

BACHELOR OF PHARMACY HONOURS
ACADEMIC YEAR 2019/2020 – SEMESTER II
FMU4304 – HOSPITAL PHARMACY – LEVEL 4
FINAL EXAMINATION
DURATION: THREE HOURS



DATE: 10TH AUGUST 2021

TIME: 09.30 A.M. – 12.30 P.M.

Part B – SAQs (20 marks)

01.

1.1 Define the term “Pharmacoepidemiology”. (02 marks)

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1.2 Write four (04) roles of pharmacists in pharmacoepidemiology. (04 marks)

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1.3 Give one (01) reason for conducting pharmacoepidemiological studies in each of the following instances. (02 marks)

a. Pharmaceutical industry

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b. Pharmaceutical care

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1.4 State the most appropriate study design in conducting the following pharmacoepidemiological studies. (02 marks)

Pharmacoepidemiological study	Study design
I. A study assessing characteristics associated with a history of suicide attempts among psychiatric outpatients. 154 suicide attempts and 122 patients without suicide attempt history who attended the two hospitals were considered in this study.
II. A researcher follows a sample of 400 diabetic patients for 10 years to assess the long term effects of metformin in diabetic patients. 200 patients were taking metformin and the rest were on other oral anti-diabetics (other than metformin).

02.

2.1 What is mean by "Essential Medicines"? (02 marks)

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1.2 Write three (03) main factors considered in the selection of essential medicines? (03 marks)

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1.3 What is a 'complementary list of medicines' in an Essential Medicines List (EML)?

(02 marks)

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1.4 Write three (03) advantages of having an EML.

(03 marks)

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Part C – SEQs (60 marks)**(Each SEQ has 50 marks and total marks for Part C will be converted into 60 marks)****01.**

1.1 Write three (03) benefits of effective healthcare team work in each of the following.

- a. Benefits to the organization (03 marks)
- b. Benefits to patient (03 marks)
- c. Benefits to team member (03 marks)

1.2 “Speed of the patient should be balanced with the accuracy and patient care in the dispensing process.” According to this statement, write four (04) practices to achieve efficient dispensing to ambulatory patients. (08 marks)

1.3 Compare complete floor stock system and unit dose dispensing system with regard to hospital inpatient dispensing. (15 marks)

1.4 Briefly explain the role of a pharmacist in providing effective medication therapy management with regard to Good Pharmacy Practice. (18 marks)

02.

2.1 What are the five (05) elements considered in determining the total cost of a medicine? (05 marks)

2.2 Compare open tender procurement method and restricted tender procurement method. (15 marks)

2.3 Briefly explain four (04) different supply chain systems currently used by the government in order to supply pharmaceuticals to the health service. (12 marks)

2.4 Briefly explain three (03) main procedures that needs to be established in a country in order to ensure quality assurance in pharmaceutical procurement. (18 marks)

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03.

3.1 Define following terms.

- a. Medication errors (ME), (02 marks)
- b. Adverse Drug Reactions (ADR) (02 marks)
- c. Adverse Drug Events (ADE) (02 marks)

3.2 Illustrate the relationships between the key terms defined in 3.1 using a diagram.

(06 marks)

3.3 Classify the following medication errors based on the severity of the outcome using *NCC MERP Index for Categorizing Medication Errors*. Justify your answer for each incident. You have been provided with the *NCC MERP Index for Categorizing Medication Errors* in page no.12.

- a. A 56-year-old female with hyperkalemia was in a medical intensive care unit and was ordered to receive sodium polystyrene sulfonate (Kayexalate®) via rectal administration. The registered nurse caring for this patient inadvertently administered the medication through the urinary (Foley) catheter instead of the rectal tube. The patient developed cystitis because of the error, which required a consultation by urologist to determine treatment options. (06 marks)
- b. A physician writes an order for primidone (Mysoline) for a 12-year old boy with a seizure disorder. Misreading the physician's handwriting, the pharmacist mistakenly fills the order with prednisone. For four months, the boy receives prednisone along with his seizure medications, causing steroid-induced diabetes. The diabetes goes unrecognized and he dies from diabetic ketoacidosis. (06 marks)
- c. A patient admitted because of recurrent presyncope (*Presyncope* is the sensation of feeling faint without actually fainting) and he was taking a daily dose of digoxin 1.25 mg before admission to hospital. However, the digoxin therapy was not recorded in the medication history. This was identified by the clinical pharmacist and informed to the physician soon after the admission. (06 marks)

3.4 Briefly explain four (04) strategies that can be practiced as a hospital pharmacist in order to avoid medication errors. (20 marks)

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04.

Your hospital Drug Therapeutic Committee (DTC) is considering a new antibiotic for the formulary. The name of this antibiotic is cefapime and it is similar to a formulary product, cefotaxime, a third-generation cephalosporin. It would be used in the emergency room as a single dose for treating febrile children with the diagnosis of acute respiratory infection or otitis media.

This medicine is an injectable at a high cost of Rs. 500.00 per dose. Although expensive, cefapime is required (according to the requesting physician) because of a high incidence of antimicrobial resistance (AMR) in the hospital to commonly used medicines. The physician also states that use of the medicine will decrease the overall cost because hospitalizations of these sick children will be decreased with appropriate use.

Authoritative staff working at the emergency room at night would be the primary prescribers of this medicine. This medicine is heavily promoted by a pharmaceutical manufacturer for treating many different paediatric infections. Other medicines for these problems that are available on the formulary include amoxicillin, co-trimoxazole, and cefalexin. Typically the DTC has provided very little evaluation of a new medicine because a physician's recommendation was enough for approval by the committee.

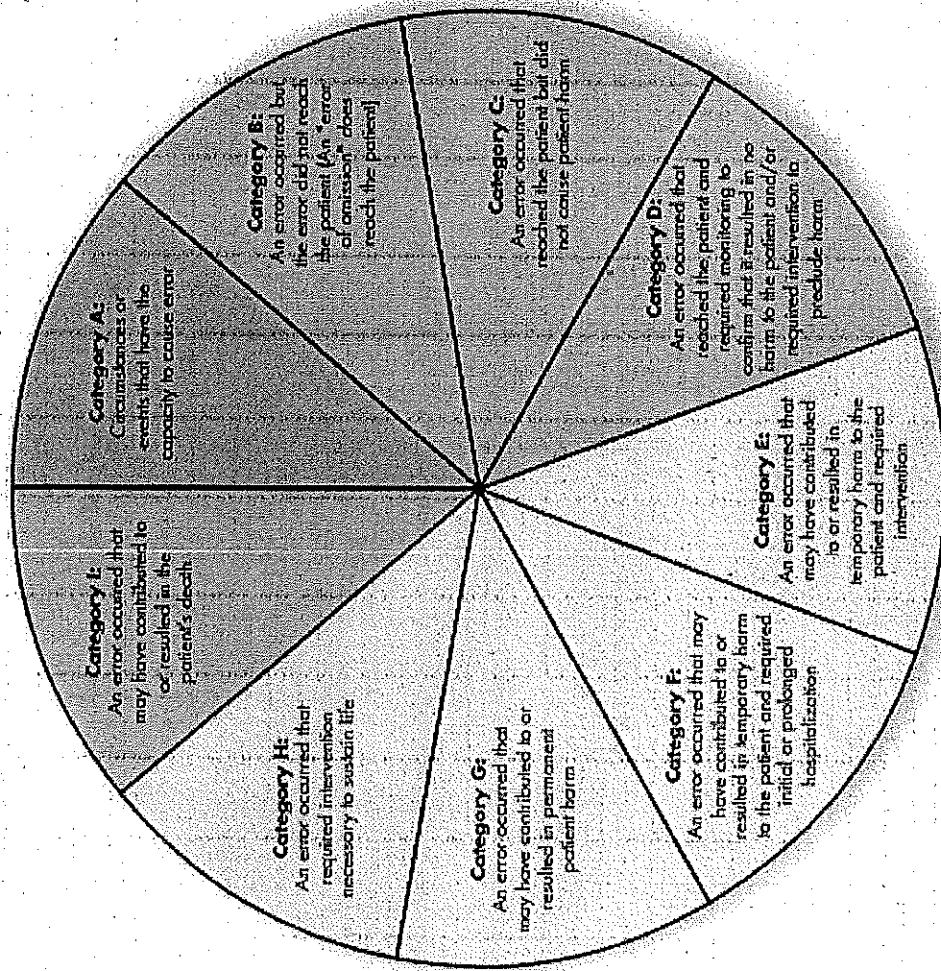
4.1 What are the information required in making a request for addition of a new medicine to a formulary? (16 marks)

4.2 What are the criteria to be considered to assess the feasibility of adding this medicine to the formulary? (07 marks)

4.3 What major concerns do you have before adding this medicine to the formulary? (15 marks)

4.4 What type of drug information sources would be used to analyze this medicine for the approval by DTC? Briefly explain resources you have listed by providing two (02) examples for each. (12 marks)

NCC MERP Index for Categorizing Medication Errors



- No Error
- Error, No Harm
- Error, Harm
- Error, Death

Definitions

Harm
Impairment of the physical, emotional, or psychological function or structure of the body and/or pain resulting therefrom.

Monitoring
To observe or record relevant physiological or psychological signs.

Intervention
May include change in therapy or active medical/surgical treatment.

Intervention Necessary to Sustain Life
Includes cardiovascular and respiratory support (e.g., CPR, defibrillation, intubation, etc.)

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