a courier service or by Canada Post (Security Registered), and request an Acknowledgement of Receipt from the delivery service.

Application receipt acknowledgement will NOT be provided by phone or fax. When your application has been received and reviewed by the PEBC office, an email acknowledgment will be sent to your email address within 2 to 4 weeks. Please note the email acknowledgment does NOT ensure that your application is accepted; it simply indicates that PEBC has received your examination application.

**IMPORTANT NOTE REGARDING APPLICATION ACCEPTANCE**

The only acknowledgment of acceptance of your application will be the issuance of one **PEBC Identification/Card of Admission** for the examination, which will be mailed approximately 2 to 3 weeks before the examination date.

At that time, you will also be advised of the exact time and location for the examination, together with other important information. Please read all of the materials in the mailing package very carefully.

If you do not receive this information at least 1 week prior to the examination, please contact us in writing, by email to pebcinfo@pebc.ca.

**Examination Fee**

The examination fee is $515 ($880 for the London, England centre).

Fees must be paid in **Canadian funds**, by cheque, money order or bank draft. Post-dated cheques are not acceptable. All payments from outside of Canada must be in the form **of an international money order or bank draft, drawn on a Canadian bank**. The international money order or bank draft must be one that can be cleared through the clearing system in Canada and not through a manual process (by collection). Money orders or bank drafts issued by a non-Canadian based bank must indicate the transit number of the designated Canadian bank, using standardized coding which is encoded at the bottom of the money order. If the transit number is not encoded PEBC will be unable to cash the money order and your application fee cannot be processed in time to take the examination you have applied for. A $50 administrative fee will be charged for any returned (NSF, etc) cheques. This administrative fee must be in the form of a certified cheque or money order. You may also not be assigned to the examination centre of your preference.
Note: You CANNOT postpone or transfer your application or fee from one session to the next. For example, if you have applied to take the July examination and you decide instead to take the January examination, your application and fee for the July examination is treated as a withdrawal AND you need to re-apply for the January examination.

PEBC reserves the right to change fees for the Pharmacist Evaluating Examination, at any time, as required.

**Examination Centres**

The Evaluating Examination will be held at university locations in Canada each summer and winter, as approved by the Board. The examination centres include: Vancouver, Edmonton, Saskatoon, Winnipeg, Toronto, Montreal, Halifax and St. John's.

The examination will also be available overseas in London, England at an additional fee of $365 (Canadian funds).

Note: The Board reserves the right to cancel the examination at any of the stated locations if there are not enough applicants for that location or for other reasons.

It is recommended that you NOT make your travel arrangements more than one month in advance of the examination date.

**Changing Examination Centres**

If you wish to change examination centres after your application has already been submitted, you must mail your written request, together with an administrative fee of $50 (cheque, money order or bank draft) to the PEBC office. All payments from outside of Canada must be in the form of an international money order or bank draft, drawn on a Canadian bank. The international money order or bank draft must be one that can be cleared through the clearing system in Canada and not through a manual process (by collection). Money orders or bank drafts issued by a non-Canadian based bank must indicate the transit number of the designated Canadian bank, using standardized coding which is encoded at the bottom of the money order. If the transit number is not encoded PEBC will be unable to cash the money order and your application fee cannot be processed in time to take the examination you have applied for. The request and payment must be received no later than:

**May 27, 2011** for the **July 13 & 14, 2011** Pharmacist Evaluating Examination

or

**Note:** Changes to examination centres will be accommodated *only* if space is available at the requested centre.

**Bilingual Examination Booklet**

The Pharmacist Evaluating Examination is available in both official languages: French and English.

If you wish to have a bilingual (French/English) Examination Booklet, you must complete the French version of the application form and indicate that you wish to write the examination in French.

**Special Needs Testing Arrangements**

**Note:** Your request and supporting documentation must be provided with each application form submitted and must be received by the application deadline.

If you have a physical impairment, or other disability which substantially limits one or more major life and work activities, you may make a request for special needs accommodation, which must be submitted at the same time as your examination application. All requests for accommodation for special needs testing arrangements should be submitted to the Registrar-Treasurer and are subject to review and approval. Confidentiality will be maintained.

In addition, if you use assistive devices such as hearing aids or a wheelchair or any other assistive devices, then you must also submit a written request together with the appropriate documentation and your application form. Should the need for an assistive device arise after submission of the application, you must notify PEBC immediately.

You must provide a request letter that clearly states the nature of your disability and its severity, and the nature of special arrangements requested. Your request must be accompanied by an official, original letter (on office stationery) from a qualified professional appropriate for evaluating the disability. It is your responsibility to provide acceptable documentation.

The intent of the medical letter is to provide **current** supporting documentation, including:

- details of the disability, including a professionally-recognized diagnosis, diagnostic procedures, test results and other findings in support of the diagnosis
• history, time frame and assessment of current functioning
• description of the current functional limitation due to the stated disability and its impact on daily life and work activities
• specific recommendations for testing accommodation and why these are needed
• name, address, telephone number and qualifications/credentials of the professional expert.

**Note:** An independent medical or other assessment of the candidate’s testing needs may be required by PEBC.

PEBC will assess such requests on an individual basis, and, if deemed appropriate, will try to offer reasonable testing accommodations. However, **NO** change will be made in the examination content or PEBC rules and policies. You will be required to sign an acknowledgement of the agreement reached with PEBC in advance of the examination date.

PEBC reserves the right to assign the centre(s) where the accommodations can be offered, as all accommodations may not be available at any given examination centre. This may require that a candidate accept assignment to a centre other than his or her preferred centre choice(s).

Since arrangements for some accommodations may have significant cost and other resource implications, a candidate who has signed an agreement to the conditions of an accommodation will be bound by those conditions. Once arrangements have been confirmed, cancellations are not permitted and the examination fee cannot be refunded.
Withdrawal/Refund Policies

Note: You CANNOT postpone or transfer your application or fee from one session to the next. For example, if you have applied to take the July examination and you decide instead to take the January examination, your application and fee for the July examination is treated as a withdrawal and you need to re-apply for the January examination.

If you withdraw or are absent from the examination, part of the examination fee for each application will be refunded according to the following conditions:

(i) If your notice of withdrawal is received, in writing, by fax, or mail (including email), in the PEBC office on or before the application deadline, your full fee less an administrative fee of $100 will be refunded to you.

(ii) If you withdraw after the application deadline but up to 8 weeks before the date of the examination, an administrative fee of 50% of the fee will be charged. The remaining 50% of your fee will be refunded to you.

(iii) If you withdraw less than eight weeks before the examination, you will not receive a refund.

(iv) Absence because of certified illness, emergency, bereavement or failure to graduate will be considered case by case. Refunds will be considered but are subject to a minimum $100 administrative fee.

When you request a refund, you must return your PEBC Identification/Card of Admission (if issued), along with appropriate supporting documents (e.g., original medical certificate, etc., within thirty days of the examination). Refunds are processed after the examination session. After a withdrawal, when you re-apply for a future examination session, you must submit a new application form with new photographs and the necessary fee. There is a processing charge of $20 for refunds prepared in the form of a money order (refunds for overseas cannot be processed in the form of a cheque). This amount will be deducted from the total amount of the refund.

Please note that candidates are not eligible for a refund due to a visa refusal, unless they have withdrawn from the examination either before the application deadline date or at least 8 weeks before the date of the examination.
Withdrawal/Absence for Special Circumstances

If unplanned incidents arise immediately before or during the examination or before dismissal from the examination, the Presiding Officer is authorized by the Board to make decisions regarding admission to or continuation through the examination at his/her discretion.

You must immediately notify the PEBC office if:
- you are unable to attend an examination sitting because of illness or for a compassionate reason (e.g., bereavement)
- the matter arises on examination day or just before

You must immediately notify the Presiding Officer at the examination if:
- you are already at the examination centre and the matter arises on examination day
- you are unable to complete the examination

Candidates are strongly encouraged not to attempt the examination and to make an appropriate withdrawal if, prior to the examination, they are ill or have extraordinary circumstances, including bereavement, that may affect their performance on the examination.

Note: Petitions for special consideration received more than seven calendar days after the examination (e.g., upon receipt of a notice of an unsuccessful examination result) will NOT be considered.

Any request for a refund or for another consideration must include documentation verifying the circumstances. The written request, together with appropriate documentation, must be received by the PEBC office no later than 7 calendar days after the examination.

If absent due to illness, you must provide an original medical certificate, verifying that you were examined at the time of the illness. The date of the certificate must be appropriate for, or match, the examination date.

If absent due to bereavement, you must provide a copy of the death certificate, verifying that the bereavement was at the same time as the examination.

Refunds will be considered for absences due to special circumstances but are subject to a minimum $100 administrative fee.
The Days of the Examination

Examination Day Schedule

You will write the Pharmacist Evaluating Examination in two sittings over two consecutive half-days. Each sitting (examination period) is 3.5 hours in length and is administered according to the following schedule. Your start time is shown on the PEBC Identification/Card of Admission that is mailed to you (see below).

<table>
<thead>
<tr>
<th>15 minutes (prior to exam start time)</th>
<th>Admission to examination room</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Instructions to candidates</td>
</tr>
<tr>
<td>3.5 hours</td>
<td>Examination period</td>
</tr>
</tbody>
</table>

Admission and Identification

Your PEBC Identification/Card of Admission (including location and time) will be sent to you 2-3 weeks before the examination. You will also receive a password which you will need to access other important information about the examination, including the release of results. It is important to read all materials very carefully before the examination. Your PEBC Identification/Card of Admission must be brought to the examination room for each sitting and placed on your examination desk for inspection by the Presiding Officer and Invigilators (examination personnel). If a female candidate cannot be identified due to a veil covering her face, a female Invigilator will be assigned to take the candidate to a private area where the Invigilator can confirm the candidate’s identity.

Never write on your PEBC Identification/Card of Admission.

You must arrive 15 minutes before the scheduled start of the examination at the specific location and time indicated on your Identification/Card of Admission. For example, if your examination is scheduled to start at 9:00 am, the report time indicated on your PEBC Identification/Card of Admission will be 8:45 am. You must be at the examination location by 8:45 am. During the 15-minute period between the report time and the examination start time, the Presiding Officer will distribute answer sheets, PEBC calculators and pencils, and provide examination instructions. After instructions are given and all candidates are seated, the Examination Booklets will be distributed and the examination will begin.

If you are more than one hour late, you will be admitted to the examination only with the consent of the Presiding Officer. You will NOT be granted entry once any candidates have left the examination room. No extra time will be provided to candidates who arrive late.
Unless otherwise authorized, only candidates for the scheduled examination who present their PEBC Identification/Card of Admission will be permitted to enter the examination room. Family members or friends of candidates are NOT permitted to enter the examination building.

**Examination Centre Conditions/Environment**

Although PEBC attempts to ensure the comfort of all candidates and personnel, conditions are sometimes beyond our control (e.g., temperature fluctuations). You are encouraged to dress for fluctuating temperatures in examination rooms.

**Note:** There is no smoking on examination premises.

Please do not wear scented cosmetics, perfumes or clothing as some individuals are very sensitive to such substances and you may be refused entry to the examination.

**Candidate Materials**

The examination is closed-book (no aids are permitted except for the calculator provided by PEBC).

No digital watches are permitted. You should take a non-digital watch (with hands to show the hour and minutes) to the examination room in case there is not a clock that you can easily read. It is your responsibility to monitor and use examination time appropriately.

**Pencils (with eraser tips) and standardized scientific calculators will be provided to all candidates.** Calculator instructions are available on the PEBC website and will also be found within each Examination Booklet. Please note that no additional time (for calculator “practice”) will be given to the examination administration. PEBC examination calculations do not require complex operations on the calculator, even though the calculator has many advanced capabilities.

Provision of calculators to all candidates taking PEBC examinations will avoid security concerns associated with programmable personal calculators, and will enhance consistency at all examination centres.
If you must take any medication during the examination time, bring it with you and show it to the Presiding Officer before the examination begins. Any packaging, inserts or related written material must be left at home or handed in to examination personnel.

Items such as passports, wallets or small purses may be placed underneath your chair. Coats, large bags and other belongings must be stored in the location designated by examination personnel.

During the examination period, you will NOT be permitted to have anything on your desk, EXCEPT:

- your PEBC Identification / Card of Admission
- the Examination Booklet
- answer sheet
- pencil (with eraser tip) supplied by PEBC
- a standardized scientific calculator supplied by PEBC
- a beverage and/or a small snack (in a clear plastic bag or see-through container; any wrappers on food products, e.g., chocolate bars, must be removed)

Note: During the examination, calculations or other notations may be written only in the examination booklet (NOT on the answer sheet or your ID / Card of Admission or elsewhere).

Surfaces of desks and all candidate materials and belongings are subject to inspection by examination personnel, at any time.

You Must NOT Bring into the Examination (these items are strictly prohibited):

- books, notes, envelopes, or reference materials of any kind
- calculators, rulers, pencil cases
- digital watches/timepieces
- data organizers or other digital or electronic storage devices
- communication devices of any kind including pagers or cellular telephones
- computers of any kind, including hand-held devices
- photographic, recording or transmission devices of any kind or
- paper items of any kind, whether blank, printed or written upon, including similar items such as wrappers on food or beverages
Note:

The Presiding Officer of Examination Invigilator has the authority to inspect any materials brought into the examination and/or to request that candidates remove outerwear, roll up their sleeves and empty all pockets to permit inspection for watches and other prohibited items.

Any materials that may compromise the administration or security of the examination will be confiscated and the candidate in possession of such materials may not be permitted to begin the examination, or to continue if it has already begun. Confiscated items will be sent to the PEBC for inspection, together with a report of the incident, and will be kept until any inspection or investigation is completed.

During the examination, calculations or other notations may be written only in the examination booklet (NOT on the answer sheet or ID / Card of Admission or elsewhere).

During the Examination

You and other candidates MUST NOT converse or communicate with one another in any manner whatsoever, or speak or read out loud while the examination is underway. Violation of this rule may result in the cancellation of your examination score in the session.

You may converse with examination personnel if required, in a discrete and confidential manner. If you wish to use the washroom or when you are ready to hand in your examination materials, you must raise your hand to indicate this to examination personnel.

Candidates should behave in a professional and courteous manner when interacting with examination personnel.

At the End of the Examination

At the end of the examination, you must leave the examination premises immediately after handing in your Examination Booklet, answer sheet and other examination materials.

You must make all arrangements for transportation before entering the examination site and you must wait outside the building for friends or transportation.
Improper Conduct During or After the Examination

It is assumed that every candidate taking PEBC examinations is doing so for legitimate purposes (to become a licensed pharmacist in Canada) and will make their best effort when attempting a PEBC examination.

Candidates may be removed from the examination and held under supervision until the end when all candidates are permitted to leave, or have other action taken, including possible legal prosecution, for any of the following reasons:

- giving or receiving help during an examination
- attempting to take the examination for someone else
- using notes, books, personal calculators, digital devices of any kind including watches, any unauthorized notations or other aids
- failure to follow the Presiding Officer's instruction, after a warning
- possession or use of photographic, recording or transmission devices in an examination
- writing on any material other than what is provided by PEBC for that purpose (i.e., examination booklet)
- removal of examination materials or notations of any kind from the examination room
- refusal to comply with time allotments or examination administration procedures
- disruption of the examination for other candidates
- reproduction or disclosure of examination content in any manner (including unauthorized notations, engaging in discussion of examination content with anyone other than examination personnel before, during or after an examination, whether verbally, in writing or through any blogs or chat-rooms, or other means)
- behaving in an unprofessional or discourteous manner, when interacting with Pharmacy Examining Board of Canada and/or examination centre personnel
- any other breach of conduct

In any such case, an incident report will be filed by the Presiding Officer and the candidate will be told of this action. The candidate may provide an independent explanation in writing to the PEBC office, no later than 7 calendar days following the close of the examination.
**Note:** If, after consideration of evidence of improper conduct, a candidate is found by the Board to have committed a breach of the above or any stated examination instructions or procedural guidelines, the Board may:

- cancel the candidate's examination score
- report the misconduct to professional regulatory and legal authorities
- bar the candidate from one or more future examination sessions
- take such other action as deemed appropriate, including possible legal prosecution

A candidate may be held responsible for all damages and cost-recovery in the event that the examination, or any component of it, is compromised by his/her action.
Comments, Complaints and Requests for Further Consideration

Any comment or complaint concerning any aspect of the examination (e.g., process, examination facilities, examination supervision) should be made verbally to the Presiding Officer for immediate attention and correction if possible. Candidates must document such comments and complaints in writing, immediately after the examination. Complaints which are not made on the examination day may not be considered.

Any candidate who feels that a specific matter requires further consideration or review must make such a request, in writing, outlining the reason(s) for the request. This request and the accompanying information must be received by the Registrar-Treasurer within 7 calendar days after the close of the examination. Requests which are received after this time period will NOT be considered.

Please note that the content, methodology, standards or assessment criteria of the Pharmacist Evaluating Examination are NOT subject to review or appeal by candidates or their agents.
Security of Examination Material (Copyright©):

To ensure that the examination provides an equal opportunity for all candidates to demonstrate their levels of knowledge and ability to meet the required competence standards, the Pharmacy Examining Board of Canada maintains the strictest security of the content of its examinations before, during, and after each examination. All examination materials are protected by Copyright© and property right laws. Candidates must strictly follow the rules of conduct for examinations and the signed certification statements made on the examination application form. These rules and statements prohibit:

- the giving or receiving of assistance in answering questions while in the examination
- access to questions before or after the examination
- reproduction of examination content in any manner
- disclosure of questions to others at any time (includes discussion of examination content with other candidates or others before, during or after an examination), whether verbally, in writing or through any internet blogs, chatrooms or other means

Contravention of the copyright and/or rules of conduct for examinations and the certification statements may be sufficient cause for the Board to:

- bar the candidate from the examination
- terminate his/her participation in the examination
- invalidate the results of the examination
- withhold the results
- report the misconduct to professional regulatory and legal authorities
  - bar the candidate from future examinations
- take other action as deemed appropriate, including possible legal prosecution

A candidate may be held responsible for all damages and cost-recovery in the event that the examination or any component of it is compromised by his/her action.
Emergency Procedures

Emergency Building Evacuation

If the need arises for building evacuation, due to fire or other emergency, during an examination, the Presiding Officer, in cooperation with emergency personnel, has full authority to direct and supervise candidates and examination personnel in the emergency evacuation of a building.

The guidelines and procedures established by PEBC are based on two underlying principles: 1) personal safety, and 2) security of examination content and materials.

Events in an emergency situation may be unpredictable and procedures may require adjustment in a specific situation, however, some general guidelines include the following:

- Assist persons with disabilities in exiting
- Do not use elevators in case of fire
- Once outside the building, remain in a safe area, indicated by emergency personnel or the Presiding officer
- Do not return to the examination room unless instructed to do so by emergency personnel or the Presiding Officer
- Try to remain calm, and always follow the instructions of emergency personnel or the Presiding Officer

**Note:** Remember that at all times during an emergency evacuation, candidates must NOT converse or otherwise communicate with one another. Candidates continue to be subject to all rules of the examination.

Other Extraordinary Circumstances

If at any time before an upcoming PEBC examination administration, there should arise any circumstances (including such factors as weather, transportation, strikes, public health issues, or other reasons which may affect the scheduling arrangements and admission procedures for examinations), advisory information will be promptly posted on the PEBC website: [www.pebc.ca](http://www.pebc.ca). You are advised to check the PEBC website (Evaluating Examination for pharmacists section) before attending an examination, to look for any special notices which may affect your arrangements.

You will be required to comply with any health, safety, and security screening procedures, as posted in the examination centre or outlined verbally by examination personnel.

PEBC reserves the right to cancel or reschedule any examination administration, if circumstances require that a scheduled examination cannot be administered.
Preparing for the Examination

Both formal education and practice experience prepare you for the Pharmacist Evaluating Examination and licensure as a pharmacist. In order to determine what additional learning needs you have, prior to taking the examination, you should assess the knowledge and skills that you have already acquired, in comparison with the subject areas and their weightings outlined in the Examination Blueprint on the PEBC website. You are in the best position to determine how much and what kind of preparation is necessary for you.

In addition to your university education and personal learning, the ideal tool for acquiring Canadian pharmacy practice skills is to undertake "hands on" practice experience working in a Canadian pharmacy setting with direct patient care services. Practice experience will offer insights into Pharmaceutical Care practice, the Canadian Health Care System, jurisprudence and ethical issues, as well as commonly seen aspects of therapeutics.

Remember that inadequate language proficiency will affect your performance. Effective written and verbal communication skills (at levels satisfactory for a health professional) are essential competencies for practice and for success in taking the PEBC examinations. Do not overlook this important step in your preparations.

Once you have identified your learning needs, it is your responsibility to find suitable reference sources, materials and/or additional experience to prepare for the Pharmacist Evaluating Examination. A partial list of references and learning resources (review guides, textbooks, federal legislation and internet resources), is available on the PEBC website. The Internet Resources section includes a listing of some Continuing Education (CE) learning opportunities that are available to you. This list is not intended to serve as a handbook or complete overview, nor should you assume that these references are the source of the examination questions.

It is important for candidates who are unsuccessful in an attempt, to focus on improving behaviours and learning, with actions and strategies that are closely linked to the goal of achieving success. This involves undertaking those activities and improvements that will make a significant difference for the next examination attempt. Simply retaking another examination, without making improvements, will not achieve a successful outcome. It is crucial to give serious consideration and assess the effect that completed learning activities and remediation efforts have made in improving one’s readiness to take the next examination.

Note: While PEBC may provide information about some resources that support development of pharmacy practice competencies, PEBC does NOT sanction or endorse any particular review course, study guide or textbook as a preparation for the Pharmacist Evaluating Examination.
The sample questions contained in this booklet are provided as illustrations, to assist you to become familiar with the examination format and phrasing style. NO additional sample questions or content from previous examinations are available.

Please check the PEBC website from time to time for any additional information about resources and/or updated sample questions.

Pharmacist Evaluating Examination Syllabus

A syllabus has been compiled to guide candidates preparing for the PEBC Pharmacist Evaluating Examination. It contains sample outlines of Canadian university level pharmacy course material, in subject areas considered important to the background knowledge base in the pharmaceutical sciences and preparation for the practice of pharmacy. The material found in this syllabus gives sampling from a variety of sources, and its purpose is to serve ONLY as a guide to the curriculum content of current pharmaceutical education in Canada.

This information may be helpful in your preparation to write the Pharmacist Evaluating Examination. However, this syllabus should NOT be interpreted to be the blueprint for the construction of questions for the Pharmacist Evaluating Examination.

The syllabus is available on the PEBC website (www.pebc.ca). If you would like a paper copy of this syllabus, please send your request along with the fee of $35 (certified cheque, money order or international bank draft in Canadian funds only). Please note that cash is not accepted.
**Taking the Evaluating Examination**

**Getting Started and Using the Answer Sheet**

For each sitting of the written examination, you will be provided with a multiple-choice examination answer sheet. On the answer sheet, you must record your responses to the Examination Booklet questions. A sample answer sheet is shown on the PEBC website.

You will also need to record the following information on the answer sheet:
- your PEBC Identification Number
- the date
- the answer sheet number
- your signature and
- the examination form code.

As the sample answer sheet illustrates, you first write your PEBC Identification Number in two places: the areas marked "Student Number"(upper left) and "Surname" (upper right). On the left side, below the "Student Number" area, you then blacken in the numbered ovals corresponding to your PEBC Identification Number. Using ONLY the B (soft grade) pencil provided, mark only inside the oval but COMPLETELY fill it so that the letter or number within can no longer be seen.

You must also sign your name in the area marked "Signature" (upper right). This is the only place that your name will appear. You then write the examination date in the area on the answer sheet marked "Date".

Depending on the examination sitting (e.g., 1st day or 2nd day), you will blacken the oval containing the corresponding number, in the area marked "Mark in Answer Sheet Number" [i.e., 1 (for first sitting) or 2 (for second sitting)].

After all candidates present have completed the identification portion of the answer sheet and the Presiding Officer has given all the instructions, an Examination Booklet will be distributed to each candidate. Each Examination Booklet has two security seals. Immediately after receiving the Examination Booklet, read the "General Instructions to Candidates" on the cover page of the Examination Booklet carefully. On your Examination Booklet, a form code letter (e.g., A, B, C or D) will be printed in the top right-hand corner of the cover page. You must blacken the oval corresponding to the same letter, in the box marked "Form" on your answer sheet. For example, if you receive a Form B Examination Booklet you will blacken the oval containing the letter "B" in the area marked "Form". The form code shown on the cover page of the Examination Booklet must match the form code shown on the Examination Booklet pages inside.

**You must also record your PEBC Identification Number in the space provided (on the line at the top) on the cover page of your Examination Booklet.**
DO NOT open the Examination Booklet, until told to do so. Then, carefully break the seal on the right edge of the booklet (only on the right edge of the booklet), using your finger or the eraser end of the pencil provided. Count the number of pages, and report any missing pages and/or defects to the Presiding Officer at once.

Once the Examination Booklets have been distributed, the Presiding Officer will announce the start of the examination.

To record your response to an examination question, you will blacken the corresponding lettered oval on the answer sheet.

If, for example, question 45 was:

The capital of Canada is:
  a. Halifax.
  b. Montreal.
  c. Ottawa.
  d. Toronto.
  e. Vancouver.

Since the correct response is (C), you would completely blacken that oval next to question 45 as shown:

Mark only inside the oval but COMPLETELY fill it so that the letter within can no longer be seen. Do not put any stray pencil marks near the numbers or ovals on the answer sheet. If an erasure is necessary it must be made cleanly so that the oval appears as though no mark has been made. Optical scanners are sensitive and may interpret stray marks as responses. If multiple answers to a question are blackened, they will be rejected by the computer and you will not receive credit for that question.

You should allow enough time to ensure that all your responses are recorded on your answer sheet. **Do not wait until the end of the examination to mark your answers on the answer sheet.** Your answer sheet will be the only record used to determine your score results. **No additional time will be provided for you to transfer answers from your Examination Booklet to the answer sheet.** The Presiding Officer may refuse to accept the answer sheet of any candidate who fails to observe this time limit.

**Note:** The examination is computer-marked. You are responsible for properly completing and coding your answer sheets. Sheets which are improperly and/or not coded, may be rejected by the computer and you may not receive credit for all your responses. Information contained in your Examination Booklet will **NOT** be considered in the determination of your score.
Answering All Questions

The Pharmacist Evaluating Examination consists of a total of 300 questions, with each sitting containing 150 questions.

There is only one correct response for each question. Your score is based on the number of questions that you answer correctly. Each question on the Pharmacist Evaluating Examination is weighted equally. It is therefore not advisable to spend too much time on any particular question. Generally, it is best to review the responses carefully and select the answer that seems best to you. Credit is given for each correct answer and there is no deduction for incorrect answers. If multiple answers for a question are recorded, you will not receive any credit for that question. You should answer as many questions as possible, as the more questions you answer correctly, the higher your score will be.

Your time is used most efficiently if you record your response on your answer sheet once you have read the question and decided on an answer. Even though you may not be certain of an answer, it is still best to record it on the answer sheet. You may wish to note those uncertain questions in your Examination Booklet and, if time permits, you can reconsider your answer choice.

When you have completed your examination, **re-check to ensure** that your PEBC Identification number, answer sheet number and form letter have been properly marked on your answer sheet. Place the answer sheet (DO NOT FOLD OR BEND!) inside the front cover of the Examination Booklet and return the entire Booklet in intact form to the Presiding Officer.

It is assumed that every candidate taking PEBC examinations is doing so for legitimate purposes to become a licensed pharmacist in Canada and will make their best effort when attempting a PEBC examination.

Dismissal

You may not leave the examination room and return, except to use the washroom facilities and only if accompanied by an Invigilator or Presiding Officer. Once you have completed the examination and have returned your Examination Booklet, answer sheet, calculator and any other examination material provided, you may exit the examination room.

No candidates are permitted to leave during the final ten minutes of the examination. Candidates must remain seated at the close of the examination until all Examination Booklets are collected and until dismissed by the Presiding Officer (i.e., directed to leave the examination room).

Candidates cannot remove any of the materials supplied by PEBC from the examination room.
Once dismissed, you must leave the examination premises promptly; you are **not** allowed to remain on site (in the building) to wait for rides or other candidates.

You must make all arrangements for transportation or meeting rides prior to entering the examination site and you must wait outside the building for friends or rides. Family members or friends of candidates are **NOT** permitted to enter the examination site (building).
Examination Results

Scoring and Pass Standing

If you achieve at least 60% of the total possible score (300), you will be awarded pass standing.

Quality Assurance Processes for the Examination

The Pharmacist Evaluating Examination questions have been developed, reviewed, and pretested, then refined and reviewed again to ensure that they function as required for assessing competence in the examination subject areas. These quality assurance processes utilize a Panel of individuals with academic specialty expertise as well as pharmacist practitioners with clinical excellence.

Each form of the Pharmacist Evaluating Examination is prepared according to an examination blueprint, based on the four major subject areas, the blueprint can be found on the PEBC website. It is reviewed and approved for administration. PEBC staff and examination personnel perform and document quality control checks on each examination administration and scoring, to ensure that all procedures have been followed, that all data is complete and that scoring is accurate. Analyses of the scoring are conducted to confirm the reliability and validity of the results.

Distribution of Results

A letter advising you of your pass-fail results will be mailed from the PEBC office to the address shown on your PEBC Identification/Card of Admission, within 3 weeks following the close of the examination. For reasons of confidentiality, results and feedback reports will not be released by telephone, fax or email.

Board policy does not permit the release of actual overall examination scores or question content (including correct/incorrect responses). Results are given on a pass/fail basis only. Candidates who have passed the Pharmacist Evaluating Examination can find information and application forms for the Pharmacist Qualifying Examination on the PEBC website at www.pebc.ca, under the Qualifying Examination section of the home page for pharmacists.
Website Posting of Results for Successful Candidates

The Pharmacy Examining Board of Canada will post on the PEBC website (www.pebc.ca) a list of candidates who have successfully passed the Pharmacist Evaluating Examination. This list will appear in the Pharmacist Evaluating Examination section of the PEBC website. It will only include the PEBC Identification Number of those successful candidates. No other information will be posted and no information about unsuccessful candidates will be included on the website posting. Further details about how to access this website posting will be found in the information material provided in the mailing of your Identification/Card of Admission. Do not contact the PEBC office for your result or if you have problems accessing the website list.

If you have not received your result within eight weeks following the examination date, please contact the PEBC office in writing. Ensure that you provide PEBC with any change in your mailing address information.

Feedback Reports

Unsuccessful candidates will receive a feedback report with information about their performance on the examination. Candidates who have passed the examination may make a request in writing (including PEBC identification number and current mailing address) for a feedback report. These reports are not available until at least four weeks following the release of examination results. These reports provide relative feedback on a candidate’s performance according to the Subject Areas tested in the examination. This information is intended to help candidates to identify their areas of greatest weakness so that they can focus on study and remediation accordingly. It is important for candidates to review their feedback keeping in mind the relative blueprint weighting for each subject area in the examination blueprint (available on the PEBC website).

If you require any clarification of the information in your feedback report, send a written request with your telephone contact information, so that you can be reached by phone during PEBC office hours.

Certifying and licensing examinations are of a summative and confirmatory nature; they are used to certify competence to practise the profession at an entry-level, in the interest of the protection of the public. The examination is not intended to be educational or diagnostic. With respect to more detailed feedback on a candidate’s weaknesses, the Pharmacy Examining Board of Canada is unable to provide additional feedback or recommendations regarding individual performance or remediation.
Re-Scoring (hand scoring) of Answer Sheets for Unsuccessful Candidates

**Note:** The content, methodology, standards, or assessment criteria of the Evaluating Examination are not subject to review or appeal by unsuccessful candidates or their agents. (Refer to the section: Quality Assurance Processes for the Examination.)

Unsuccessful candidates may request one final, hand scoring of their examination, by providing a written request, stating PEBC Identification number, and enclosing the required fee of $75 in Canadian funds, paid by cheque or money order (cash is not accepted).

This hand scoring is only to confirm correct scanning of the data entry on your answer sheet and tabulation of your score. All such requests must be addressed to the Registrar-Treasurer and must be received within 60 days of the release of results of the examination. Later requests will NOT be accepted. Also, no requests for re-scoring of previous examinations will be accepted.

**Attempts at the Pharmacist Evaluating Examination**

Please assess your preparedness carefully before attempting the Pharmacist Evaluating Examination.

**Candidates are permitted a maximum of three (3) attempts for the Evaluating Examination, with one, final (fourth) attempt available upon successful completion of remediation.**

After three (3) unsuccessful attempts, the Board is prepared to consider your petition for one final (fourth) attempt after you have presented evidence, acceptable to the Board, of successful completion of remediation that is according to Board specifications (as outlined in your results letter). Documentation confirming completion of remediation must be received at PEBC at least three weeks before the date of the examination.
**IMPORTANCE OF MEETING APPLICATION DEADLINE:**

It is important to ensure that the application form for a fourth attempt of the Evaluating Examination is received by the deadline date, even if your eligibility to take the Evaluating Examination is conditional upon receipt and acceptance of required remediation. Please do not wait for PEBC acknowledgement of your remediation documentation, prior to sending in your application. Applications received after the deadline will not be processed, even if the pending documentation has been received prior to the examination date.

It is important to assess your examination preparedness carefully and not simply make another attempt at the next scheduled examination date without adequate remediation and improvement in the needed areas.

If you are unsuccessful at your fourth examination attempt, Board policy does NOT permit any additional attempts, and you cannot proceed further toward PEBC certification.

If you withdraw before the start of an examination, it does not count as one of your attempts at the examination. Once you have begun an examination sitting, it does count as one of your attempts, even if you must leave the examination early – unless you are granted a “no standing” status based on a sudden event (see below). 

Candidates are strongly encouraged not to attempt the examination and to make an appropriate withdrawal if, prior to the examination, they are ill or have extraordinary circumstances, including bereavement, that may affect their performance on the examination.

**“No Standing” Status**

If you must leave the examination early due to sudden illness or another sudden emergency situation and are unable to complete the examination, you may be granted a “no standing” status. The decision will be based on your written request and explanation, and this must be accompanied by valid documentation acceptable to the Registrar-Treasurer. In such circumstances, the sitting may be waived and not counted as an attempt. The examination fee will not be refunded.

Candidate requests for an additional attempt or a “no standing” status on the basis of medical conditions or compassionate grounds (such as bereavement) will NOT be considered, unless received by the Registrar-Treasurer within seven calendar days after the close of the examination. In order for the request to be considered, the appropriate official documentation must be provided. A causal link must be made between the serious
medical condition or compassionate circumstances and the effect on the candidate’s performance on the examination.

**Note:** Petitions for special consideration received more than seven calendar days after the examination (e.g., upon receipt of a notice of an unsuccessful examination result) will NOT be considered.

**Pharmacist Qualifying Examination (Part I and Part II) Information**

For candidates who pass the Evaluating Examination, information and application forms regarding the Qualifying Examination (Part I and Part II), are available on the PEBC website at [www.pebc.ca](http://www.pebc.ca), in the Pharmacist Qualifying Examination section.

Before applying for the Pharmacist Qualifying Examination, please assess your preparedness carefully, especially for Part II (OSCE). Effective written and verbal language proficiency and communication skills (at levels satisfactory for a health care professional), together with hands-on patient care experience in a Canadian practice setting, are essential for success in the PEBC Qualifying Examination and for licensure as a pharmacist.
Pharmacist Evaluating Examination Blueprint

On the Pharmacist Evaluating Examination, you will be examined in the following subject areas, shown below. These subject areas were revised in 2005.

The approximate percentage of questions for each of the four major subject areas represented on an examination is shown in parentheses.

BIOMEDICAL SCIENCES (25%)
Biochemistry/Genomics and Molecular Biology/Nutrition/Clinical Biochemistry
Physiology/Functional Anatomy and Immunology
Pathophysiology and Pathology
Medical Microbiology

PHARMACEUTICAL SCIENCES (35%)
Pharmaceutics and Drug Delivery Systems
Pharmacokinetics and Biopharmaceutics
Medicinal Chemistry
Pharmacology
Toxicology and Clinical Toxicology
Pharmaceutical Analysis
Biotechnology and Pharmacogenetics

PHARMACY PRACTICE (30%)
Therapeutics (Including Non-Prescription Medications)
Professional Practice Skills

BEHAVIOURAL, SOCIAL AND ADMINISTRATIVE PHARMACY SCIENCES (10%)
Pharmacy Administration: Management/Health Care Systems/Pharmacoconomics
Biostatistics/Pharmacoepidemiology
Bioethics
Pharmacist Evaluating Examination Design and Style

The examination is **CLOSED BOOK** and therefore candidates are **NOT** permitted to have any textbooks, papers or notes of any kind in the immediate area of their examination tables or desks.

Most of the style conventions of the Evaluating Examination will become evident as you work through the sample questions provided in this booklet.

Questions about drugs are based on issues that are relevant to practice, and generally concern those most commonly prescribed or those recommended for use in a certain situation.

Laboratory values and drug levels will be reported in the International System of Units (SI).

Abbreviations and symbols used will be those an entry-level pharmacist should recognize and will be written in accordance with SI and other health care publications.

**Style Conventions**

**SI Units:**

The answers in calculation questions and the majority of values presented will be in SI (metric) units. However, you may be required to convert from the avoirdupois or apothecary systems before performing your calculation in instances where the conversion factor should be commonly known by an entry-level pharmacist (e.g., pounds to kilograms).

**Drug Names:**

Generally a drug will be referred to by its generic or common name. In those instances where a specific trade name is used, its generic or common name will also be given.

**Language:**

Negative words, such as **NOT**, **NEVER**, and **EXCEPT** are capitalized and printed in boldface, in order to draw your attention to the kind of response expected.

**EXAMPLE:** All of the following statements are correct, **EXCEPT:**
**Numeric Formatting:**

**Decimal Separator**

In the English language (including Canadian English documents), a *period* is generally used as a decimal separator. EXAMPLE: two and four-tenths is represented by “2.4”.

In Canadian French documents, a *comma* is used as a decimal separator. EXAMPLE: two and four-tenths is represented by “2,4”.

For formatting and consistency purposes, some numbers on the examination may include a decimal point with a trailing zero (e.g., 5.0). **In practice**, the use of a trailing zero is strongly discouraged by the Institute for Safe Medication Practices, due to the risk of misinterpretation.

**Thousands Separator**

In the English language (including Canadian English documents), a *comma* is generally used as a thousands separator. For example, two thousand five hundred is represented by “2,500”.

Sometimes no *thousands separator* is seen, for example, “2500”.

Often, when there are two numbers to the left of the thousands separator, a *space* is used. For example, twelve thousand five hundred may be represented by “12 500”.

In Canadian French documents, a *space* is used as a thousands separator, for example “2 500”.

PEBC has tried to standardize the numeric format on written examinations to use a comma as a thousands separator; however, as noted in various medical references, the other previously mentioned formats may also be seen.

- **In Summary:**  
  two thousand = 2,000 = 2000 = 2 000

**Formulas:**

Certain formulas (see PEBC website) will be printed in each Examination Booklet and therefore do not need to be memorized. Molecular and atomic weights will be supplied when necessary.
Standardized PEBC Calculators:

A PEBC standardized model, scientific calculator, removed from its case, will be provided to all candidates of PEBC written examinations. The model is SHARP Scientific calculator EL-510R. A picture layout of the calculator and basic instructions for use are available on the PEBC website to assist you in familiarizing yourself with this calculator in advance of the examination date. This information will also be printed in each Examination Booklet.
Format of Examination Questions

The Pharmacist Evaluating Examination consists entirely of multiple-choice questions. You will be required to select the best answer from the responses listed. In some questions, you may believe there is a better answer than those provided. You should always mark the answer that is best among the responses that accompany the question. Two examination question formats will be used in the examination: single answer, and combined-response, described below:

Classic Single-Answer Question (Type A)

This type of question requires that you answer a question or complete a statement by choosing a single best response of those provided, as in the following example:

The cephalosporins act by:
- a. inhibiting cell wall synthesis.
- b. altering the function and permeability of the cell membrane.
- c. inhibiting protein synthesis.
- d. inhibiting translation of genetic information.
- e. inhibiting synthesis of essential metabolites.

Combined-Response Question (Type K)

To answer this type of question you must determine whether the best answer consists of one, two, or all three of the components listed. You must select a response that contains ALL OF THE CORRECT information but NO INCORRECT information. Each of the combined-response questions will always have the same set of possible alternatives:

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. I, II and III

as shown in the following example:

Suitable antioxidants for an aqueous vehicle would include:
- I vitamin E.
- II ascorbic acid.
- III ethylenediamine-tetra-acetic acid (EDTA).

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. I, II and III
A selection of examples of multiple-choice questions (MCQs), are found on the PEBC website.
Pharmacist Evaluating Examination Sample Questions

The following sample questions are **NOT** intended or designed to be a sample examination, and do **NOT** represent an exact model of the Pharmacist Evaluating Examination in terms of difficulty and proportion of topics. However, individually, these questions are intended to be representative, in **format and phrasing style**, of the types of questions found on the Pharmacist Evaluating Examination. They also illustrate a variety of the subject areas contained in the examination blueprint. Please note that these questions are reviewed and updated periodically.

Answers to these sample questions are available on the PEBC website.

**BIOMEDICAL SCIENCES**

1. Folic acid has tetrahydrofolate coenzyme activity which is based on the:
   a. pyrimidine ring.
   b. purine ring.
   c. pyrazine ring.
   d. pteridine ring.
   e. pyridine ring.

2. Enkephalins are peptides that:
   a. have narcotic antagonist activity.
   b. exert actions resembling those of opiates.
   c. are found only in the central nervous system.
   d. cause blood vessel wall relaxation.
   e. transmit pain impulses.

3. β-Carotene is the precursor of:
   a. retinol.
   b. thiamine.
   c. calciferol.
   d. riboflavin.
   e. retinoic acid.

4. True statements regarding transcription include which of the following?
   a. The enzyme responsible for initiating transcription is RNA polymerase.
   b. The enzyme responsible for initiating transcription is DNA polymerase.
   c. During transcription, the genetic information contained in the nucleotide sequence of tRNA is translated into a protein structure.
   d. The process of transcription includes the splicing of exons.
   e. Following initiation, the next stage of transcription is termination.
5 Diphtheria is caused by:
   a. *Plasmodium*.
   b. *Vibrio*.
   c. *Shigella*.
   d. *Neisseria*.
   e. *Corynebacterium*.

6 Identify the correct pathway of blood flow from the small intestine to the liver:
   a. haemorrhoidal vein → portal vein.
   b. mesenteric vein → portal vein.
   c. haemorrhoidal vein → inferior vena cava.
   d. mesenteric vein → hepatic artery.
   e. gastric vein → hepatic vein.

7 Lactose intolerance is classified as a(n):
   a. allergy.
   b. enzyme deficiency.
   c. mineral deficiency.
   d. transporter abnormality.
   e. vitamin deficiency.

8 Parkinson's disease is characterized by a deficiency of:
   a. acetylcholine in the motor cortex.
   b. noradrenaline in the spinal motor neurons.
   c. gamma amino butyric acid (GABA) in inhibitory pathways.
   d. dopamine in the nigrostriatal pathway.
   e. serotonin in the brain stem.

9 The blood volume of the average adult is approximately:
   a. 5 L.
   b. 10 L.
   c. 15 L.
   d. 20 L.
   e. 25 L.
10 Common etiologic agents of community-acquired pneumonia include:
   I  *Escherichia coli*.
   II *Haemophilus influenzae*.
   III *Mycoplasma pneumoniae*.

   a.  I only
   b.  III only
   c.  I and II only
   d.  II and III only
   e.  I, II and III

11 Gamma aminobutyric acid (GABA) is:
   I  the major inhibitory neurotransmitter in the brain.
   II found primarily in interneurons.
   III synthesized from glycine.

   a.  I only
   b.  III only
   c.  I and II only
   d.  II and III only
   e.  I, II and III

12 All of the following statements are true regarding chronic inflammation, **EXCEPT**:  
   a.  it may develop as a granulomatous inflammation.
   b.  it may be caused by persistent infections such as tuberculosis.
   c.  it may occur with autoimmune diseases such as rheumatoid arthritis.
   d.  large numbers of macrophages are found in the infiltrate.
   e.  lymphocytes and eosinophils are rarely involved in its development.

13 Which of the following enzymes catalyzes the synthesis of DNA from viral RNA?  
   a.  Reverse transcriptase
   b.  DNA polymerase
   c.  RNA polymerase
   d.  Endonuclease
   e.  Aminoacyl-tRNA synthetase
14 Pernicious anemia is:
   a. due to dietary deficiency of vitamin $B_{12}$.
   b. prevented by oral administration of a vitamin $B_{12}$ supplement.
   c. treated by parenteral administration of folic acid.
   d. treated by parenteral administration of vitamin $B_{12}$.
   e. caused by dietary iron deficiency.

15 The optic disk is also called the:
   a. blind spot.
   b. cornea.
   c. iris.
   d. pupil.
   e. macula lutea.

16 Which of the following is characterized as an autoimmune disorder?
   a. Alzheimer's disease
   b. Systemic Lupus Erythematosus
   c. Osteoarthritis
   d. Parkinson’s disease
   e. Paget’s disease
17 Correct statements regarding reversed-phase high-performance liquid chromatography include which of the following?
   I. The stationary phase is hydrophobic.
   II. The mobile phase is polar.
   III. The compound to be separated is very polar.

   a. I only
   b. III only
   c. I and II only
   d. II and III only
   e. I, II and III

18 If the pKₐ of phenobarbital is 7.4, what approximate fraction of the drug would be ionized at pH 8.4?

   a. 10%
   b. 30%
   c. 50%
   d. 90%
   e. 100%

19 All of the following statements concerning the lyophilization of a parenteral product are correct, EXCEPT:
   a. there is minimal loss of activity in heat labile materials.
   b. the liquid must be frozen to below the eutectic temperature.
   c. the solute usually forms an amorphous glass.
   d. the eutectic temperature is the freezing point of the drug solution.
   e. water is removed from the frozen mixture by sublimation.

20 Dopamine is useful in the treatment of cardiogenic shock because it:

   a. selectively dilates renal and mesenteric vascular beds.
   b. does not induce peripheral vasoconstriction.
   c. decreases the force of myocardial contraction.
   d. delays the atrioventricular (AV) conduction time.
   e. prolongs the QT interval on the ECG.
21 In cardiovascular physiology, LaPlace's law relates the tension achieved in a blood vessel wall to:
   I the length of the vessel.
   II the radius of vessel.
   III the intraluminal pressure.
   a. I only
   b. III only
   c. I and II only
   d. II and III only
   e. I, II and III

22 Concentration of a drug in breast milk exceeds that in plasma, if the drug:
   a. is basic.
   b. is protein bound.
   c. is acidic but not protein bound.
   d. has a small volume of distribution.
   e. has a large volume of distribution.

23 Mercapturic acid derivatives in phase II metabolism can result from reactions of:
   a. glutathione conjugates.
   b. glucuronide conjugates.
   c. glycine conjugates.
   d. glutamate conjugates.
   e. sulfate conjugates.

24 Tetrodotoxin is a selective inhibitor of the:
   a. calcium ion channel.
   b. sodium ion channel.
   c. potassium ion channel.
   d. chloride ion channel.
   e. nicotinic ion channel.

25 Atropine is the primary example of an important class of muscarinic antagonists which are esters of tropic acid and which contain:
   a. aniline and piperidine rings.
   b. aniline and piperazine rings.
   c. aniline and pyrrolidine rings.
   d. pyrrolidine and piperazine rings.
   e. pyrrolidine and piperidine rings.
26 Carbon monoxide binds to:
   I hemoglobin.
   II myoglobin.
   III cytochrome oxidase.

   a. I only
   b. III only
   c. I and II only
   d. II and III only
   e. I, II and III

27 True statements regarding ipratropium bromide include all of the following, EXCEPT that ipratropium bromide:
   a. is a competitive muscarinic antagonist.
   b. exists as a quaternary ammonium anion.
   c. is poorly absorbed through airway epithelium.
   d. requires nebulization for inhaled therapy.
   e. enhances the bronchodilatory effects of theophylline.

28 **Diazepam Injection U.S.P**

   Diazepam  5 mg/ml
   Ethanol           10%
   Propylene glycol  40%
   Benzyl alcohol   1.5%
   Water for Injection qs 100%

In the formulation given above, which of the following ingredients function as cosolvents?
   I Ethanol
   II Propylene glycol
   III Benzyl alcohol

   a. I only
   b. III only
   c. I and II only
   d. II and III only
   e. I, II and III
29 Both isoxazole and oxazole rings are found as substituents in some bacteriostatic sulfanilamides. They are present in these structures specifically because of their:
   a. sizes and shapes.
   b. tautomeric activities.
   c. enzymatic activities.
   d. electron-donating effects.
   e. electron-withdrawing effects.

30 The Michaelis-Menten equation will appear first order:
   a. when the substrate concentration is much smaller than $K_m$.
   b. when $K_m$ is much smaller than the substrate concentration.
   c. when $V_{max}$ is much smaller than $K_m$.
   d. when $V_{max}$ is much larger than $K_m$.
   e. when $K_m$ approaches $V_{max}$.

31 With respect to bioequivalence, the parameter "$C_{max}$" is:
   a. affected by the extent of absorption only.
   b. affected by the rate of absorption only.
   c. affected by neither rate nor extent of absorption.
   d. affected by both rate and extent of absorption.
   e. the only significant parameter.

32 Which of the hydroxyls in the compound above is a tertiary alcohol?
   a. Hydroxyl 1
   b. Hydroxyl 2
   c. Hydroxyl 3
   d. Hydroxyl 4
   e. Hydroxyls 1 and 2
The above structures are related to one another as:
   a. bioisosteres.
   b. enantiomers.
   c. homologs.
   d. rotamers.
   e. positional (structural) isomers.

34 Five subjects given a single intravenous dose of a drug have the following elimination half-lives: 3, 9, 6, 5 and 4 h (hours). The mean half-life is:
   a. 4.0 h.
   b. 5.0 h.
   c. 5.4 h.
   d. 5.8 h.
   e. 6.0 h.

35 Reasons for using coatings on tablets include all of the following, EXCEPT:
   a. to mask the taste of the drug.
   b. to mask the odor of the drug.
   c. to improve the appearance of the tablet.
   d. to increase the drug’s release rate.
   e. to protect the drug from stomach acid.

36 Which of the following factors would be important in determining the concentration of drug that would be reached in the cerebrospinal fluid for treatment of meningitis?
   I Oil/water partition coefficient
   II Binding to plasma protein
   III pK_a of the drug

   a. I only
   b. III only
   c. I and II only
   d. II and III only
   e. I, II and III
37 Which of the following terms indicates a loss of moisture?
   a. Deliquescence
   b. Efflorescence
   c. Hygroscopicity
   d. Polymorphism
   e. Condensation

38 Which of the following statements is **FALSE** regarding tablet formulation?
   a. Diluents are fillers to add bulk to the tablet.
   b. Lubricants help the patient to swallow the tablet more easily.
   c. Binding agents may be added dry or in solution.
   d. Disintegrants draw water into the tablet causing it to burst.
   e. Glidants promote the flow of materials during compression.

39 Factors that determine bioequivalence of two brands of a drug include:
   I the taste of the preparations.
   II the physical appearance of the preparations.
   III pharmacokinetic parameters of the preparations.
   a. I only
   b. III only
   c. I and II only
   d. II and III only
   e. I, II and III

40 If the total body clearance of a drug is 200 mL/min in a normal healthy adult and the renal clearance is 10 mL/min then one may assume that:
   a. the drug is extensively metabolized.
   b. greater than normal drug accumulation would occur in patients with moderate renal failure.
   c. entero-hepatic recycling is significant.
   d. the drug is not bound to plasma proteins.
   e. the drug is concentrated in adipose tissue.
41 The major pathway for the biotransformation of the following compound is by hydrolysis. Identify the site which would be most susceptible to hydrolysis.

![Chemical Structure]

a. A  
b. B  
c. C  
d. D  
e. E

42 Mechanisms of drug interactions with acetylsalicylic acid (ASA) include:
   a. induction of microsomal enzymes.  
   b. inhibition of microsomal enzymes.  
   c. inhibition of liposomal enzymes.  
   d. displacement of other drugs bound to serum albumin.  
   e. enhanced platelet aggregation.

43 Which of the following diuretics is used to block the Na⁺-H⁺ exchange system of the renal tubule?
   a. Furosemide  
   b. Hydrochlorothiazide  
   c. Spironolactone  
   d. Acetazolamide  
   e. Amiloride
44 Atropine poisoning can be recognized by all of the following signs or symptoms, **EXCEPT**:
   a. dry skin.
   b. flushed appearance.
   c. delirium and restlessness.
   d. mydriasis.
   e. diarrhea.

45 The organophosphates commonly found in insecticides are thought to act by which of the following mechanisms?
   a. Combining with acetylcholine
   b. Potentiating the action of acetylcholinesterase
   c. Forming a very stable complex with acetylcholinesterase
   d. Reacting at the cholinergic receptor
   e. Preventing the release of acetylcholine from the nerve ending

46 Acarbose smooths and lowers:
   a. postprandial blood glucose levels by blocking absorption of carbohydrates.
   b. postprandial blood glucose levels by delaying absorption of carbohydrates.
   c. preprandial blood glucose levels by blocking absorption of carbohydrates.
   d. preprandial blood glucose levels by delaying absorption of carbohydrates.
   e. preprandial and postprandial blood glucose levels by blocking absorption of carbohydrates.

47 Hypercalcemia may result from:
   I       an excessive intake of calcium.
   II      hyperparathyroid disease.
   III     an inadequate intake of vitamin D.
   a.     I only
   b.     III only
   c.     I and II only
   d.     II and III only
   e.     I, II and III

48 Which of the following statements is true regarding the use of monoclonal antibody drug therapies?
   a. Flu-like symptoms commonly occur at the start of therapy.
   b. T cells are stimulated and will initiate a host rejection process.
   c. Orthoclone is a human immunoglobulin product
   d. Use of chimeric monoclonal antibodies is associated with increased immunogenicity.
   e. Use of Fc fragments avoids raising an immune response against the FAB part.
QUESTIONS 49 TO 50 INCLUSIVE REFER TO THE FOLLOWING:

KJ, a 23 year old female, is to receive lithium therapy with a regimen of lithium carbonate 600 mg q8h. The total body clearance of lithium is 0.44 mL/s (1.6 L/h) and the biological half-life is 18 h. The molecular weight of lithium carbonate (Li₂CO₃) is 74.

49 The number of millimoles of lithium (Li⁺) that KJ will receive with each dose is:
   a. 8
   b. 16
   c. 24
   d. 32
   e. 48

50 The number of milli-equivalents of lithium that KJ will receive with each dose is:
   a. 8
   b. 16
   c. 24
   d. 32
   e. 48

*****

51 The fraction of bound receptors in a well-defined drug-receptor binding system is determined by:
   I the equilibrium drug-receptor dissociation constant.
   II the free drug concentration.
   III the total receptor concentration.

   a. I only
   b. III only
   c. I and II only
   d. II and III only
   e. I, II and III

52 In some parenteral formulations, sodium metabisulphite is included as:
   a. an antioxidant.
   b. a chelator.
   c. a solubilizer.
   d. a cosolvent.
   e. an emulsifier.
53 The carbonic anhydrase inhibitor dorzolamide is structurally classified as a:
   a. biguanide.
   b. butyrophenone.
   c. sulfonamide.
   d. sulfonyleurea.
   e. thiazolidinedione.

54 Which of the following statements is **FALSE** regarding virus vectors used in the production of biotechnology drugs?
   a. Viruses can be introduced by nutrients.
   b. Viruses can be generated by an infected production cell line.
   c. The most frequent source of virus introduction is the growth media.
   d. Viruses can be inactivated by physical or chemical treatment of the product.
   e. There is a trend toward using better-defined growth media in which serum levels are significantly reduced.

55 The western blot is an analytical technique used to detect which of the following?
   a. DNA
   b. RNA
   c. Specific antibodies
   d. Specific proteins
   e. Post-translational modification of protein

56 An angiotensin-converting enzyme (ACE) inhibitor for which both renal elimination and metabolism are important in the elimination of the drug and its active metabolites is:
   a. enalapril.
   b. fosinopril.
   c. lisinopril.
   d. quinapril.
   e. ramipril.
57  Once daily dosing of aminoglycosides is effective due to:
   a. prolonged residence of the antibiotic in the body.
   b. post-antimicrobial effect.
   c. enhanced tissue accumulation.
   d. reduced renal clearance.
   e. higher peak-trough differences.

58  The method of ionization of mass spectrometry which results in well-established
diagnostic fragmentation patterns that are useful in the identification of compounds of
unknown structure is called:
   a. atmospheric pressure chemical ionization (APCI).
   b. chemical ionization (CI).
   c. electron impact (EI) ionization.
   d. electrospray ionization (ESI).
   e. fast atom bombardment (FAB) ionization.

59  An ophthalmic solution contains zinc sulfate 0.25%, phenylephrine HCl 0.12% and
boric acid 1.1% (NaC1 equivalents: zinc sulfate 0.15, phenylephrine HCl 0.32, boric
acid 0.5). Relative to lacrimal fluid, the solution is:
   a. isotonic.
   b. hypotonic.
   c. hypertonic.
   d. hyperosmotic.
   e. isoosmotic.

*****
60 Which of the following is NOT a benefit of performing medication reconciliation activities in a hospital setting?
   a. Reduction of medication errors
   b. Reduction of inventory pilferage
   c. Reduction of preventable adverse effects
   d. Assessment of patient adherence to therapy
   e. Enhanced accuracy of patient allergy information

61 The Compendium of Pharmaceuticals and Specialties (CPS) is a useful resource for locating which of the following?
   a. Clinical recommendations for dental prophylaxis of bacterial endocarditis
   b. Detailed monographs for all prescription pharmaceuticals available in Canada
   c. Approved indications for all prescription and nonprescription pharmaceuticals in Canada
   d. Canadian consensus guidelines on drug therapies used to treat hypertension
   e. Bioequivalence data comparing interchangeable pharmaceutical products

62 Which of the following statements is true regarding nitrate tolerance?
   a. Tolerance does not occur with oral isosorbide dinitrate.
   b. Tolerance does not occur in patients who are concurrently on metoprolol.
   c. Tolerance is dependent upon the administration schedule of nitrate medication.
   d. Tolerance does not occur with topical nitroglycerin ointment.
   e. Tolerance does not occur with transdermal nitroglycerin.

63 In dispensing, the Latin abbreviation for "before meals" is:
   a. ac.
   b. aa.
   c. pc.
   d. ic.
   e. cc.

64 In dispensing, the English meaning for the Latin phrase “ex aqua” is:
   a. with or in water.
   b. extracellular fluids.
   c. exact amount.
   d. soluble in water.
   e. out of water.
65 Aerosol OT (AOT) is used in veterinary medicine as a laxative. If 250 g of AOT is dissolved in 1000 mL of glycerin (density of glycerin is 1.25 g/mL), the concentration of AOT in the solution is:
   a. 12.5% w/w.
   b. 16.7% w/w.
   c. 20.0% w/w.
   d. 23.8% w/w.
   e. 25.0% w/w.

66 Water used for reconstitution of an additive for a large volume parenteral should be:
   a. sterile water.
   b. distilled water.
   e. Sterile Water for Injection (United States Pharmacopeial standard).

67 The shock and airway edema of anaphylaxis are best treated with:
   a. salbutamol.
   b. diphenhydramine.
   c. epinephrine.
   d. acetazolamide.
   e. aminophylline.

68 The hospital pharmacist is asked for advice from a physician after a newly admitted patient is diagnosed with ischemic stroke. In the selection of drug therapy for the initial management of this patient, the pharmacist would find all of the following resources useful, EXCEPT:
   a. published clinical guidelines.
   b. Harrison’s Principles of Internal Medicine.
   c. primary journal articles.
   d. Therapeutic Choices.
   e. Compendium of Self-Care Products.

69 Which of the following statements is true regarding pioglitazone therapy?
   a. It requires ongoing monitoring of renal function.
   b. It does not depend on the presence of insulin for its action.
   c. Multiple daily dosing is required due to its short half-life.
   d. Pulmonary fibrosis is a rare but serious adverse effect.
   e. It has shown benefits in reducing glycosylated hemoglobin levels.
70 Prednisone may produce all of the following effects, EXCEPT:
   a. skeletal muscle weakness.
   b. hypoglycemia.
   c. sodium retention.
   d. peptic ulceration.
   e. lowered resistance to infection.

71 The pharmacist fills a prescription for sumatriptan 100 mg tablets for a migraine patient. Appropriate information to provide to the patient includes which of the following?
   a. If the sumatriptan does not relieve the headache within four hours, ergotamine may be used.
   b. If no relief is achieved in two hours, sumatriptan may be repeated.
   c. If the headache is relieved but another headache occurs eight hours later, sumatriptan may be used for the second headache.
   d. The maximum dosage in any 24-hour period is six tablets.
   e. If relief is not achieved, no other medication can be used for 24 hours.

72 Which of the following is appropriate auxiliary labelling for allopurinol?
   a. Take with plenty of fluids.
   b. Take on an empty stomach.
   c. Avoid concurrent intake of dairy products.
   d. Avoid concurrent intake of grapefruit juice.
   e. Exposure to sunlight may cause adverse reactions.

73 A pharmacist is making a presentation on medication adherence and compliance to a group of clients. Which of the following would be the most appropriate indicator of the effectiveness of the presentation for these clients?
   a. Increase in fill quantity for each prescription refill
   b. Reduced number of prescriptions filled per month
   c. Increase in number of nonprescription medications used
   d. Reduced number of prescription refill dates per month
   e. Prescription refill dates closer to expected fill intervals
74 R Timolol 0.25% drops
Mitte: 15 mL
Sig: gtt. i. o. d. BID

On the prescription label, the instructions to the patient should read:
   a. apply one drop into both eyes twice daily.
   b. instil one drop into the left eye twice daily.
   c. instil one drop into the right eye twice daily.
   d. shake well and instil one drop into the left eye twice daily.
   e. shake well and instil one drop into the right ear twice daily.

75 The following prescription is received in a community pharmacy:
Losec® 20 mg
S: Take 1 tab BID
M: 2 weeks

Which of the following is correct labelling for this prescription?
   a. Take one tablet twice weekly (28 tablets).
   b. Take one tablet twice weekly (4 tablets).
   c. Take two tablets twice daily (56 tablets).
   d. Take one tablet twice daily (28 tablets).
   e. Take one tablet twice daily (14 tablets)

76 A role of The National Association of Pharmacy Regulatory Authorities is to:
   a. audit the financial performance of provincial pharmacy licensing bodies.
   b. promote implementation of pharmacy practice standards across Canada.
   c. establish a unified lobby voice for pharmacists from all types of practice settings.
   d. provide mechanisms for the public to file complaints about pharmacy care providers.
   e. accredit the pharmacy programs at Canadian universities.

77 Which of the following statements is true regarding Tylenol Elixir With Codeine® (each 5 ml contains acetaminophen 160 mg and codeine 8 mg)?
   a. It requires a written order from an authorized prescriber.
   b. It is an example of a legally exempted codeine product.
   c. Sale for self-medication use must involve a pharmacist.
   d. It is regulated under the Benzodiazepines and Other Targeted Substances Act.
   e. Authorized prescribers include chiropractors.

*****
The next section includes several **EXAMPLES OF THE CASE SCENARIO FORMAT**, in which there are two or more questions in sequence, that are directly related to the patient information provided in the (bolded) stem shown at the top of the case. When choosing your response to questions in the case scenario format, you must base your choice on the patient-specific information presented in the case.

**QUESTIONS 78 TO 79 INCLUSIVE REFER TO THE FOLLOWING:**

SM is a 34 year old female who, while vacationing in Mexico, began prophylactic treatment for travellers’ diarrhea. Shortly thereafter she complained of a feeling of fullness in her ears, black stools and a black tongue. SM’s previous history includes an allergy to sulfonamides.

**78 Which of the following drugs could be the cause of SM's complaints?**
   a. Bismuth subsalicylate
   b. Cotrimoxazole
   c. Doxycycline
   d. Amoxicillin
   e. Loperamide

**79 Organisms commonly implicated in the cause of travellers’ diarrhea include:**
   I  *Bacteroides fragilis.*
   II  *Escherichia coli.*
   III *Shigella* sp.
   a. I only
   b. III only
   c. I and II only
   d. II and III only
   e. I, II and III

****
QUESTIONS 80 TO 82 INCLUSIVE REFER TO THE FOLLOWING:

A 3 year old child was admitted to the hospital following ingestion of an overdose of
acetylsalicylic acid and a nonprescription sleep-inducing compound containing an
antihistamine and scopolamine. The child was semi-comatose, flushed and flaccid. Her pupils were fixed and dilated. Respirations were deep and rapid. Laboratory
investigation indicated serum salicylate level of 5.80 µmol/L (80 mg/100 mL) and a
urinary pH of 6.

80 The syndrome of deep and rapid respirations would initially lead to:
   a. respiratory acidosis.
   b. respiratory alkalosis.
   c. renal excretion of acid.
   d. marked reduction in body temperature.
   e. increased chloride elimination in urine.

81 As a result of other mechanisms the child would likely progress to:
   a. hyperglycemia.
   b. hypoglycemia.
   c. metabolic alkalosis.
   d. systemic acidosis.
   e. renal failure.

82 One form of therapy to hasten the excretion of salicylate involves the administration of:
   a. vasopressin (ADH).
   b. probenecid.
   c. ammonium chloride.
   d. sodium bicarbonate.
   e. aluminum hydroxide.

*****

83 The recommended pediatric dosage for azithromycin therapy is 12 mg/kg once daily on
Days 1 through 5. For a child weighing 8.3 kg, calculate the total volume needed for the
total course of treatment, if a product supplying 200 mg/5 mL is supplied for this order.
   a. 12.5 mL
   b. 15.0 mL
   c. 25.0 mL
   d. 37.5 mL
   e. 50.0 mL

84 Which of the following medications requires monitoring for the adverse effect of
hyperlipidemia?
   a. Ciprofloxacin
   b. Allopurinol
   c. Isotretinoin
   d. Ramipril
   e. Raloxifene
85 A vertical laminar flow hood (LFH) is preferred to a horizontal LFH when preparing a parenteral formulation of:
   a. aminophylline.
   b. doxorubicin.
   c. magnesium sulfate.
   d. nitroglycerin.
   e. penicillin.

86 A physician wants to switch a terminally-ill patient from slow release morphine sulfate tablets, 15 mg twice daily, to a liquid morphine sulfate dosage form because the patient has difficulty in swallowing tablets. If a morphine sulfate solution containing 5 mg per mL is prescribed q4h, what volume should be dispensed for a 20 day supply to provide the same pain relief as the tablet regimen?
   a. 20 mL
   b. 60 mL
   c. 80 mL
   d. 100 mL
   e. 120 mL

87 In the International System of Units (SI), most drug levels are to be reported in the units of micromoles/litre (µmol/L). The therapeutic concentration range for theophylline (molecular weight 180) is 10-20 µg/mL. The SI equivalent would be:
   a. 0.055 - 0.11 µmol/L.
   b. 27 - 55 µmol/L.
   c. 55 - 110 µmol/L.
   d. 110 - 220 µmol/L.
   e. 180 - 360 µmol/L.

88 The mother of a 6 year old child presents to the pharmacist with a written prescription for amoxicillin that was ordered by the physician 3 days earlier. She states that her child was diagnosed with otitis media. Which of the following is the most appropriate pharmacist response?
   a. Fill the prescription as written.
   b. Refuse to fill the prescription as the antibiotic order is no longer current.
   c. Indicate a need to contact the prescriber before filling the prescription at this time.
   d. Fill the prescription for a quantity that is the ordered amount less three days’ supply.
   e. Explain that, as at this late date, antibiotic therapy will likely be ineffective for the child.

*****
BEHAVIOURAL, SOCIAL AND ADMINISTRATIVE PHARMACY SCIENCES

89 The ethical principle of veracity requires that:
   a. we respect the rights of others to make choices.
   b. we act with honesty, without deception.
   c. we avoid, remove or prevent harm.
   d. we do good to patients.
   e. we act with fairness.

90 In deciding what drugs are appropriate for its formulary, the hospital must consider a drug's efficacy, associated workload, and acquisition cost. Several new antifungal IV drugs (drug A, drug B, drug C, and drug D), all with equal efficacy, have recently become available. Currently the hospital stocks drug E, which has been available for several years. Data for the medications is as follows:

<table>
<thead>
<tr>
<th>Drug</th>
<th>Cost/day</th>
<th>Dosing frequency</th>
<th>Treatment Duration (days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>$2.50</td>
<td>QID</td>
<td>14</td>
</tr>
<tr>
<td>B</td>
<td>$2.25</td>
<td>once daily</td>
<td>14</td>
</tr>
<tr>
<td>C</td>
<td>$5.00</td>
<td>BID</td>
<td>7</td>
</tr>
<tr>
<td>D</td>
<td>$2.25</td>
<td>BID</td>
<td>7</td>
</tr>
<tr>
<td>E</td>
<td>$2.25</td>
<td>QID</td>
<td>7</td>
</tr>
</tbody>
</table>

The most appropriate choice for the hospital is:
   a. Drug A.
   b. Drug B.
   c. Drug C.
   d. Drug D.
   e. Drug E.

91 Which of the following statements is true regarding hypothesis testing?
   a. A type I error frequently occurs due to sample sizes being too small.
   b. A type II error is considered to be more serious than a type I error.
   c. Small p-values suggest that the null hypothesis is likely to be true.
   d. The larger the p-value, the more convincing is the rejection of the null hypothesis.
   e. P-value is the probability of wrongly rejecting the null hypothesis if it is in fact true.
92 JN, a 17 year old male with a highly resistant form of testicular cancer, is in hospital for treatment. He is an intelligent, articulate young man. His parents are insisting that the physician treat him with the latest experimental therapy, but JN does not want to undergo the treatment. If the physician goes ahead and gives the experimental therapy what ethical principle will have been violated the most?
   a. Confidentiality
   b. Nonmaleficence
   c. Justice
   d. Veracity
   e. Autonomy

93 Which financial statement could be used to determine the total value of prescription drug sales for a pharmacy during the course of a year?
   a. Balance sheet
   b. Statement of investments
   c. Statement of changes in financial position
   d. Income statement
   e. Statement of equity

94 In an adequately powered, randomized controlled trial conducted over 2 years, the desired clinical outcome (i.e., prevention of a serious cardiovascular event) with a new drug is achieved in 25% of the study sample. In the patients who receive a placebo, only 15% obtain the same clinical benefit. The relative risk reduction achieved with the new drug over the study period is:
   a. 10%.
   b. 15%.
   c. 25%.
   d. 40%.
   e. 50%.

95 In an adequately powered, randomized controlled trial conducted over 3 years, a specific serious side effect (i.e., reduction in leukocytes) with conventional therapy is seen in 0.5% of the study sample. In patients who receive a newly discovered drug, only 0.45% experience the same side effect. Based on these results, the minimum number of patients that would have to receive the new drug for 3 years to statistically demonstrate the prevention of one episode of this side effect in at least one patient is:
   a. 15.
   b. 20.
   c. 150.
   d. 200.
   e. 2000.
96 Following the ethical principle of nonmaleficence requires that pharmacists:
   a. respect the rights of patients to make choices.
   b. do good to patients, placing the benefit of the patient above all else.
   c. avoid, remove or prevent harm from people.
   d. act with fairness, allowing people access to pharmacy care.
   e. act with honesty, without deception.

97 Type II statistical error in a study comparing 2 drug treatment regimens occurs when:
   a. the data shows a difference between 2 treatment regimens but a difference
does not actually exist.
   b. the data shows no difference between 2 treatment regimens and a difference
actually does exist.
   c. p level is > 0.05.
   d. the control drug is not a "gold standard" treatment.
   e. the exclusion criteria are too rigid.

98 The standard of universal access to health care in Canada is mandated by:
   a. the Canada Health Act.
   b. individual provinces and territories.
   d. Canadian Agency for Drugs and Technologies in Health.
   e. National Association of Pharmacy Regulatory Authorities.

99 The Canada Health Act (1984) embodies all of the following principles, EXCEPT:
   a. affordability.
   b. accessibility.
   c. comprehensiveness.
   d. portability.
   e. universality.

100 All of the following responsibilities can be appropriately delegated to a non-
     pharmacist manager of a community pharmacy, EXCEPT:
   a. doing direct order purchasing on current accounts.
   b. contracting for a new computer system for the dispensary.
   c. supervision of staff scheduling.
   d. supervision of staff time-sheets.
   e. being the designated manager for narcotics.

*****
# Answers to Sample Questions

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Formulas

The following formulas are provided for your reference. They do NOT need to be memorized, as they will be provided in the Examination Booklets.

\[ C = C_0 \cdot 10^{-\frac{kt}{2.303}} \]

\[ \log C = \log C_0 - \frac{kt}{2.303} \]

\[ C = C_0 \cdot e^{-kt} \]

\[ \ln C = \ln C_0 - kt \]

\[ \log \frac{k_2}{k_1} = \frac{E_a}{2.303 R} \frac{[T_2 - T_1]}{[T_1 T_2]} \]

\[ t_{1/2} = \frac{0.693}{k} \]

\[ t_{1/2} = \frac{C_0}{2k} \]

\[ t_{90} = \frac{0.105}{k} \]

\[ t_{90} = \frac{0.1 C_0}{k} \]

\[ k = \frac{A_0 - A_t}{t} \]

\[ k = A \cdot \exp \left(\frac{-E_a}{RT}\right) \]

\[ V = W \cdot E \cdot 111.1 \quad \text{HLB mixture} = f \cdot \text{HLB1} + (1-f) \cdot \text{HLB2} \]

\[ \text{Cl}_t = \frac{\text{Amount absorbed}}{\text{AUC}_0^o} \quad \text{or} \quad \frac{\text{FD}}{\text{AUC}_0^o} \]

\[ V_d = \frac{\text{A}_0}{\text{C}_0} \]

\[ V = W \cdot E \cdot 111.1 \]

For weak acids, percent ionization = \[ \frac{100}{1 + \text{antilog} (pK_a - \text{pH})} \]

For weak bases, percent ionization = \[ \frac{100}{1 + \text{antilog} (\text{pH} - pK_a)} \]

\[ \bar{C}_{ss} = \frac{R_0}{kV_d} \]

\[ C = \frac{R_0}{kV_d} (1 - e^{-kt}) \]
LAYOUT OF CALCULATOR USED FOR PEBC EXAMINATIONS
Sharp Scientific Model EL-510R

2nd F (Second Function)
Press to access a function shown in yellow above a key.

For Functions such as log ln 10^x e^x etc.
(shown in yellow above a button)
Press 2nd F key first.

ON/C (for On or Clear)
This key is framed in red.

These 3 keys (framed in white) are used to store and recall memory.

= (Equal Sign)
Press to display answer.
Basic Instructions For Calculator Use

To turn on calculator, press ON/C (“on/clear”) key (at top right corner, framed in red).

To turn off calculator, first press 2ndF key (circle at top left corner), then press ON/C key.

Initial setup (preset for this exam), use Normal Mode selection, that is, to perform arithmetic and function calculations: first press 2ndF (top left corner) key, then press MODE (key second from left which says “DRG”), then press ZERO key (bottom left corner).

To clear the visual display window, you have 2 choices of clearing methods:

1. Press ON/C (on/clear) key (top right corner, framed in red).

OR:

2. First press 2ndF (top left corner) key, then press CA (second from top right) key.

Arithmetic operations (use for addition, subtraction, multiplication, division):

Press desired number, then operation sign, then desired number, then “ = ” (bottom right)
e.g., 56 X 2 = (window shows answer of 112)

To use a “Second function” shown in YELLOW colour above a key, first press 2ndF key (circle at top left corner). Note: the location of these second functions may differ from some other models.

e.g., Log and Ln operations: (using 2nd F yellow keys above “1” and “2” keys respectively)

e.g., to calculate ln (5.7)
Press 2ndF (circle key, top left), then “ln/2” key, then desired number, then “ = ”
“2ndF” “ln/2” “5.7” “=” (window shows answer of 1.740466175)

e.g., Antilog (10^n) function: (using 2nd F yellow key above “0” key (bottom left corner)

Press 2ndF (circle key, top left), then “0” key (with 10^n above it), then desired number, then “ = ”

To Edit (i.e., used if you want to change an entry), press either arrow key (top row, centre) to move the cursor forward or back.

To delete a number, move the cursor to the number you wish to delete, then press DEL key (near top right).

To insert a number, move the cursor to the place immediately after where you wish to insert, then enter (type) the number.

To Store and Recall Memory (using set of 3 keys “RCL” “STO” and “M+” shown in white box on right side of third row of keys):

Press desired number or operation, then “STO” and “M+” to store in the memory.
e.g., ON/C 8 X 2 STO M+ [stores answer of 16 in memory]

Press desired number or operation, then “RCL” and “M+” to recall from the memory.
e.g., 24 + RCL M+ = [gives an answer of 1.5 to the question 24 ÷ (8X2) ]
Pharmaceutical References and Learning Resources
• Latest Edition •

General Reference Information

The Pharmacy Examining Board of Canada does not endorse any preparatory course of any kind whatsoever, and any pretence by an individual or group in making such a claim is liable to legal prosecution.

It is the candidate’s responsibility to utilize suitable reference materials and other resources in preparation for the Pharmacist Evaluating Examination. You should identify your personal learning needs in accordance with the examination blueprint (and consideration, if applicable, of feedback from any previous examination attempt).

It is important for practising pharmacists to continually stay up to date with therapeutics and clinical guidelines and other pharmacy practice issues. This includes staying current as new developments reach practice and the workplace. It is important for candidates to use current information (including most current textbook editions) when preparing for the Pharmacist Evaluating Examination.

From time to time, additional reference and learning resource suggestions may appear on the PEBC website.

In addition to your university education and personal learning, the ideal tool for acquiring Canadian pharmacy practice skills is to undertake "hands on" practice experience working in a Canadian pharmacy setting with direct patient care services. Practice experience will offer insights into the role of the pharmacist in Pharmaceutical Care practice, the Canadian health system, legal, professional and ethical issues, and commonly seen clinical therapeutics, technical and other practice scenarios.

There are a number of structured, preparatory “bridging” programs currently available in Canada, including: the International Pharmacy Graduate (IPG) Program in Ontario at the University of Toronto; the Canadian Pharmacy Practice Programme in British Columbia (at the University of British Columbia Point Grey Campus) and the International Pharmacy Bridging Program in Alberta (Bredin Institute in Edmonton). Please refer to the Internet Resources section for contact information about these programs. You may also wish to contact the regulatory authorities in other provinces for information regarding other assistance or programs for acquiring skills for practice as a pharmacist in Canada.
Reference Listings

The following listings are intended as a general guide and cover a variety of topics and may be helpful to you as you prepare to take the Pharmacist Evaluating Examination. This list covers a wide variety of pharmaceutical topics, but it is NOT intended to serve as a detailed syllabus nor should it be assumed that these resources are the source of examination questions. Listings are presented in the following four sections:

• pharmacy review guides,
• pharmacy textbooks,
• federal legislation and
• internet resources.

Pharmacy Review Guides

These four American pharmacy review guides are comprehensive subject reviews containing a large number of multiple-choice questions, covering many subject areas related to pharmaceutical education and pharmacy practice issues. Note that drug names and units of measure may be different in Canada. Federal law review questions must be avoided as they are based on American legislation, not Canadian.

Appleton and Lange Review of Pharmacy, by Hall and Reiss, McGraw-Hill Medical.

Appleton and Lange’s Quick Review Pharmacy, by Generali and Berger, McGraw-Hill Medical.

ASHP’s PharmPrep: Interactive Case-based Board Review, by Ginsburg, American Society of Health-System Pharmacists, available in print or CD-ROM (240 cases and over 2500 sample questions) website: www.ashp.org (click on Bookstore then Student Resources section).

Comprehensive Pharmacy Review, ed. by Shargel et al, Lippincott Williams and Wilkins.
Pharmacy Textbooks (current editions)

The first seven listings are all textbooks published by The Canadian Pharmacists Association, Ottawa, ON (www.pharmacists.ca) and may be ordered by phone: 1-800-917-9489 (Canada only) or 613-523-7877.

**Therapeutic Choices**, ed. by Gray, Canadian Pharmacists Association.

**Self Care** Two-volume set

1) **Patient Self-Care (PSC) Helping Your Patients Make Therapeutic Choices**, Canadian Pharmacists Association.

2) **Compendium of Self-Care Products (CSCP)**, Canadian Pharmacists Association.

**Compendium of Pharmaceuticals and Specialties** (CPS), Canadian Pharmacists Association. Useful overview information is found on the front page “CPS At a Glance” and by checking the “Table of Contents” listing of information sections and topics.

**Guide to Drugs in Canada**, ed. by Raman-Wilms, Canadian Pharmacists Association. (This is a home reference guide to help patients with taking medications.)

**Pharmacy Management in Canada**, by Bachynsky, Canadian Pharmacists Association.


**Seamless Care: A Pharmacist’s Guide to Providing Continuous Care Programs**, MacKinnon, Canadian Pharmacists Association.
Additional Textbook Listings

The listings shown here are major textbook references which form the framework for many of the Canadian undergraduate pharmacy programs. Some of the references are also used by practicing pharmacists in their various workplace settings. For your easy reference to search out a reference in a particular subject, the titles are organized under the headings of the four major subject areas of the Pharmacist Evaluating Examination blueprint.

Biomedical Sciences:


Robbins & Cotran Pathologic Basis of Disease, ed. by Kumar, et al, Saunders.


Fundamentals of Anatomy and Physiology, by Rizzo, Delmar Publishers Inc.

Human Physiology From Cells to Systems, by Sherwood, Brooks Cole.

Human Molecular Genetics, by Strachan, Garland Publishing.

Jawetz, Melnick & Adelberg's Medical Microbiology, ed. by Brooks, McGraw-Hill.

Review of Medical Microbiology & Immunology, Levinson, McGraw-Hill.

Tietz Fundamentals of Clinical Chemistry, ed. by Burtis, Saunders.

Pharmaceutical Sciences:

Goodman & Gilman's: The Pharmacological Basis of Therapeutics, ed. by Brunton et al, McGraw-Hill.

Principles of Medical Pharmacology, ed. by Kalant et al, Elseview Canada

Rang and Dale's Pharmacology, Rang, Churchill Livingstone.

Basic and Clinical Pharmacology, ed. by Katzung et al, McGraw Hill.

Foye's Principles of Medicinal Chemistry, ed. by Lemke and Williams, Lippincott Williams and Wilkens.

Martin’s Physical Pharmacy and Pharmaceutical Sciences, by Sinko, Lippincott Williams and Wilkins.

Ansel’s Pharmaceutical Dosage Forms and Drug Delivery Systems, by Allen, Lippincott Williams and Wilkins.


Clinical Pharmacokinetics & Pharmacodynamics, by Rowland, Lippincott Williams and Wilkins.

Pharmaceutical Biotechnology: Fundamentals and Applications, by Crommelin and Sindelar, Informa Health Care USA Inc.

Pharmaceutical Biotechnology, by Zito, CrC Press Llc.

Principles of Biochemical Toxicology, by Timbrell, Informa Healthcare.


Pharmacy Practice:

Applied Therapeutics, The Clinical Use of Drugs, ed. by Koda-Kimble, Lippincott Williams and Wilkins. (A comprehensive, patient case-based reference)


Pharmacotherapy: Principles and Practice, Chisholm-Burns et al, McGraw-Hill Medical

Clinical Pharmacy and Therapeutics, ed. by Walker and Whittlesea,Churchill Livingstone.

Hansten and Horn’s Drug Interactions Analysis and Management, by Hansten and Horn, Lippincott Williams and Wilkins.


Remington: The Science and Practice of Pharmacy, Lippincott Williams and Wilkins.


Pharmaceutical Calculations, by Ansel, Lippincott Williams and Wilkins.


Pharmacists Talking with Patients, by Rantucci, Lippincott Williams and Wilkins.


Herbal Medicines, by Barnes, Pharmaceutical Press.

The Language of Medicine, by Chabner, Saunders.

Making Sense of Critical Appraisal, by Ajetunmobi, Arnold.

Focus on Safe Medication Practices, Rantucci, Stewart and Stewart, Lippincott Williams and Wilkins.
Behavioural, Social and Administrative Pharmacy Sciences:

Pharmacoepidemiology: Principles for Practice, Montagne and Waning, McGraw-Hill.

Principles of Pharmacoeconomics, by Bootman, Townsend and McGhan, Harvey Whitney Books.

Pharmacoeconomics and Outcomes: Applications for Patient Care, ed. by Grauer et al, American College of Clinical Pharmacy.

Introduction to Applied Pharmacoeconomics, by Vogenberg, McGraw-Hill.

Marketing for Pharmacists: Providing and Promoting Professional Services, by Holdford, McGraw-Hill.

Supervision: A Pharmacy Perspective, by Wick, APhA Publications.

Pharmacy: An Introduction to the Profession, by Posey, APhA Publications.

A Practical Guide to Contemporary Pharmacy Practice, by Thompson, Lippincott Williams and Wilkins.


Pharmacoethics A Problem-Based Approach, by Gettman and Arneson, CrC Press Llc.

Ethical Issues in Pharmacy, by Weinstein, Applied Therapeutics.
Internet Resources

The following listings include a selection of websites with specific kinds of information such as current legislation, pharmacy practice resources, and other timely topics which are useful to practising pharmacists and those who are seeking licensure as pharmacists in Canada. Note that provincial regulatory authorities other than those listed may offer similar resources that you can access.

Government Websites Helpful For Pharmacy Practice

National Association of Provincial Regulatory Authorities www.napra.org

Useful links include the following:

Pharmacy Practice and Regulatory Resources
Pharmacy Practice Resources section includes:
- Distribution of Medication Samples
- Drug Information Resources
- Minimizing Medication Errors
- Oral Contraceptives for Emergency Contraception
- Pharmacy Care Plans

Federal Drug Legislation
National Drug Schedules (I, II and III)
Licensing/Registration
Federal legislation, which governs the Drugs Strategy and Controlled Substances Programme of HEALTH CANADA’s HECS “Healthy Environments and Consumer Safety” directorate, includes the following acts and regulations which pertain to pharmacy practice in Canada:

Canada Health Act - From menu at left, click on “Health Care System”, then click on the link for: Canada’s Health Care system: Canada Health Act information.

From main page, use the search button at the top to find information on:
• Food and Drugs Act and Regulations (with sections relating to prescription and nonprescription drugs and controlled substances), and Schedules (including Schedule G-Controlled Drugs)
• Controlled Drugs and Substances Act (CDSA) and Regulations (including Precursor Control Regulation)
• Narcotic Control Regulations
• Benzodiazepines and Other Targeted Substances Regulations
• Marijuana Medical Access Regulations

MedEffect: Advisories, Warnings and Recalls and Canadian Adverse Reaction Newsletter, under Health Canada’s “Drugs and Health Products”, click on “MedEffect”

Canadian Agency for Drugs and Technologies in Health www.cadth.ca
• Useful links include “Common Drug Review” and “Canadian Optimal Medication Prescribing and Utilization Service”

Privacy Legislation www.privcom.gc.ca
• See link for Personal Information Protection and Electronic Documents Act (PIPEDA)

Public Health Agency of Canada www.phac-aspc.gc.ca
• See link for “Immunization & Vaccines” for Canadian Immunization Guide Seventh Edition - 2006
Some Learning Tools and Other Resources Available on PRA or University websites:

College of Pharmacists of British Columbia  www.bcpharmacists.org
   On Main Menu:
      • Resources
      • Professional Development

Ontario College of Pharmacists  www.ocpinfo.com
   • CE for Pharmacists
   • Professional Practice

Manitoba Pharmaceutical Association  www.mpha.mb.ca/resources.htm
It includes the following categories of learning resources and links:
   • Drug information
   • Medical Literature Databases
   • PDA Resources
   • Patient Safety Resources
   • Senior Health Resources

Dalhousie University  (Halifax, Nova Scotia):  http://pharmacy.dal.ca/
   • Resources
   • Continuing Pharmacy Education

Please visit websites regularly, for updates and corrections.
For Suggestions for Clinical Practice Guidelines:

To obtain up to date evidence-based information designed to assist in patient care decisions for the management of specific disease states, you may search, using your Internet browser, for "Canadian Consensus Guidelines" or "Clinical Practice Guidelines" (and narrow the search by selecting a specific disease state). Adding the current year to your search will help to ensure that the most recent updates to guidelines are listed at the beginning of your search results.

Some examples include the following:

- Hypertension (Canadian Hypertension Education Program (HEP)) 2009 Recommendations for the Management of Hypertension
- CHF (Canadian Cardiovascular Society) 2009 Recommendations on heart failure
- Diabetes (Canadian Diabetes Association) 2008 Clinical Practice Guidelines for the Prevention and Management of Diabetes in Canada
- Asthma (Canadian Asthma Consensus Guidelines)
- COPD (Canadian Thoracic Society) 2007 Recommendations for the Management of COPD

Additional:

- The Canadian Medical Association Journal (CMAJ) website (www.cmaj.ca) offers other clinical practice guidelines and information on a variety of disease topics, e.g., dyslipidemia; osteoporosis

- Health Canada web site (www.hc-sc.gc.ca) – click on Health Concerns and Healthy Living from menu at the left

- Public Health Agency of Canada (www.phac-aspc.gc.ca) - click on Diseases and Conditions from menu at the left

Other:

Developing Pharmacy Practice: A Focus on Patient Care
www.who.int/medicines/publications/WHO_PSM_PAR_2006.5.pdf (content topics include Pharmaceutical Care, Pharmacy practice trends, Drug Information and literature appraisal, and Pharmacoeconomic analysis)

Institute for Safe Medication Practices
www.ismp.org click on “Medication Safety Tools and Resources” section

US National Library of Medicine – Drugs and Lactation Database (LactMed)
For Information about International Pharmacy Graduate “bridging” programs:

www.ipgcanada.ca (Ontario)
  Canadian Pharmacy Skills
  Enhanced Language Program

www.pharmacy.ubc.ca/programs/non-degree-programs/practice (British Columbia)
  Canadian Pharmacy Practice Programme

www.bredin.ab.ca (Alberta)
  International Pharmacy Bridging Program

From time to time, additional links may be updated on the PEBC website: (www.pebc.ca)

For Information about Continuing Education (CE) Learning:

Continuing Education in Pharmacy in Canada is coordinated by CCCEP: the Canadian Council on Continuing Education in Pharmacy. CCCEP-approved learning programs are available from a wide variety of sources. Some of these include the following:

Canadian Pharmacists Association (CPhA) (www.pharmacists.ca)
Go to Quick Links and click on CE, then Online Learning Centre

Pharmacy Gateway (www.canadianhealthcarenetwork.ca)
Pharmacy Gateway provides CE lessons from Pharmacy Practice and other sources
Click on Pharmacist for CE Online

Teva (www.tevacanada.com)
Click on Professional Development, then Continuing Education for Pharmacists

rXBriefCase (www.rxbriefcase.com)
  Includes links to various CE learning resources, including the Mylan Collaborative Series

PHARMALearn (www.pharmalearn.ualberta.ca)

Provincial Regulatory Authorities (PRAs) and the schools of Pharmacy within Canadian universities offer information and access to other CE learning opportunities (see PRA listing on PEBC website)

Most of CE learning modules are designed to enhance individual knowledge in Therapeutics and Disease State Management. When choosing to self-study with CCEPP-approved CE learning modules, it is important for a candidate to self-assess the wide
range of available disease state and therapeutics topics and make selections to ensure that:
1) individual gaps in knowledge will be addressed, and
2) disease topics reflect those seen most frequently in patient care practice settings, as well as those where drug therapy plays an important and critical role in patient care outcomes.