

34/40

DEPARTMENT OF PHARMACEUTICAL AND MEDICINAL CHEMISTRY
COLLEGE OF PHARMACY,
AFE BABALOLA UNIVERSITY
2022/2023 Session (Second Semester)
PCH 402 (Medicinal Chemistry I- Drug Design) Mid-Semester Test

ATTEMPT ALL 40 QUESTIONS.

TIME ALLOWED: 1 HOUR

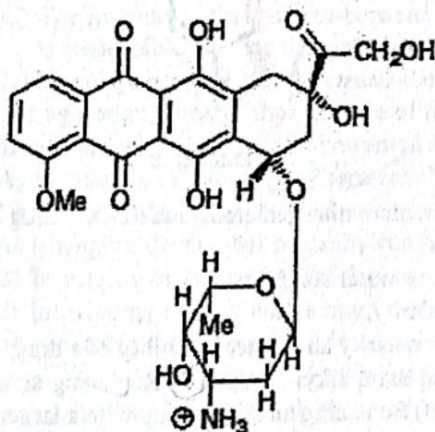
Student Matric No: 1

2

3rd May, 2023

For questions 1 – 40, select the option that best answers the question.

- Which of these properties indicates the ability of a drug molecule to penetrate the cell membrane?
(A) Increased partition coefficient (B) Increased dissociation constant (C) decreased partition coefficient (D) increased solubility
- When the shape and electronic distribution of a drug molecule is complimentary with the stereoelectronic structure of the active site, it explains the
(A) Pharmacodynamic of the drug (B) Bioequivalence of the drug (C) Toxicity of the drug (D) Absorption of the drug
- The degree of absorption of drug molecules can be related to such properties as EXCEPT
(A) Partition coefficient (B) Half-life (C) Solubility (D) Dissociation constant, pka
- The following antibiotic structure is an intercalating agent. What role does the ionic group serve in making this molecule an effective intercalating agent?

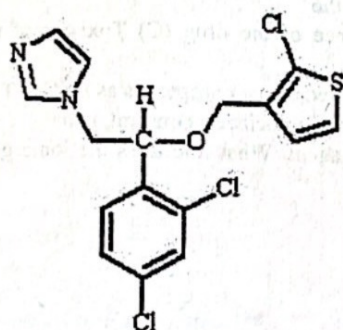


- (A) It interacts with charged phosphate groups in DNA to stabilise intercalation.
(B) It only becomes protonated when it enters cells and so becomes trapped within the cell leading to high concentrations of drug.
(C) It acts as a strong hydrogen bond donor with nucleic acid bases to stabilise intercalation.
(D) It increases water solubility allowing high dose levels to be used.
- Which of the following statements is NOT true?
(A) Absorption is the passage of the drug from its site of administration into the plasma after enteral administration
(B) Good absorption normally requires that a drug molecule has the correct balance between its hydrophilic and hydrophobic groups
(C) The ionization state of a drug does NOT influence the degree of absorption of such drug
(D) Drugs that are too polar will tend to remain in the bloodstream, whilst those that are too nonpolar will tend to be absorbed into and remain within the lipid interior of the membranes.

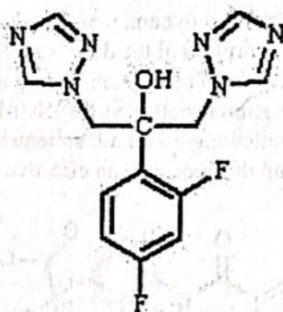
16
20

12. The io
parietal
(A)

6. Which of the following statements best describes structure-activity relationships (SAR)?
 (A) The study of which functional groups are important to the chemical reactivity of the drug.
 (B) The study of the structural features of a drug that are important to its biological activity.
 (C) The study of the structural features of a drug that are important to its chemical stability.
 (D) The study of the physicochemical properties that are important to the absorption of a drug into the blood supply.
7. Which of the following major aims in drug design is not related to the pharmacodynamics of a drug?
 (A) The reduction of side-effects (B) The maximisation of activity (C) The reduction of toxicity (D) The maximisation of oral bioavailability
8. Tioconazole is a non-polar antifungal agent which is used topically, whereas fluconazole is a polar drug which is used systemically. Which of the following statements is correct?

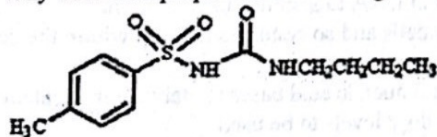


Tioconazole

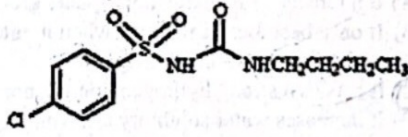


Fluconazole

- (A) The heterocyclic groups in fluconazole contain more nitrogen atoms making the drug less polar.
 (B) Increased polarity decreases water solubility.
 (C) The fluorine substituents in fluconazole increase water solubility.
 (D) The alcohol group in fluconazole increases polarity.
9. Which of the following strategies will increase the polarity and water solubility of a drug?
 (A) Removing polar functional groups (B) Adding extra alkyl groups (C) Replacing an aromatic ring with a nitrogen containing heterocyclic ring (D) Replacing an alkyl group with a larger alkyl group.
10. Why does chlorpropamide have a longer antibiotic activity than tolbutamide?



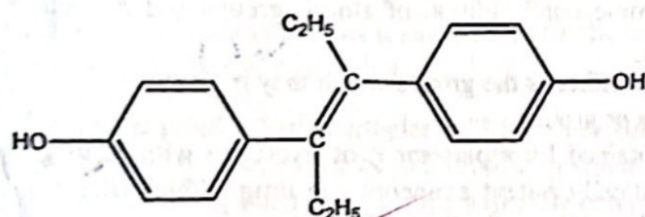
Tolbutamide



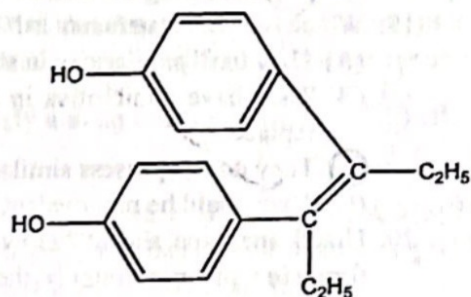
Chlorpropamide

- (A) The chloro group of chlorpropamide has an electron-withdrawing effect on the aromatic ring and stabilises the molecule.
 (B) The methyl group of tolbutamide is susceptible to drug metabolism whereas the chloro substituent of chlorpropamide is not.
 (C) The urea group of tolbutamide is more susceptible to hydrolysis than the urea group of chlorpropamide.
 (D) The sulfonamide group of tolbutamide is more susceptible to hydrolysis than the sulfonamide group of chlorpropamide.
11. Some drugs containing an ester group are inactive *in vitro*, but are active once the drug has been absorbed *in vivo*. What term is used for such drugs?
 (A) Antimetabolites (B) prodrugs (C) metabolites (D) prodrugs

12. The ionization of the analgesic aspirin is suppressed in the stomach by the acids produced from the parietal cells in the stomach lining. Which of these statements is correct?
- (A) It is absorbed into the bloodstream in significant quantities in its unionized form
 (B) It is absorbed into the bloodstream in significant quantities in its ionized form
 (C) The pK_a of aspirin makes it difficult for it to absorb in the stomach
 (D) Absorption of aspirin takes place more in the jejunum
13. Which of these is NOT a metabolic process involving a functional group change?
- (A) Conjugation (B) Ring hydroxylation (C) reduction of nitrogroup (D) aldehyde oxidation
14. *Trans*-diethylstilbesterol has higher oestrogenic activity than *cis*-diethylstilbesterol. Which of the following statements is true about this molecule?

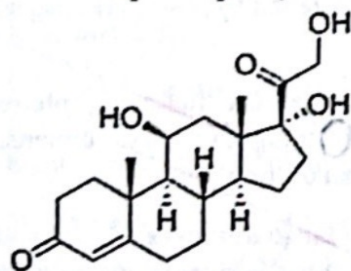


trans-diethylstilbesterol

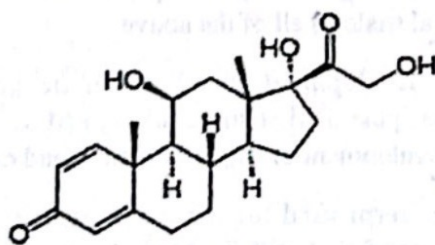


cis-diethylstilbesterol

- (A) The intramolecular distance of the drug molecule does not affect the biological activity in the body
 (B) The intramolecular distance between the two hydroxyl groups present in the *trans*-diethylstilbesterol is responsible for the higher activity
 (C) The intramolecular distance between the two hydroxyl groups present in the *cis*-diethylstilbesterol is responsible to cross the membrane
 (D) The alkyl groups present in *trans*-diethylstilbesterol improves its water solubility
15. In drug design, parts of the structure of the lead compound that are responsible for both its beneficial biological activity and also its unwanted side effects are referred to as
- (A) Ligands (B) Proteins (C) Pharmacophores (D) Atoms
16. The shapes and sizes of molecules can be modified in the following ways except
- (A) Changing the number of methylene groups in chains and rings
 (B) Increasing or decreasing the degree of unsaturation
 (C) Introducing or removing a ring system
 (D) Increasing the absorption of molecules
17. Prednisolone is 30 times higher in anti-inflammatory activity than cortisol. From structure-activity relationship standpoint, which of the statements describe the reason for the increased activity?



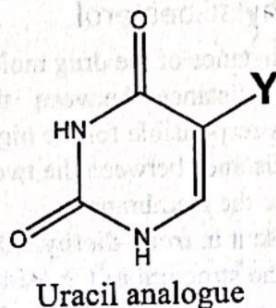
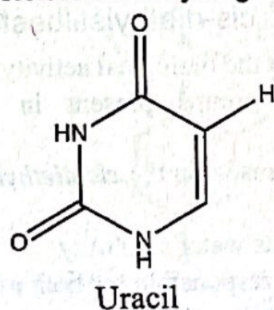
Cortisol



Prednisolone

- (A) The presence of OH provides a new centre for hydrogen, which could influence the binding of the drug to the target site.
 (B) Increased double bond character increases the rigidity of the molecule for stronger binding to the target

- (C) The effect of the rigidity of the molecule through additional double bond is insignificant to the binding
- (D) The structural orientation of the molecule result to the increase in biological activity
18. Which of these is NOT part of the usefulness of bioisosteres?
- (A) Reducing toxicity (B) ~~Changing~~ bioavailability (C) Modifying the activity of the lead compound
- (D) Increasing the amount of drug excreted from the body
19. Which of these statements is NOT true for classical bioisosteres?
- (A) They have similarities in shape of atoms, groups and molecules which they replace
- (B) They have similarities in electronic configuration of atoms, groups and molecules which they replace
- (C) They do not possess similar steric effect as the groups which they replace
- (D) They could be monovalent atoms or groups
20. Uracil analogue shown below is obtained by replacement of hydrogen with Y to give rise to the formation of an extremely therapeutically potent antineoplastic drug. Which of the following is a bioisostere of hydrogen suitable for this optimization?



- (A) NH (B) OH (C) CH₃ (D) F
21. What is meant by a lead compound in medicinal chemistry? a) A drug containing the element lead. b) A leading drug in a particular area of medicine. (C) A compound that acts as the starting point for drug design and development. d) A drug which is normally the first to be prescribed for a particular ailment.
22. Which of the following needs to be established before the search for a lead compound takes place? a) the pharmacophore b) Structure-activity relationships (C) a bioassay d) patents
23. Stages in the drug development pipeline include a) lead optimization b) post-marketing surveillance (C) preclinical trials d) all of the above
24. The drug development pipeline can be grouped into one of the following phases a) lead optimization, post-market surveillance, and lead identification (b) drug discovery, commercialization, and drug development c) target validation and clinical trials d) all of the above
25. What is the term used for the automated *in vitro* testing of large numbers of compounds using genetically modified cells? a) robotic testing (b) high throughput screening c) multiscreening d) nanotechnology
26. There are several sources and methods of discovering new compounds. Which of the following is most likely to lead to the discovery of a complex structure quite unlike any other previously discovered? a) combinatorial chemistry b) database mining (C) screening plant extracts d) Me-too drugs
27. Which source has been particularly fruitful in finding novel antitumour agents such as bryostatins and dolostatins? a) marine sources b) venoms and toxins (C) combinatorial chemistry d) animals
28. Which of the following drugs was not isolated from a natural source? a) quinine b) morphine (C) isoniazid d) artemisinin

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7. Natural products are often used as lead compounds in the design and synthesis of novel drugs. Which of the following general characteristics of a natural product is most likely to be a disadvantage in synthesising analogues? a) novelty of structure **b) complexity of structure** c) level of activity d) availability
30. Which of the following statements is not true of herbal medicines? a) Herbal medicines may contain a range of active principles acting together to produce a beneficial effect. **b) Herbal medicines have no side effects compared to conventional medicines.** c) It is more difficult to receive an overdose of an active drug if it is present in a herbal medicine rather than as a pure medicine. d) Certain compounds in herbal medicines may enhance the activity of the active principle.
31. Which of the following terms is used to describe a drug that has the same effect on a receptor as the endogenous chemical messenger? **a) agonist** b) antagonist c) partial agonist d) inverse agonist
32. Which of the following terms is the measure of how strongly a drug binds to a receptor? **a) affinity** b) efficacy c) potency d) stability
33. Which of the following strategies will increase the polarity and water solubility of a drug? a) Removing polar functional groups b) Adding extra alkyl groups **c) Replacing an aromatic ring with a nitrogen containing heterocyclic ring** d) Replacing an alkyl group with a larger alkyl group
34. What is meant by a binding site? **a) The area of a macromolecular target that is occupied by a drug when it binds.** b) The portion of the drug to which a drug target binds. c) The functional groups used by a drug in binding to a drug target. d) The bonds involved in binding a drug to its target.
35. Which of the following is one of the rules in Lipinski's rule of five? a) a molecular weight equal to 500 b) no more than five hydrogen bond acceptor groups c) no more than 10 hydrogen bond donor groups **d) a calculated logP value less than +5.**
36. What term is applied to a drug which is effective against a relatively rare medical problem? a) New chemical entity **b) Orphan drug** c) Lead compound d) Parent drug
37. Which of the following statements best describes structure-activity relationships (SAR)? **a) The study of which functional groups are important to the chemical reactivity of the drug.** b) The study of the physicochemical properties that are important to the absorption of a drug into the blood supply. **c) The study of the structural features of a drug that are important to its biological activity.** d) The study of the structural features of a drug that are important to its chemical stability.
38. Which of the intermolecular bonding interactions below are possible for an alcohol? **a) Hydrogen bonding only** b) van der Waals interactions only c) Ionic bonding only d) Both hydrogen bonding and ionic bonding
39. Which of the intermolecular bonding interactions below are possible for a primary amine? a) Hydrogen bonding only b) van der Waals interactions only c) Ionic bonding only **d) Both hydrogen bonding and ionic bonding**
40. New leads can be identified using which of the following sources? a) Waste products b) Prescription and nonprescription methods c) preclinical sources **d) Fortunate accident**



COLLEGE OF PHARMACY

SECOND SEMESTER 2022/2023 SESSION

Department of Clinical Pharmacy and Public Health

&

Department of Social and Administrative Pharmacy

Instructions

- 1. You have a total of 30 minutes for this test**
- 2. Each question should be answered in 15 minutes**

SAP 402

Mr AJ was recently diagnosed of HIV and was placed on ARV medications. He was however a known type 2 diabetes and hypertensive patient. He is married to Mrs BJ whose HIV status is not known because Mr AJ did not declare to her his status. He has kept his ARV medicines away from sight. The wife only knows of his oral hypoglycemic and anti-hypertensive medications. On this faithful day in clinic he was found to be non-adherent to his medications. His blood pressure and sugar level were not controlled. As the pharmacist, what do you envisage could be the likely causes of his non-adherence?

PAT 402

In severe hepatic impairment what should be done to the dose of the following drugs assuming they are metabolized solely by the liver?

- a. drugs whose metabolites are the active drug
- b. drug that the metabolites are inactive

As a general rule, at what dose should enzyme-dependent drugs be given to patients with hepatic failure?

SECTION C (2hours)

ESSAY (60 marks)

1. Assume you are the pharmacist on duty on a day that an elderly patient approaches your pharmacy with his prescription. The prescription contains a single medicine (drug). After filling the prescription, he needs detailed explanation regarding the drug you dispensed.
 - a. Reveal the named drug that you dispensed to the patient (2marks)
 - b. Practically give explanation to the following key questions the elderly patient has asked you concerning the named drug you dispensed.
 - i. What is the medicine for? (4marks)
 - ii. How do I take it? (4marks)
 - iii. Are there any side-effects? (5marks)

2. The patient is a 50-year old woman who has had type 2 diabetes for 1 year. She weighs 100 kg, and reports her self-monitored glucose to be about 200mg/dL. Her last laboratory report shows HbA1c to be 9%.

Patient: I know that my diabetes is a serious problem. I have read that diabetes can kill you or make you go blind. I certainly want to stick around to see my grandkids grow up.

Pharmacist: Your grandchildren are important to you and you want to be there for them.

Patient: Absolutely. It's just so hard to do everything – diet, exercise, take medications, test my blood.

Pharmacist: So, even though you want to make changes, you feel overwhelmed.

Patient: Exactly!

- a. Explain in detail what Empathic listening is. (4marks)
 - b. Using your explanation, analyze how the pharmacist has made use of it. (6marks)
 - c. Give a **brief** case study of how another pharmacist would have responded, without making use of empathic listening, and what the effect would have been on the patient. (5marks)
3. Read the given case and give answers to questions below.

Mrs. Monroe is obviously distressed. She has just learned that she has skin cancer. The pharmacist steps from behind the counter and motions Mrs. Monroe to a more private area. Mrs. Monroe indicates that the doctor was confusing when she talked about the possible side effects of the medication. The pharmacist goes over the possible side effects and explains what she should do if they occur. The pharmacist observes that Mrs. Monroe looks confused. So, he stops and asks her if she understands. She says she does. Even though she replies that she understands, he provides a more thorough, detailed explanation. After this explanation, Mrs. Monroe's facial expressions reveal that she understands. The pharmacist makes sure that his body movements and facial expressions are congruent with his words. During the conversation, the pharmacist noticed that Mrs. Monroe tended to whisper the word cancer. Therefore, he also lowered his voice

whenever he used the word. The pharmacist used a soft, calm and even tone throughout the conversation as a means of comfort

- a. Identify the non-verbal cues shown by the patient and the pharmacist (10 marks)
 - b. Explain why these cues are important in communication (5 marks)
4. (a) Discuss in detail the "Pharmacists Patient Medication Counselling Process" (7marks)
(b) To provide effective patient education and information, a variety of practical skills must be mastered. What are these skills? (8marks)
5. A hypertensive patient, SAM, Male, 45 years, who was recently diagnosed with chronic kidney disease, obtains a prescription from a physician to the pharmacy department of ABUAD Multi-system Hospital (AMSH).
The detailed prescription is shown below
- Amlodipine 10mg b.d. X 4/52
 - Digoxin 125g o.d X 4/52
 - Lorazepam 12.5mg o.d X 3/7
- On seeing the prescription, the pharmacist became so angry and shouted "*What kind of stupid doctor wrote this?*" after which he told the patient that the physician gave a wrong prescription. The pharmacist gave the patient another set of instructions regarding how to take the medications totally different from what was prescribed by the physician and then did not carry out any further action.
- a. What do you think made the pharmacist react angrily to the prescription? (2 marks)
 - b. Did the pharmacist react in the right way? Give reasons for your answer (5 marks)
 - c. Give a detailed step-wise explanation of the best way the pharmacist could have reacted (8 marks)



**DEPARTMENT OF PHARMACEUTICS AND PHARMACEUTICAL TECHNOLOGY
COLLEGE OF PHARMACY
AFE BABALOLA UNIVERSITY, ADO EKITI**

400 LEVEL PHARM D. SECOND SEMESTER EXAMINATION 2022/2023 SESSION

COURSE: PCT 402 (Dosage Form Evaluation and Drug Stability)

DATE: Monday June 05, 2023 TIME: 9.00 am – 12.00 pm (3 hours)

Matric No.

There are three sections in this question paper, Section A (Multiple Choice Questions), Section B (Short answer questions), Section C (Essay Questions). You are to answer the questions as specified under each section.

SECTION B (Short Answer Questions)

Instructions:

- Answer all questions in Section B in the answer booklet provided
 - Answer each question on a fresh page of the answer booklet
 - Each question carries 5 marks.
-
1. Discuss briefly on diffusion controlled dissolution rate citing appropriate equations.
 2. Describe non-sink condition in dissolution test and list four non-sink methods.
 3. Enumerate the properties of an ideal Pharmaceutical packaging giving two examples for each properties.
 4. a) What is the difference between official and non-official tests in solid dosage form evaluation?
b) Mention five official tests and three unofficial test that are useful tablet evaluation
 5. Mention five (5) approaches that you know which can help prevent or inhibit oxidation reactions in pharmaceutical formulations

Polymer

Please turn over to Page 7 for Section C

SECTION C (Essay Questions)

Instructions:

- Answer ANY THREE (3) QUESTIONS in Section C in the answer booklet provided
- Answer each question on a fresh page of the answer booklet
- Each question carries 15 marks.

1. a) Discuss extensively the free convection non sink method of in vitro dissolution test.
b) Give the classification of in-vitro tests/in-vivo data correlation.

- c) State six (6) reasons why it is difficult to really ascertain in-vitro tests and in-vivo data correlation.

2. Enumerate the formulation factors affecting dissolution rates of dosage forms with emphasis on solids and liquid preparations.

3. Discuss extensively, metals and paper & cardboard as pharmaceutical packaging materials.

4. a) Accelerated stability studies are intended to increase the stability of pharmaceutical products. True or false. Justify your answer.

- b) In general, overages are added to all pharmaceutical formulations in order to maintain 100% labelled amount during the expected shelf-life. True or false. Comment freely.

- c) During accelerated stability testing, a medicine was analyzed to have 3.2 mg/ml of active drug, its stability constant k was found to be 0.05 mg/ml/h. How long will it take before the drug decomposes by 10%?

- d) Mention six (6) types of chemical changes that are obtainable in pharmaceutical formulations.

- e) In a zero order reaction defined by: at ambient temperature, k_0 was determined to be 0.380 mg/mg/day. If the initial concentration, $[D]_0$, was 200 mg/ml, how long will it take for the initial concentration to decrease by 50%?

Handwritten notes:
 Solubility
 Stability
 Compaction
 Solid state characteristics
 200 - 240
 2 - 1hr
 10% change
 Pharmacokinetic
 Semi-log
 Graphical
 Salicylic acid
 10% pellet
 0.380 - 24hr
 2 - 1hr
 0.016 hr

END OF PAPER. BEST WISHES.

Handwritten list:
 Oxidation
 Reduction
 Hydrolysis
 Hydration
 Hydrolysis
 Photolysis

$$\frac{10}{100} \times 3.2 = 3.2$$

$$= 3.2$$

$$t_{1/2} = \frac{1}{2} \frac{D_0}{k}$$

$$\frac{d[D]}{dt} = k_0 \quad D_0 = -kt$$

$$\int_0^t \frac{d[D]}{D} = \int_0^t k_0 dt$$

$$D_t = -kt$$

$$\ln(D_t) - \ln(D_0) = -kt$$

$$\log(D_t) = \log(D_0) - kt$$

$$\frac{D_t - D_0}{-k} = \frac{-kt}{+k}$$

$$t_{1/2} = \frac{1}{2} \left[\frac{D_0}{k} \right]$$

SECTION C (Essay Questions)

Instructions:

- Answer ANY THREE (3) QUESTIONS in Section C in the answer booklet provided
- Answer each question on a fresh page of the answer booklet
- Each question carries 15 marks.

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b) Give the classification of in-vitro tests/in-vivo data correlation.
c) State six (6) reasons why it is difficult to really ascertain in-vitro tests and in-vivo data correlation.
2. Enumerate the formulation factors affecting dissolution rates of dosage forms with emphasis on solids and liquid preparations.
3. Discuss extensively, metals and paper & cardboard as pharmaceutical packaging materials.
4. a) Accelerated stability studies are intended to increase the stability of pharmaceutical products. True or false. Justify your answer.
b) In general, overages are added to all pharmaceutical formulations in order to maintain 100% labelled amount during the expected shelf-life. True or false. Comment freely.
c) During accelerated stability testing, a medicine was analyzed to to have 3.2 mg/ml of active drug, its stability constant k was found to be 0.05 mg/ml/h. How long will it take before the drug decomposes by 10%?
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e) In a zero order reaction defined by: at ambient temperature, k_0 was determined to be 0.380 mg/mg/day. If the initial concentration, $[D]_0$, was 200 mg/ml, how long will it take for the initial concentration to decrease by 50%?

END OF PAPER. BEST WISHES.



**AFE
BABALOLA
UNIVERSITY
ADO-EKITI (ABUAD)**
5th & 6th BABALOLA WAYS, ADO-EKITI, EKITI STATE, NIGERIA
P.M.B. 5454, ADO-EKITI

**DEPARTMENT OF PHARMACOGNOSY
COLLEGE OF PHARMACY**

SECOND SEMESTER (PHARM.D) EXAMINATION 2022/2023 SESSION

COURSE: PCG 402

Level: 300

Date: 31ST May 2023

Time Allowed: 3 hours (2:00- 5:00PM)

INSTRUCTIONS:

1. Write your Matriculation number **BOLDLY** on your answer booklet
2. Answer at least **ONE (1)** in each section
3. Answer **TEN** questions in **TOTAL**

Section 1

1. Discuss Cyanogenetic glycosides in terms of the following:
a. Sources b. Chemical constituents c. Medicinal uses and toxicities **(10marks)**
2. Discuss Anthraquinones with reference to the following:
a. Sources b. Biosynthesis c. Identification tests **(10marks)**

Section 2

1. Diosgenin isolated from *Dioscorea floribunda* has been reported to be a useful therapeutic in the management of neuropathies such as Alzheimer's disease. With your knowledge of natural products, describe in detail the biosynthesis of Diosgenin starting from carbon dioxide and water. **NB: Show all relevant structures and enzymes. (10marks)**
2. a. Structurally describe the four-step stages involved in the biosynthesis of beta-amyrin from squalene
b. i. Use necessary structures, examples, and definitions to differentiate between steroid and triterpenoid saponins
ii. List the pharmacological properties associated with saponins
iii. Saponins are described as natural detergents, explain. **(10marks)**

Section 3

1. a. Illustrate the structures of the three base units (monomers) of tannins **(5marks)**
b. Outline five (5) uses of tannins. **(5marks)**
2. a. In no more than four lines (4), what do you understand by the term "Plant galls"? **(5 marks)**
b. Outline food items with tannins citing examples where necessary **(5 marks)**

Section 4

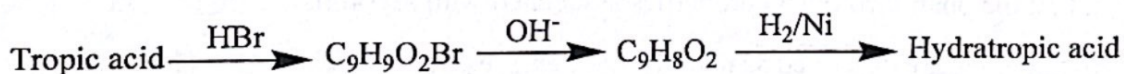
- a. Describe (with structures) the biosynthesis of a known anthraquinone glycoside while also stating its therapeutic uses, chemical test for identification, and biological and geographical sources (10marks)
- b. Describe (with structures) the biosynthesis of a known flavonoid glycoside while also stating its therapeutic uses, chemical test for identification, biological, and geographical sources (10marks)

Section 5

- a. Name and **structurally distinguish** the key classes of **cardiac glycosides** observed in nature. (10 marks)
- b. i. List four (4) chemical identification tests for cardiac glycosides. (4 marks)
- ii. Cardiac glycosides have contributed immensely to the development of drugs for cardiovascular diseases. Clearly write on a drug from this class using the following.
- Name of drug
 - Botanical source
 - Mechanism of action
 - Uses
 - Side effects
 - Drawback
- (6 marks)

Section 6

1a. Tropic acid, (a by-product of alkaloid, Atropine found in the deadly nightshade *Atropabelladonna*) $C_9H_{10}O_3$ gives a positive test with Jones's reagent (CrO_3/H_2SO_4) and is oxidized by hot acidified $KMnO_4$ to benzoic acid. It is converted to Hydratropic acid, $C_9H_{10}O_2$ by the following sequence of reaction:



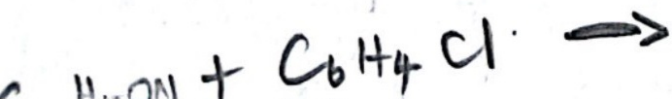
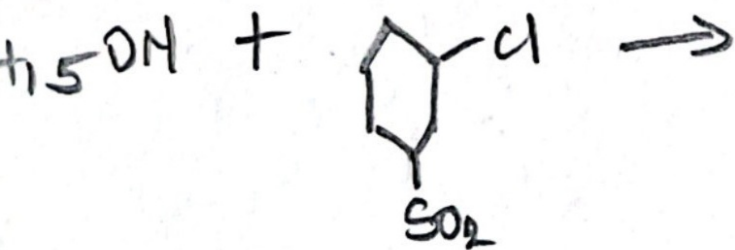
DEDUCE structure(s) consistent with Tropic acid and Hydratropic acid, stating **clearly** your line of reasoning. Compare the structure(s) of Tropic acid obtained above with the Tropic acid moiety of Atropine, and draw one conclusion each on their optical activity and type of isomerism.

b. When fresh Fruits of Thorn apple were comminuted, soaked in acidified water and allowed to ferment for 7 days, and the resulting solution was filtered and corked in a bottle. Subsequently, laboratory animals were fed with the dried concentrate of the solution, which produced a very noticeable reduction in the physical alertness of the animals after the administration of the first dose. State conclusively, one important chemical metabolite in thorn apple likely responsible for the pharmacological effect observed in the animals, justify your answer with appropriate structure(s). In the structure(s) drawn above, circle two functional groups influencing the dissolution of your metabolite in the acidified water. Hence what is the pharmacological effect experienced by the animals. (10marks)

2a. Hordinene, $C_{10}H_{15}ON$, is an alkaloid found in germinating barley. It is soluble in dilute HCl and dissolves in NaOH, it however reprecipitates from its alkaline solution when CO_2 is bubbled in. Hordinene reacts with benzene sulfonyl chloride to yield a product K, that is soluble in dilute acid. When Hordinene is treated with methyl sulfate in the presence of a base, a product, L is formed. When L is oxidized by alkaline $KMnO_4$, anisic acid ($p\text{-CH}_3\text{-C}_6\text{H}_4\text{-COOH}$) is obtained and when L is strongly heated, p-methoxy styrene is obtained. What structure(s) is/are consistent for Hordinene, indicate your line of reasoning. And deduce the structures of K and L.

b. State five (5) general properties of alkaloids.

(10marks)





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**DEPARTMENT OF PHARMACOLOGY & TOXICOLOGY
COLLEGE OF PHARMACY, AFE BABALOLA UNIVERSITY-ADO EKITI.
CARDIOVASCULAR /ENDOCRINE PHARMACOLOGY (PCO-402)
COURSE UNITS- 2 UNITS
2ND SEMESTER EXAMINATION 2022/2023 SESSION
PAPER TWO - ESSAY**

INSTRUCTIONS: Question ONE in Section "A" is COMPULSORY.

Time Allowed: 1 $\frac{1}{2}$ hours

Answer one question each in Sections "B", "C" and "D"

SECTION A: COMPULSORY

Question 1.

The fungus *Claviceps purpurea* which grows on rye grains is the source of ergot alkaloids, thus, eating foods contaminated with ergot chemicals can cause a toxic reaction due to vasoconstriction. Nowadays, when ergot alkaloid is chemically modified, it produces clinically actionable Oxytocic agents. Although, ergot alkaloid acts inversely to tocolytic agents, their actions differ from a physiological oxytocic agents

- Name any three clinically actionable alkaloids (3 marks)
- Name two (2) physiological oxytocic agent (2 mark)
- Name the mechanistic targets of the physiological oxytocic agents named in "b" above (5 marks)
- Using a tabular representation, draw five distinctions between ergot alkaloids and a named physiological oxytocic agent (5 marks).
- Name five (5) tocolytic agents and their mechanism of action (10 marks).

SECTION B: ANSWER ONLY ONE QUESTION

Question 2.

- a) State the mechanism of action of cardiac glycosides.
- b) Discuss three (3) cases where digoxin is contraindicated using relevant examples.
- c) List six (6) adverse effects of cardiac glycosides (both cardiac and extra cardiac adverse effects).

Question 3.

- a) Mention two therapeutic uses of cardiac glycosides.
- b) Explain three (3) drug interaction of digoxin with other drugs.
- c) List three (3) other drug classes that can be used in managing congestive heart failure listing one drug example from each class.

SECTION C: ANSWER ONLY ONE QUESTION

Question 4.

- a) Define hormones
- b) List six hormones of the anterior pituitary gland and their functions
- c) With the aid of a diagram, describe feedback control mechanisms in endocrine function
- d) Briefly explain Hypothalamic-Pituitary Axis

Question 5.

- a) Classify anti-hypertensive agents and give two examples of each class of drugs
- b) Briefly explain how the body regulates arterial blood pressure

SECTION D: ANSWER ONLY ONE QUESTION

Question 6.

- a) Define Emergency contraception
- b) Enumerate the conditions under which they can be used
- c) Briefly describe the methods of the emergency contraception
- d) List the emergency contraceptive pill regimens recommended by WHO

Question 7.

- a) Define angina pectoris
- b) Briefly describe the types of angina
- c) Give a description of the classification of anti-angina drugs citing an example in each class
- d) Enumerate the agents that improve the prognosis of angina

DEPARTMENT OF PHARMACEUTICAL AND MEDICINAL CHEMISTRY

COLLEGE OF PHARMACY,

AFE BABALOLA UNIVERSITY

2022/2023 Session, Second Semester Examination

PCH 402: Medicinal Chemistry I- Drug Design

30th MAY, 2023

Matric. Number:..

.....

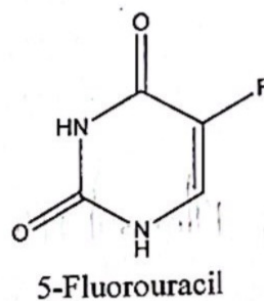
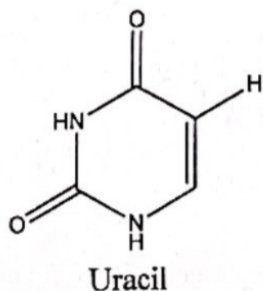
Time allowed: Three hours

Section A: All questions in the section are compulsory. Each question carries 20 marks.

1. Write a short note on each of the following:
 - (a) Molecular descriptors and briefly explaining three types.
 - (b) Virtual screening and how it relates to cheminformatics.
2. Read the following carefully and then provide answers to the questions:
 - (a) A batch of aspirin on the drug shelf in a Pharmacy was found to have vinegar-like taste. Provide a detailed explanation of the possible cause(s) of this untoward occurrence.
 - (b) Classify Non-Steroidal Anti-Inflammatory Agents (NSAIDs) giving suitable examples of drugs in each class.
3. With the aid of chemical equations explain each of the following:
 - (a) Conjugation reaction.
 - (b) Oxidation Reaction in Phase I.

Section B: Answer ANY TWO

4. Read the following carefully and then provide answers to the questions:
 - (a) Explain the term **bioisosteres** giving structural examples.
 - (b) Uracil analogue (5-Fluorouracil) is obtained by replacement of hydrogen with fluorine to give rise to the formation of an extremely therapeutically potent antineoplastic drug. How would the introduction of the fluoro group be expected to affect the properties of the resulting analogue?



5. Write short notes on each of the following terms:

(a) Structure-activity relationship.

(b) Phase I drug metabolism indicating the type of chemical conversion

(c) Differences between lead compound and drug molecule

(d) The drug development pipeline

6. Discuss:

(a) Using appropriate examples, four (4) different sources of lead compounds.

(b) Two (2) different approaches that can be used in performing general molecular modification during lead optimization.



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COLLEGE OF PHARMACY
Department of Clinical Pharmacy and Public Health

Second Semester Examination 2022/2023 Academic Session

Course: PCL 404: Clinical & Environmental Toxicology Exam date: Mon, 22/5/23 Time: 9 am - 12 noon

Instructions:

- Write your **Matriculation Number** on all pages of your answer sheet and **Question papers**
- Question papers and answer sheets must be safely kept with you and should not be allowed to be copied by any person sitting near you
- Answer any **FOUR (4)** questions in this section
- All questions should be answered in the Answer Booklet provided
- All questions carry equal marks
- Endeavour to sign out before leaving the examination hall

SECTION B (ESSAY QUESTIONS, 80 MARKS)

- Our environment is unfortunately putting us in danger. Discuss this in the context of poisons **(20 marks)** {NNW}
- M, a 7 year old child was rushed unconscious, to the Emergency Unit of a hospital. It was said that he ingested an unknown substance. As a clinical pharmacist, Discuss the management of this patient **(20 marks)** {NNW}
- Name the methods for classifying pesticides, giving at least two examples of each class **(12 marks)**
 - Mention and explain briefly four exposure routes of pesticide poisoning **(8 marks)** {SSA}
- Define poisoning **(5 marks)**
 - Mention three (3) types of toxins produced by some micro-organisms to pollute the air and describe briefly two of them **(10 marks)**
 - Describe briefly how to manage a patient of inhalation exposure to airborne poisoning **(5 marks)** {SSA}
- Explain the following as it applies to toxicity giving one example in each case
 - Pharmacodynamic drug-drug interactions can be indirect **(5 marks)**
 - Synergistic drug-drug interactions **(5 marks)**
 - Formation of complexes during absorption drug-drug interaction **(5 marks)**
 - Drug-drug interaction between an inhibitor and a substrate drug **(5 marks)** {ENO}

6. TY is a 64-year-old patient taking phenytoin; a drug used in the treatment of seizure disorders, and has not had a seizure in 2 months. Phenytoin has been documented to be 90% bound to plasma albumin and is eliminated by hepatic metabolism. Drug X was prescribed to the patient for an infection and Drug X is known to increase hepatic microsomal P450 metabolism. Four days after beginning Drug X, the patient starts having seizures and is brought to the ICU. You were the clinical pharmacist on duty and you were called to assess the patient's medications
- a) What do you think is wrong with the patient? (3 marks)
 - b) What signs are indicative of toxicity in this patient? (4 marks)
 - c) Explain the mechanism behind the cause of the patients' condition and hospitalization (8 marks)
 - d) What advice would you have provided to the physician before administration of Drug X to TY? (5 marks) {ENO}



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**DEPARTMENT OF SOCIAL AND ADMINISTRATIVE PHARMACY
COLLEGE OF PHARMACY
SECOND SEMESTER EXAMINATIONS 2022/2023 SESSION**

Course: SAP 402

Level: 400

Title: Pharmacy Communication and Presentation Skills

Time Allowed: 3HOURS

Date: Saturday, 27th May, 2023

INSTRUCTIONS:

1. Write your matriculation number on your question paper and answer booklet(s)
2. Answer **ALL** questions in Section B in the answer booklet provided
3. Answer **ANY FOUR** (4) questions in Section C
4. Ensure you write the order of questions answered on your answer booklet(s)

SECTION B (35 minutes)

SHORT ANSWER QUESTIONS (20marks)

1. List two types of explanation with practical example
2. Give two examples each of level 1 and level 2 explanation
3. Itemize the listening process in the correct order
4. Give two importance of empathetic listening and responding
5. Give two examples each of open-ended and close-ended questions
6. In one sentence each; briefly explain what leading question and probing question are.
7. Define Communication skill
8. List the components of the holistic concept of health
9. Draw a simple schematic diagram of the model of interpersonal communication
10. Itemize two methods for asking prompting questions



COLLEGE OF PHARMACY

SECOND SEMESTER 2022/2023 SESSION

Department of Clinical Pharmacy and Public Health

&

Department of Social and Administrative Pharmacy

Instructions

- 1. You have a total of 30 minutes for this test**
- 2. Each question should be answered in 15 minutes**

SAP 402

Mr AJ was recently diagnosed of HIV and was placed on ARV medications. He was however a known type 2 diabetes and hypertensive patient. He is married to Mrs BJ whose HIV status is not known because Mr AJ did not declare to her his status. He has kept his ARV medicines away from sight. The wife only knows of his oral hypoglycemic and anti-hypertensive medications. On this faithful day in clinic he was found to be non-adherent to his medications. His blood pressure and sugar level were not controlled. As the pharmacist, what do you envisage could be the likely causes of his non-adherence?

PAT 402

In severe hepatic impairment what should be done to the dose of the following drugs assuming they are metabolized solely by the liver?

- drugs whose metabolites are the active drug
- drug that the metabolites are inactive

As a general rule, at what dose should enzyme-dependent drugs be given to patients with hepatic failure?



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COLLEGE OF PHARMACY
Department of Clinical Pharmacy and Public Health

Second Semester Examination 2022/2023 Academic Session

Course: PCL 404: Clinical & Environmental Toxicology Exam date: Mon, 22/5/23 Time: 9 am - 12 noon

Instructions:

- Write your **Matriculation Number** on all pages of your answer sheet and **Question papers**
- Question papers and answer sheets must be safely kept with you and should not be allowed to be copied by any person sitting near you
- Answer any **FOUR (4)** questions in this section
- All questions should be answered in the Answer Booklet provided
- All questions carry equal marks
- Endeavour to sign out before leaving the examination hall

SECTION B (ESSAY QUESTIONS, 80 MARKS)

- Our environment is unfortunately putting us in danger. Discuss this in the context of poisons (20 marks)
{NNW}
- M, a 7 year old child was rushed unconscious, to the Emergency Unit of a hospital. It was said that he ingested an unknown substance. As a clinical pharmacist, Discuss the management of this patient (20 marks) {NNW}
- ☒ a) Name the methods for classifying pesticides, giving at least two examples of each class (12 marks)
b) Mention and explain briefly four exposure routes of pesticide poisoning (8 marks) {SSA}
- a) Define poisoning (5 marks)
b) Mention three (3) types of toxins produced by some micro-organisms to pollute the air and describe briefly two of them (10 marks)
c) Describe briefly how to manage a patient of inhalation exposure to airborne poisoning (5 marks) {SSA}
- ☒ Explain the following as it applies to toxicity giving one example in each case
a) Pharmacodynamic drug-drug interactions can be indirect (5 marks)
b) Synergistic drug-drug interactions (5 marks)
c) Formation of complexes during absorption drug-drug interaction (5 marks)
d) Drug-drug interaction between an inhibitor and a substrate drug (5 marks) {ENO}



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COLLEGE OF PHARMACY
Department of Clinical Pharmacy and Public Health

Second Semester Examination 2022/2023 Academic Session

Course: PAT 402: Pathophysiology I Exam date: Fri, 2/6/2023 Time: 9 am - 12 noon

Instructions:

- Write your **Matriculation Number** on all pages of your answer sheet and **Question papers**
- Question papers and answer sheets must be safely kept with you and should not be allowed to be copied by any person sitting near you
- Answer any **FOUR (4)** questions in this section
- All questions should be answered in the Answer Booklet provided
- All questions carry equal marks
- Endeavour to sign out before leaving the examination hall

SECTION B (ESSAY QUESTIONS, 80 MARKS) 2 HOURS 20 MINUTES

- You can only cure what you understand. Discuss this in the context of pathophysiology (20 marks) {NNW}
- Discuss the pathophysiology of Congestive Cardiac Failure. Include in your answer, some intervention plans (20 marks) {NNW}
- The hepatic clearance of a drug in a patient is reduced by 30% due to chronic viral hepatitis. What should be the new dose of the drug in the patient assuming the Drug XY is given as 500mg in patient with normal liver function? (Assume that renal drug clearance ($f_e = 0.4$) and plasma drug protein binding are not altered) (20 marks) {SJS}
- A 61-year-old woman complained about consistent discomfort and significant weight loss. She decided to visit the hospital as she had a tarry stool in the early morning which she had never experienced before. She presented with a 2-month history of burning pain in the epigastric abdomen and chest which radiated toward her back. Her pain worsened after taking aspirin and drinking coffee and was relieved after taking antacids. She had previously lost 10 pounds in 2 months due to decreased intake caused by the feeling of bloating, early fullness and stomach aches between meals. She also reported nausea and vomiting. She expressed concern especially because the food appeared undigested when she vomited. She also reported doubling her NSAID intake due to increased knee pain. She looked pale and exhausted when she entered the clinic.

Past medical history

- Gastritis with *Helicobacter pylori* infection, diagnosed 5 years ago. Resolved with pharmacotherapy, frequent recurrence.
- Heart attack 3 months ago, has started taking aspirin since then.

- Osteoarthritis, diagnosed 3 years ago. Long-term use of the non-steroidal anti-inflammatory drugs since diagnosis.
- Chronic obstructive pulmonary disease, diagnosed 11 years ago.
- Diabetes Mellitus and hypertension diagnosed 6 years ago.

Pertinent social history

- Has worked full-time as a TV program producer for 30 years.
 - Divorced with her husband 20 years prior, raised 2 children by herself.
 - Hobbies include drinking, eating spicy food, watching dramas and talk show.
 - Has smoked for 30 years, even after the diagnosis of COPD, still cannot quit smoking.
- a. Identify the predisposing factors of peptic ulcer disease from this case study (5 marks).
 - b. Outline the diagnostic tests for peptic ulcer disease (3 marks).
 - c. Outline the goal of therapy (4 marks)
 - d. List the possible complications of peptic ulcer disease (4 marks).
 - e. What advice will you give this patient about lifestyle changes? (4 marks){TO}

5. a. What is Therapeutic Drug Monitoring? (5 marks)
 - b. Describe steady state (5 marks)
 - c. Highlight the characteristics of drugs associated with Therapeutic Drug Monitoring. (10 marks)
- {EOA}

6. A.G. is a 35-year-old Nigerian man who presents with a 4-week history of a productive cough. The cough was initially non-productive but became productive of yellow sputum after 2 weeks. He expectorated bloody sputum after running and was hospitalised. His medical history was not unusual. Before the patient was hospitalized, he began to experience progressive fatigue. He also complained of subjective fevers, chills, night sweats, dyspnea on exertion, and an unintentional 7kg weight loss during the last 2 months. He works as a labourer on new home construction projects, and several of his co-workers, have similar respiratory symptoms

- a) What signs and symptoms consistent with active TB disease are present in A.G.? (6 marks)
- b) What risk factors for TB are present in H.G.? (4 marks)

A tuberculin purified protein derivative (PPD) skin test is ordered and placed on the volar aspect of his left arm. Significant laboratory data showed a markedly increased white blood cell count, but serum electrolytes, renal function, and hepatic function were within normal limits.

- c) What is tuberculin PPD skin testing? (2 marks)
- d) What result will show a positive TB infection? (2 marks)
- e) What other laboratory tests may be performed to aid in the diagnosis of TB in A.G.? (4 marks)
- f) What could be responsible for the marked increase in white blood cell count? (2 marks) {ENO}

SECTION C (2hours)

ESSAY (60 marks)

1. Assume you are the pharmacist on duty on a day that an elderly patient approaches your pharmacy with his prescription. The prescription contains a single medicine (drug). After filling the prescription, he needs detailed explanation regarding the drug you dispensed.
 - a. Reveal the named drug that you dispensed to the patient (2marks)
 - b. Practically give explanation to the following key questions the elderly patient has asked you concerning the named drug you dispensed.
 - i. What is the medicine for? (4marks)
 - ii. How do I take it? (4marks)
 - iii. Are there any side-effects? (5marks)

2. The patient is a 50-year old woman who has had type 2 diabetes for 1 year. She weighs 100 kg, and reports her self-monitored glucose to be about 200mg/dL. Her last laboratory report shows HbA1c to be 9%.

Patient: I know that my diabetes is a serious problem. I have read that diabetes can kill you or make you go blind. I certainly want to stick around to see my grandkids grow up.

Pharmacist: Your grandchildren are important to you and you want to be there for them.

Patient: Absolutely. It's just so hard to do everything – diet, exercise, take medications, test my blood.

Pharmacist: So, even though you want to make changes, you feel overwhelmed.

Patient: Exactly!

- a. Explain in detail what Empathic listening is. (4marks)
- b. Using your explanation, analyze how the pharmacist has made use of it. (6marks)
- c. Give a **brief** case study of how another pharmacist would have responded, without making use of empathic listening, and what the effect would have been on the patient. (5marks)

3. Read the given case and give answers to questions below.

Mrs. Monroe is obviously distressed. She has just learned that she has skin cancer. The pharmacist steps from behind the counter and motions Mrs. Monroe to a more private area. Mrs. Monroe indicates that the doctor was confusing when she talked about the possible side effects of the medication. The pharmacist goes over the possible side effects and explains what she should do if they occur. The pharmacist observes that Mrs. Monroe looks confused. So, he stops and asks her if she understands. She says she does. Even though she replies that she understands, he provides a more thorough, detailed explanation. After this explanation, Mrs. Monroe's facial expressions reveal that she understands. The pharmacist makes sure that his body movements and facial expressions are congruent with his words. During the conversation, the pharmacist noticed that Mrs. Monroe tended to whisper the word cancer. Therefore, he also lowered his voice

whenever he used the word. The pharmacist used a soft, calm and even tone throughout the conversation as a means of comfort

- a. Identify the non-verbal cues shown by the patient and the pharmacist (10 marks)
 - b. Explain why these cues are important in communication (5 marks)
4. (a) Discuss in detail the "Pharmacists Patient Medication Counselling Process" (7marks)
(b) To provide effective patient education and information, a variety of practical skills must be mastered. What are these skills? (8marks)
5. A hypertensive patient, SAM, Male, 45 years, who was recently diagnosed with chronic kidney disease, obtains a prescription from a physician to the pharmacy department of ABUAD Multi-system Hospital (AMSH).
The detailed prescription is shown below
- Amlodipine 10mg b.d. X 4/52
 - Digoxin 125g o.d X 4/52
 - Lorazepam 12.5mg o.d X 3/7
- On seeing the prescription, the pharmacist became so angry and shouted "*What kind of stupid doctor wrote this?*" after which he told the patient that the physician gave a wrong prescription. The pharmacist gave the patient another set of instructions regarding how to take the medications totally different from what was prescribed by the physician and then did not carry out any further action.
- a. What do you think made the pharmacist react angrily to the prescription? (2 marks)
 - b. Did the pharmacist react in the right way? Give reasons for your answer (5 marks)
 - c. Give a detailed step-wise explanation of the best way the pharmacist could have reacted (8 marks)



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**DEPARTMENT OF SOCIAL AND ADMINISTRATIVE PHARMACY
COLLEGE OF PHARMACY
SECOND SEMESTER EXAMINATIONS 2022/2023 SESSION**

Course: SAP 404

Title: Biostatistics and Research Methodology

Date: Friday, 9th June, 2023

Level: 400

Time Allowed: 3HOURS

INSTRUCTIONS:

1. Write your matriculation number on your question paper and answer booklet(s)
2. Answer **ALL** questions in Section B and Section C
3. Answer **Section B** and questions **1 and 2 of Section C** in the **first answer booklet** provided.
4. Answer questions **3 and 4 of Section C** in the **second answer booklet** provided.

SECTION B (35 minutes)

SHORT ANSWER QUESTIONS (20marks)

1. List four factors influencing the choice of a research topic
2. Itemize four strategies for choosing a research topic
3. In not more than two sentences, explain the law of parsimony in research study
4. List four avenues through which research problem can be found
5. In one sentence each, explain the forms in which research problem can be expressed
6. Itemize three basic approaches to literature review
7. List four pitfalls to avoid during questionnaire construction
8. In a tabular form, explain the characteristics of the various types of measuring scales being used in research study
9. In one sentence each, briefly explain validity and reliability of research instruments
10. Briefly explain (in one sentence each) four characteristics of a research

SECTION C (2 hours)

ESSAY (60 marks)

1. You are preparing for your final year project and have decided to carry out a research study using human research participants. You have identified problems to be solved, chosen a topic of interest, conducted literature review and constructed the research instrument to be employed. However, you have been notified by your Supervisor that your nature of research study requires obtaining ethical approval from a Health Research Ethics Committee before you can collect data from the research participants. You have been asked to submit your research proposals to a Health Research Ethics Committee for ethical approval and include a section on the ethical considerations you would ensure
 - a. Explain the basic ethical principles you will consider. (4marks)
 - b. Give detail explanation of how you would apply the ethical principles in the research study. (7marks)
 - c. In your own view, briefly state the relevance(s) of obtaining ethical approval from a Health Research Ethics Committee (4marks)
2. Assume you have defended your undergraduate project (research) work excellently. Your Supervisor just had a new set of students who are to embark on their research studies. Having been proud of your exploit, your Supervisor called you so that you can introduce what research is all about to the new students. He has given you an outline of what you are to cover as listed below:
 - a. Definition of research (3marks)
 - b. Purposes of research (3marks)
 - c. Requirements for quality research (3marks)
 - d. Qualities of a good researcher (3marks)
 - e. The research process (3marks)
3. a) With appropriate examples, differentiate between the following
 - i. Null hypothesis and Alternative hypothesis (2 marks)
 - ii. Sample and Population (2 marks)
 - iii. P-value and Significance level (2 marks)
 - iv. Type I and Type II error (2 marks)
 - v. Parametric and Non-parametric tests (2 marks)b) The aim of a study was to investigate whether there was any association between eating habits and development of heart disease. A random sample of 600 children with

supposedly bad eating habits was observed for a period of 5 years. During this time 34 developed heart disease. Another random sample of 600 children with supposed good eating habits were observed during the same period and the number who developed heart disease was 14

- i. State the null and alternative hypothesis for the study (2 marks)
- ii. What test would you suggest for the researcher? (1 mark)
- iii. What will you conclude if your test gives a p-value of 0.003? (2 marks)

4. a) Describe the four levels of data measurement using practical examples (4 marks)
- b) Differentiate between descriptive statistics and inferential statistics (2 marks)
- c) In a clinical trial, a researcher wants to confirm if a new antihypertensive agent will improve the blood pressure of terminally ill patients. The researcher measured the systolic blood pressure of the patients prior to initiation of the drug and one month after continuous use. The results are presented in the table below

Before initiation	140	150	155	170	148	130	149	158	155	144
At one month of use	139	120	140	120	132	129	120	140	130	122

- i. State the Null and Alternative hypothesis for this research (2 marks)
- ii. Identify the appropriate test for the research (2 marks)
- iii. What conclusion would the researcher draw if the p-value is 0.050?(2 marks)
- iv. If the researcher committed a **Type I error**, what potential implication would that have on the patients? (3 marks)



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**DEPARTMENT OF SOCIAL AND ADMINISTRATIVE PHARMACY
COLLEGE OF PHARMACY
SECOND SEMESTER EXAMINATIONS 2022/2023 SESSION**

Course: SAP 402

Level: 400

Title: Pharmacy Communication and Presentation Skills

Time Allowed: 3HOURS

Date: Saturday, 27th May, 2023

INSTRUCTIONS:

1. Write your matriculation number on your question paper and answer booklet(s)
2. Answer **ALL** questions in Section B in the answer booklet provided
3. Answer **ANY FOUR** (4) questions in Section C
4. Ensure you write the order of questions answered on your answer booklet(s)

SECTION B (35 minutes)

SHORT ANSWER QUESTIONS (20marks)

1. List two types of explanation with practical example
2. Give two examples each of level 1 and level 2 explanation
3. Itemize the listening process in the correct order
4. Give two importance of empathetic listening and responding
5. Give two examples each of open-ended and close-ended questions
6. In one sentence each; briefly explain what leading question and probing question are.
7. Define Communication skill
8. List the components of the holistic concept of health
9. Draw a simple schematic diagram of the model of interpersonal communication
10. Itemize two methods for asking prompting questions



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COLLEGE OF PHARMACY

Department of Clinical Pharmacy and Public Health

Second Semester Examination 2022/2023 Academic Session

Course: PCL 402: Pharmaceutical Immunology & Vaccines Exam date: Fri, 7/6/2023 Time: 9 am - 12 noon

Instructions:

- Write your **Matriculation Number** on all pages of your answer sheet and **Question papers**
- Question papers and answer sheets must be safely kept with you and should not be allowed to be copied by any person sitting near you
- Answer any **FOUR (4)** questions in this section
- All questions should be answered in the Answer Booklet provided
- All questions carry equal marks
- Endeavour to sign out before leaving the examination hall

SECTION B (ESSAY QUESTIONS, 80 MARKS) 2 HOURS 20 MINUTES

- What is Immune sera? (5 marks)
 - Describe the process of preparation of Immune serum (15 marks) {EOA}
- Give a diagrammatic representation of the classification of Diagnostic agents (10 marks)
 - Mention 5 agents used to test organ function (5 marks)
 - What are diagnostic agents? Give examples (5 marks) {EOA}
- What is the difference between Vaccination and Immunization? (5 marks)
 - In the wake of the rampaging Coronavirus pandemic, Nigeria commenced COVID-19 vaccination on March 5, 2021 after receiving a sizeable dose of Oxford – AstraZeneca Vaccine. Describe the class of vaccine to which Oxford – AstraZeneca Vaccine belongs stating the benefits and risks, storage and method of preparation (15 marks) {MTO}
- Discuss the various stages/phases in vaccine development (10 marks)
 - Describe the roles of pharmacist in immunization (10 marks) {MTO}
- A 40 year-old male patient presents with severe dental pain and fever. On examination, his cervical lymph nodes are enlarged. He is prescribed amoxicillin with clavulanic acid. On a follow-up visit, his blood tests showed haemolytic anaemia and neutropenia. You are the clinical pharmacist in charge of the patient's case
 - What kind of reaction is the patient experiencing? (2 marks)
 - Describe the mechanism behind the reaction responsible for the patient's condition (10 marks)
 - Mention other mechanisms through which this type of reaction can occur (3 marks)
 - Highlight five applications of antigen-antibody reactions (5 marks) {ENO}

6. A 12-year-old male presents to the emergency department with a chief complaint of wheezing, flushing, and a full-body rash after consuming a local salad. The patient has a history of peanut allergy and was not aware that the salad had peanut in it.
- What is the patient currently experiencing? (2 marks)
 - Mention all the immunological cells associated with this type of reaction (5 marks)
 - Succinctly describe the mechanism behind this type of reaction highlighting how it causes the patient symptoms of wheezing, flushing and full-body rash (10 marks)
 - Based on the stated mechanism and your professional opinion, what pharmacological intervention would be best to remedy the patients' symptoms (3 marks) {ENO}



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DEPARTMENT OF PHARMACOLOGY AND TOXICOLOGY

COLLEGE OF PHARMACY

AFE BABALOLA UNIVERSITY, ADO-EKITI

PCO 402 PRACTICAL EXAMINATION 2022/2023 SESSION (ALTERNATIVE TO PRACTICAL)

Course units – 2 units

Time Allowed: 1^{1/2} Hours

Instructions: Attempt all questions

Write your matriculation number in the space provided in your answer booklet

1. Use the table below to answer questions 1a-d

Observation Table of the Effects of Lignocaine 0.02M on Rabbit eye Cornea Reflex

Time (Min)	Test Eye (Treated with Lignocaine 0.02M)	Control Eye (Treated with Buffer solution)
1	+ve	+ve
2	+ve	+ve
3	+ve	+ve
4	-ve	+ve
5	-ve	+ve
6	-ve	+ve
7	-ve	+ve
8	-ve	+ve
9	-ve	+ve
10	-ve	+ve
11	+ve	+ve
12	+ve	+ve
13	+ve	+ve
14	+ve	+ve
15	+ve	+ve

- 1a. What does +ve response indicate?
1b. What does -ve response indicate?

- 1c. What inference(s) can you draw from this experiment?
1d. What is the importance/use of this experiment?

2. In carrying out research in the laboratory, which type of study is done within an entire living animal, for instance, by injecting the test substance by intraperitoneal route into the animal?
3. ----- is the name given to the type of study/research carried out outside a living animal.
4. What is the name of a simple equipment (a cage) that can be used in place of Actophotometer to study locomotor activity (CNS activity) of rodents in the laboratory?
5. a. Mention the type of experiment we make use of Electroconvulsimeter to perform in the laboratory.
b. Where are the electrodes of electroconvulsimeter attached on the test animal?
6. In the test aimed at demonstrating the local anaesthetic action of xylocaine 0.02M, what type of buffer must be used for the test drug and the control?
7. a. Mention one experimental animal being used for testing drugs for local anaesthetic effect and the part of the animal being employed.
b. In the experiment referred to above in question 7a, what type of response is being observed and recorded?
8. A compound, code named **ABX**, was synthesized in the Pharmaceutical Chemistry laboratory, College of Pharmacy, ABUAD, which belonged to the class of oral hypoglycemic agents. You were given a project work to carry out a pharmacological experiment to confirm its hypoglycemic property.
i. Describe the appropriate experiment to perform in terms of
a. Materials (including animals) to be used,
b. drug administration,
c. brief theoretical background,
d. method/procedure and
e. the precautions to be taken.
ii. List 7 classes of oral hypoglycemic agents and briefly explain the mechanism of action of two (2) of them.
9. a. Name two chemicals being used to induce diabetes in experimental animals, especially rodents, in the laboratory.
b. What type of buffer should be used and at what pH should the test and control solutions be prepared for this experiment?
10. Why should the EDTA blood bottle be used to collect blood from the experimental rats in this experiment?