MLT 2nd
Course Title: General Pharmacology I

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Note:
Attempt all questions
Each question carry equal marks
Pay attention to every point of question
Give to the point answers
Extra detail may leads to marks deduction

Q1.

(a) What does drug interactions mean and enumerate its various types.

And: Drug interaction means:

Drug interactions occurred when two or more drugs react with each other. This Drug interactions may causes you to experience an unexpected side effects.

- It is defined as the pharmacological activity of one drug is a altered by the concomitant of another drug or the presence of the some other substances.

Types of drug interactions in the following.

Drug__ Dru g:

A drug drug can delay decease our enhance absobtion of either drug

Example fluxotine and phenelzine

Drug food interaction:

Food effect the rate extent of absorption of drug from GIT.

Drug lebotrey interaction:

The drug action within chemical lebotrey in effect the increase and decrease the effect of drug

Drug food interation:

The food effect the drug within GIT

Example milke or calcium deacres the effect of tetracycline

Drug disease interation:

Some drug decease effect by some disease

Drug chemical interaction:

Some drug increase or decrease effect with chemical reaction

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(b) Write down a detail note on pharmacodynamic drug interaction.

Ans: pharmacodynamics drug interactions :

Drug alters the pharmacodynamics profile (potency and effects) of an another drug and change its pharmacological effects.

Drug – drug interactions means effect one drug a altered by another drug.

- **Combined effect of drug:**

When two or more drug are given simulatanouly or quick succesion they may be either indifferent to each other exhibit synergism or an antigonism.

1. **Synergistication**

   When the action of one drug is facilted or increased by the other they are said to be synergistic.

   - **Additive effects:**

   The effects of the two drug is the some direction and simply addsapp.

   - Effect drug A +drug B =Effect of drug + effect of drug B.
   - Aclophence + prectamal =better analgesic and antipgretic effect

   B. Supra- additive effect:

   The effect of combination is greater than the individual effects of compound .

   Effect of drug A and B, affect of drug A + effect of drug B.

   - This is always the case when compound given along produce no effect but enhance the effect of other.

Example L- Dopa+ carbidope_ inhibits the peripheral breakdown L_ Dopa potantiat antiparkisonia effect L_ Dopa.

2.Antagonism : when one drug decred or abolished the action of another thy are said to be anagonistic.

A. Physical Antagaism : Baside one physical properties.

Example. Charcole.

B.Chemical Antagonism: Reduce the action by chemical reaction.

Example. Antacids neutralize the acid

C.physiological:

Two drugs act on different receptor , but have opposite effection on the same physiological function.

3.Recpto Antagonism:

Two drug act on same receptor in this case Antagonism block the action against.

Q2.

(a) Differentiate between hypoglycemic and hyperglycemic agents with examples.

Ans: Hypoglycemic :

Hypoglycemic refers to an abnormally reduced level of sugar, or glucose, in the bloodstream.

Hypoglycemic of agent: The common hypoglycemia agent are the following below.

- Hypoglycemic can also be caused intentionally by the inappropriate utilization of sulfonylureas medicine.
- Some medicine that are meant treat health issue other than diabetes can results in hypoglycemic or even hide it's symptoms.
- Hypoglycemic results when other disease and healthy issue affect the body glucose metabolism .
- Alcohol leads to a drops – in blood glucose levels causing hypoglycemic.
- **Example of hypoglycemic:**
    - Sweating
    - Feeling weak.
    - Nausea.(Feeling sick) .

Hyperglycemic:

Hyperglycemic refer to an abnormally increased blood glucose levels. Hyperglycemic is a hallmark indication of diabetes condition (both type 1 diabetes and type 2 diabetes) and prediabetes.

Agent of hyperglycemic: the hyperglycemic agent are some common the following below.

- Somethime hyperglycemic is the not results of diabetes condition. Other condition that can results in hyperglycemic include.
- Pancreatitis (swelling on pancreas) .
- Being inactive.
- Hyperthyroidism .
- Suffering from any injury or having any surgery.
- Emotional stress
- Having illness.
- **Example of hyperglycemic.**
    - Blurred vision.
    - Drowsiness.

- Freguent need to past urain.
- Extreme Thurs.

(B) What is emesis and antiemetic drugs, give examples

Ans: Emesis:

A protective reflex that serves to rid the stomach and intestine of toxic substances and prevent their further ingestion.

Examples: xylazine, buspirone, acepromazine , yohimbine.

Antiemetic:

Antiemetic drug or anti vomiting drug are those which is responsible for the prevention of the vomiting.

Examples: anzeme, emend , Dexpak , zofran Aloxi .

©What kind of drugs are used for cough and sputum, give examples

Ans: Cough : it's a protective reflex for expulsion of respiratory secretion and foregen particle from air passage.

Different types of cough drug in the following.

- Codeine

Example .Centre act lung

- Noscapine
  Example_Analgastic
- Pipazethate
  Example. CNS depression
- Benzonanate
  Example. Use for anaesthetic tetracine.

Q3.

(a) Enumerate different targets for antibiotics

Ans: Antibiotics:

Substances derived from a microoganism or produce synthetically , that destroy or limis the growth of a living organisms.

Inhibitions of cell wall synthesis

Target block peptidoglycn (murein) synthesis

Peptidoglycan:

- Polysaccharide + cross _ linked pantapeptide.
- Pantapeptide with terminal D alanyl_ D alanine unit ___ require d for cross linking.

A_B_ lactam antibiotics

Penicillin binding protein:

Enzymes responsible for:

- Across _ linking
- Elongation
- Autolysis

Lysis of bacteria cell:

- **Isotonic environment__** cell swelling__ rupture of bacteria cell.
- Hypertonic environment__ microbes change to protoplast (gram) pastiveor (gram_)

Covered by member.

- Intact ring structure essential for antibiotics activity.

(b) Explain viral replication process in detail

Ans: viral replication :

- **Adsorption:**

Initially, the virus attached or absrbs to he surface of the host cell. Most viruses are attached to the host cell because of the interactions between protein on the outer surface of the virus. Of receptor like protein on the host cell member.

Penetration and uncoating:

The virus enter the host cell either by passing directly through the cell member or by fusing with the host cell membrane and releasing the viral genetic material binto the host cell.

Biosynthesis:

When viral genetic material is released within the hose cell the virus takes control o the cell molecular synthesize ing machinery to initiate the biosynthesis of new viral enzymes and protein.

Maturation and release :

The components parts of the virus are assembled into mature virses released from the host cell.

Q4.

(a) Classify antihypertensive drugs with example

Ans:

Drug class	**Common suffix**	**Common Examples**
ACE inhibitor	**_pril**	**Lisinopril , benazepril, fosinopril, enalapril**
Thiazide diuretic	**None**	**Hydrochlorothiazide, chlorothiazide, chlorothlidone.**
Loop diuretic	**None**	**Furosemide, bumetanide, torsemide.**
Dihydrocodeine calcium channel blockers.	**_dipine**	**Amlodipine, felodipine.**
Non- hydropyridine calcium channel blockers	**None**	**Diltiazem, verapamil**
ARBs	**Sartan**	**Losertan, valaartan.**
Beta blockers	**Olol**	**Metoprolol, esmolol.**
Alpha blockers	**Osin**	**Terazonsin prazonsin.**

(b) What are the causes and drug therapy of various kinds of angina pectoris

Ans:

Drug therapy:

Pharmacotherapy is therapy using pharmaceutical drug as distinguish from therapy using surgery, radiation, moment or other mode.

Causes of drug therapy of the fellow.

- Wrong dose.
- Dose Inc/Dec too fast.
- Allergic rxn.
- Incorrect storage.
- Duration.

Angina:

Angina is the myocardial ischemia caused by an imbalance between myocardial blood supply and oxygen demond.

Types of Angina:

- Angina is classified broadly as stable or in stable depending on its pattern of occurance and severity.

- **Stable angina: occurs when increased physical activity e.g hurrying across a street or climbing a long stairs.)** Which create a greater demond for oxygen -rich blood to reach heart tissue.
- **Unstable angina:** occured in with lesser degrees of exertion or while at rest .unstable angina that occur at rest is the most serious form.this usually is caused by the formation of blood clot at the site of a ruptured plaque in coronary artery.

Q5.

(a) Differentiate between general and local anesthetics, explain various stages of general anesthesia

Anaesthesia:

Is a reversible condition of comfort and quiescence for a patient within the physiology limit before during and after performance of a procedure .

Differntiate between general and local anaesthesia are the following below.

General anesthesia	**Local anaesthesia**	
Not preferred	**Preferred**	
Preferred	**Cannot be preferred**	
Possible	**Not possible**	
Risky	**Safer**	
CNS	**Peripheral nervous**	
Whole body	**Restricted area**	
Lost	**Unaltered**	
Essential	**Usually not needed**	

Stage of anesthesia:

Stage1: analgesia:

In stage1 the patient has decreased awareness of pain somethime with amnesia . Conscious maybe umpires but he not lose.

Stage2 Disinhibition:

In stage2 , the patient appear to be delirious and excited amnesia occurred, reflex are enhance, and respiratory is typically irregular, retching at inconvenience may occur.

Stages3 surgical anesthesia :

In stages3 . The patient is unconscious and has no pain , reflexes, respirations is very regular , and blood pressure is maintained.

Stage4: Medullary Depression:

In stage4 . The patient develops severe respiratory and cardiovascular depression that require machanical and pharmacological support.

(b) Write down the mechanism of action of narcotic and non-narcotic analgesics

Ans: Analgesic:

An Analgesic , or painkiller is a any member of the growth of drug used to achieve Analgesic__ relief from pain.

Narcotics Analgesia:

Narcotics Analgesics are drug that relive pain by binding to opioid receptor which are present in the center and peripheral nervous system , can cause numbness and induced a state of unconscious.

Mechanism of action:

All opioid receptor and inhibit adenylate cyclase.

There are also involve in:

- Postsynaptic hyperpolarization.(increasing K+efflux).
- Reducing presynaptic Can ++influx.
  This inhibits neuronal activity.

Non narcotics Analgesics:

- **NSAIDs**
- **Acetaminophen**
- **Ziconotide**
- **Flupirtine**

Mechanism of action:

Paracetamol has no significant action on COX 1 and COX2 which left it's mode of action a mystery but did explain it's lack of anti_ information action gastrointestinal side effect typical of Braids.

Now research shows presence of new previously unknown cyclooxygenase enzymes COX3 found in brain and spinal card whe h selectively inhibits by paracetamol, and distint from two already known cyclooxygenase enzymes COX_1 and COX_2.