DEPARTMENT OF PHARMACY

SECONDBPHARM PART II EXAMINATION – SEPTEMBER 2020

PH 2214 PHARMACEUTICS III (SEQ)

TIME: THREE HOURS

INSTRUCTIONS

- There are **six** questions in part **A**, **B** and **C**.
- Answer **all** questions in the books provided.
- No paper should be removed from the examination hall.
- Do not use any correction fluid.
- Use illustrations where necessary.

PART A

01.

1.1 Define the following terms in health economics. Give examples.

1.1.1 Scarcity (*10 marks*)

1.1.2 Opportunity cost (*10 marks*)

1.2 Differentiate between **two** concepts in microeconomics and macroeconomics. (*10 marks*)

1.3 Briefly describe the **three** types of costs associated with health care. Give examples for each category. (*30 marks*)

1.4 Draw the curves described in health economics related to following.

1.4.1 Total Utility Curve for Health (*05 marks*)

1.4.2 Marginal Utility Curve for Health (*05 marks*)

1.5

1.5.1 Name **four** types of evaluation methods in economics. (*10 marks*)

1.5.2 Compare the **four** types of evaluation methods. Give the consequences and results. (*20 marks*)

02.

2.1 State **five** criteria of a good research study. (*10 marks*)

2.2 Differentiate dependent and independent variable? (*10 marks*)

2.3 Read the abstract given below and answer the questions.

Why do Australian registered pharmacists leave the profession? a qualitative study

Vivienne S. L. Mak, Geoff J. March, Alice Clark & Andrew L. Gilbert

International Journal of Clinical Pharmacy volume 35, pages129–137(2013)

Abstract

Background: Understanding why people choose to leave their professions is important to inform workforce planning to meet community needs. Poor job satisfaction has been linked to health practitioners expressing intentions to leave in other professions such as nursing, occupational therapy and medicine, but little is known about the reasons why pharmacists leave their profession.

Objective: To explore reasons why Australian pharmacists leave the profession.

Method: As part of a survey of the Australian pharmacist workforce, a questionnaire was mailed to all registered pharmacists (n = 7,764) on the registers of the Pharmacy Boards of Victoria and South Australia; 1,627 (21 %) responded. Participants, who were registered but no longer working as a pharmacist, were asked to provide contact details if they were willing to be interviewed for this study; 89 (5.5 %) pharmacists accepted an invitation. A proportionate sample of 20 was selected for the interview.

A semi-structured interview schedule was developed with probe options which encouraged participants to further explore their responses to questions. De-identified audio records of interviews were transcribed verbatim and thematically analysed. Main outcome measure was reasons why pharmacists leave the pharmacy profession.

Results Five themes emerged: (1) Dissatisfaction with the professional environment; (2) lack of career paths and opportunities; (3) under-utilisation of pharmacists' knowledge and skills; (4) wanting a change; and (5) staying connected with pharmacy.

Conclusion: These findings provide insights to the pharmacy sector, previously unexplored in Australia, and informs future pharmacist workforce planning. To retain experienced, mid-career pharmacists in the profession, strategies to increase opportunities for career progression, better use of pharmacists' knowledge and skills and involvement in patient care are required to increase job satisfaction and improve retention rates.

2.3.1 Is this a qualitative research or a quantitative research? (***10 marks***)
2.3.2 What is the objective of this research? (***10 marks***)
2.3.3 What is the method researchershave used to collect data? (***10 marks***)
2.3.4 State the main outcome measure of the study. (***10 marks***)
2.3.5 Briefly describe the conclusion of this research. (***10 marks***)
2.3.6 Who are the authors of the article? (***20 marks***)
2.3.7 What is the journal in which they have published this article? (***10 marks***)

PART B

03.

3.1 List **five** advantages of essential medicines list. (***15 marks***)
3.2 List **five** methods which can be used to improve rational dispensing practices. (***15 marks***)
3.3 Briefly explain **three** advantages of rational use of medicines. (***30 marks***)
3.4 Briefly explain **four** services delivered by preventive primary health care in Sri Lanka. (***40 marks***)

04.

4.1 List **four** advantages of pharmacoepidemiology for pharmaceutical research. (***20 marks***)
4.2 Briefly explain about cohort studies. (***40 marks***)
4.3 Imagine that we were interested in the problem of diabetes in a nursing home with 1600 residents. We would begin by doing blood tests on all residents to determine who are diabetic patients.

4.3.1 If 100 of the residents were diabetic initially, what is the prevalence of diabetes at this point in time per 1000 residents? (***05 marks***)

4.3.2 Assume after 12 months, all 1600 residents were retested and 50 new diabetic patients were found. Estimate the cumulative incidence of diabetes in this population over the 12 months per 1000 residents. (***15 marks***)

4.4 A follow-up study was conducted to determine which sexual behaviors were associated with the greatest risk of becoming HIV+. The study was conducted in a group of female

women were excluded. The remaining ten women were followed for six years beginning in January 1989. Each woman was contacted and retested at the beginning of January each year. The table below summarizes the findings these ten subjects. A circled plus sign (⊕) indicates when a subject was found to be HIV+; a question mark (?) indicates when a subject became lost to follow-up. The dashed lines indicate continued follow-up. Calculate the incidence rate of becoming a HIV positive. ***(20 marks)***

	Follow-up						
Subject	1989	1990	1991	1992	1993	1994	Disease-free Yrs
1	.....	⊕.....	.....	.....	.....	.....	1
2	.....	?					1
3	.....	.....	⊕.....	.....	.....	.....	2
4	.....	?					1
5	.....	.....	.....	?			3
6	.....	.....	.....	.....	.....	?	5
7	.....	.....	.....	.....	.....	.....	6
8	.....	.....	.....	.....	.....	?	5
9	.....	⊕.....	.....	.....	.....	.....	1
10	.....	⊕.....	.....	.....	.....	?	1

05.

5.1 Define the term "absolute risk". ***(10 marks)***

5.2 Define the term "relative risk". ***(10 marks)***

5.3 Refer the table given below and answer question 5.3.1 to 5.3.4.

	Developed sexual dysfunction	Did not develop sexual dysfunction	Total
Received vanlafaxine	8	32	40
Received placebo	3	33	36
Total	11	65	76

5.3.1 Calculate absolute risk of developing sexual dysfunction with venlafaxine. ***(10 marks)***

5.3.2 Calculate absolute risk of developing sexual dysfunction with placebo. ***(10 marks)***

5.3.3 Calculate the relative risk of developing sexual dysfunction due to use of venlafaxine for the above study. ***(10 marks)***

5.3.4 Interpret your results in 5.3.3. ***(10 marks)***

5.4 Categorize following tests into parametric tests and nonparametric tests. ***(20 marks)***

Wilcoxon's signed rank test, One sample t-test, Mann-awhitney U-test, Unpaired t-test.

5.5 Define the term "confounding". *(10 marks)*

5.6 List **two** characteristics of confounding factors. *(10 marks)*

PART C

06.

6.1 What is the difference between extemporaneous preparation and manufacturing? *(05 marks)*

6.2 List **ten** equipment necessary for compounding. *(10 marks)*

6.3 State **five** advantages that can be achieved from extemporaneous preparations. *(10 marks)*

6.4 List **five** good compounding practices you need to follow in extemporaneous compounding. *(10 marks)*

6.5 Briefly explain the **six** steps of dispensing cycle. *(35 marks)*

6.6 You receive the following prescription to your pharmacy for a suspension of Magnesium Trisilicate Mixture BP.

Patient	:	**Mr. J A Perera, No.83, Elvitigala Road, Colombo 08**
Age	:	**43 years**
Prescription	:	**Magnesium Trisilicate Mixture BP**
Direction	:	**10 mL tds**
Mitte	:	**250 mL**

6.6.1 Calculate the quantity of ingredients required, using the following master formula. *(20 marks)*

	1000 mL
Magnesium Trisilicate BP	50 g
Light Magnesium Carbonate BP	50 g
Sodium Bicarbonate BP	50 g
Concentrated Peppermint Emulsion BP	25 mL
Double Strength Chloroform Water BP	500 mL
Potable water	to 1000 mL

6.6.2 Design the label to be attached to the container of the above medication before dispensing. *(10 marks)*

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