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 Paper pharmcology

**Q1**:

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

**Ans: Drug Interaction:**  Drug interactions involve the combination of drugs and other substances that change the effects of drugs on the human body. This may result in lower or higher efficacy of the drug or unexpected side effects. If you use multiple medicines, have a certain health condition or visit more than one doctor, you should pay special attention to the medicine. supplement

There are several different types of drug interactions that need attention. Let's explore each further. Drug response refers to the interaction between two or more prescription drugs. An example iz the interaction between the anticoagulant Coumadin (thinner) and the antifungal fluconazole (Diflucan). Combining these two drugs may increase the potential risk of bleeding.

Over-the-counter treatment: This is the reaction between medication and over-the-counter treatment. These include over-the-counter (OTC) medicines, herbs, vitamins or supplements.

Examples of such interactions may occur between diuretics and ibuprofen (Advil), which is a drug that attempts to remove excess water and salt from the body. Ibuprofen may reduce the effectiveness of diuretics, because ibuprofen usually causes the body to retain salt and water.

 Drug disease**:** This interaction refers to the use of drugs to change or worsen the condition or disease. In addition, certain medical conditions may increase the risk of side effects from certain drugs.For example, some congestion medicines people take because of a cold can increase blood pressure. For people with high blood pressure (hypertension), this is a potentially dangerous interaction.

Drug Lab: Some drugs can interfere with specific laboratory tests. This may result in inaccurate test results

**Q1: (b): Write down a detail note on pharmacodynamics drug interaction?**

**A**ns: Pharmacodynamics interaction**:** The term "pharmacodynamics interaction" refers to an interaction in which drugs directly interact with each other. Generally, sedatives can enhance each other. The same is true for alcohol, which can enhance the sedative effect of many drugs.

Phase of Pharmacodynamics**:** The pharmacodynamics stage of drug treatment considers whether the drug has a pharmacological effect. It is important to note that 75% of adverse drug reactions are dose related. Drug Action Types of pharmacological effects. Adapt to drugs.

Properties of pharmacodynamics**:** Pharmacodynamics (sometimes described as the effect of drugs on the human body) is the study of the biochemical, physiological, and molecular effects of drugs on the human body, involving receptor binding (including receptor sensitivity), post-receptor effects, and chemical interactions.

Examples of pharmacodynamics: interactions are the simultaneous administration of NSAID and phenpropiolone (additive interaction), or aspirin and ibuprofen (antagonistic interaction).

**Q2(a): Differentiate between hypoglycemic and hyperglycemic agents with examples?**

Ans: Hypoglycemic agent**;** The drugs used in diabetes treat diabetes by changing the level of glucose in the blood. With the exception of insulin, exenatide, liraglutide, and pramlintide, all drugs are taken orally, so they are also called oral hypoglycemic agents or oral hypoglycemic agents.

Action of hypoglycemic**:**  Oral hypoglycemic drugs can reduce glucose levels in the blood. They are often used to treat diabetes.

Hypoglycemic effect**:** Hypoglycemia, also known as hypoglycemia, refers to blood sugar falling below normal levels. This can lead to various symptoms including clumsiness, difficulty speaking, confusion, loss of consciousness, seizures or death.

Hyperglycemic agents**:** A drug which increases the blood glucose level. Stars. This entity has been manually annotated by the ChEBI Team. Members Of hyperglycaemicaagent**.**

**Example:** Metformin is an oral hyperglycaemic agent in the biguanide class. Metformin acts by increasing peripheral glucose uptake by increasing the capacity of insulin to bind to its receptors and increasing the synthesis of glucose transporter.

**Q2(b): What is emesis and antiemetic drugs, give example?**

**Ans: Emesis Drugs:** Any substance that causes nausea and vomiting. The use of emetics is limited to poisoning caused by swallowing certain toxins. Although its use is discouraged now, the most commonly used drug for this purpose is syrups.

**Emetic drugs** are usually administered in emergency situations after ingestion of a toxin (see**Emetic Drugs**). They generally remove <80% of the stomach contents. The most reliable **emetic drugs** act centrally to stimulate the vomiting center, either directly or via the CRTZ

**Antiemetic Drugs:** Antiemetic drugs are effective drugs for vomiting and nausea. Antiemetics are commonly used to treat side effects of motion sickness and opioid analgesics, general anesthetics, and chemotherapy against cancer.

**Q2(c): What kind of drugs are used for cough and sputum, give examples?**

**Ans: Drugs Used for cough:** Have a cold, do you need something to cough? Some over-the-counter medicines may relieve you. Three types of medicines can relieve cough caused by colds or bronchitis: inhibitors applied to the skin, expectorants and ointments are called topical medications. Example: codeine, pholcodine, dextromethorphan, noscapine, and butamirate. Antihistamines, for allergic rhinitis may produce mild sedation and reduce other associated symptoms, like a runny nose and watery eyes.

**Drug used for sputum:** Guaifenesin belongs to a class of drugs called expectorants. It works by unclogging and unclogging airway mucus, removing traffic jams and making breathing easier. Dextromethorphan belongs to a class of drugs and is called a cough medicine. It acts on a part of the brain (cough center) to reduce the urge to cough. Example, Commonly used aerosol expectorants include hyperosmolar 7% saline and mannitol.

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**Q3(a): Enumerate different target for antibiotics?**

**Ans: Target for antibiotics:** There are three main antibiotic targets in bacteria: the cell wall or cell membrane surrounding the bacterial cell. A machine that produces nucleic acid DNA and RNA. Mechanism of protein production (ribosomes and related proteins).

**Q3(b): Explain viral replication process in detail?**

**Ans: Viral Replication:** Viral replication is a term that refers to the formation of biological viruses in target host cells during infection. The virus must penetrate and enter the cell before it can replicate. From the perspective of the virus, the purpose of virus replication is to allow it to replicate and survive. By generating a large number of copies of the genome and packaging these copies into a virus, the virus can continue to infect new hosts. The replication between viruses is diverse and depends on the type of genes involved. Most DNA viruses accumulate in the nucleus. Most RNA viruses only develop in the cytoplasm. Virus populations do not grow through cell division because they are cell-free. Instead, they hijack the host cell's mechanism and metabolism to produce multiple copies of itself and assemble inside the cell. The life cycle of viruses varies greatly between species, but there are six common basic stages: Attachment is the specific binding between the viral capsid protein and a specific receptor on the surface of the host cell. This specificity determines the host range of the virus. For example, HIV can only infect a limited range of human white blood cells. Its surface protein gp120 only interacts with the CD4 molecule (a chemokine receptor), which is most commonly found on the surface of CD4 + T cells. This mechanism has evolved to favour viruses that only infect cells that can replicate.

**Q4(a): Classify antihypertensive drugs with example:**

**Ans: antihypertensive drugs:** Antihypertensive drugs are a class of drugs used to treat high blood pressure (hypertension). Antihypertensive therapy aims to prevent hypertension complications, such as stroke and myocardial infarction.

 **Example**: amlodipine (Norvasc, Lotrel)

diltiazem (Cardizem CD, Cardizem SR, Dilacor XR, Tiazac)

felodipine (Plendil)

isradipine (DynaCirc, DynaCirc CR)

nicardipine (Cardene SR)

nifedipine (Adalat CC, Procardia XL)

nisoldipine (Sular) verapamil (Calan SR, Covera HS, Isoptin SR, Verelan.

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**Q4(b): What are the cause and drugs therapy of various kinds of angina pectoris?**

**Ans: Cuases of angina pectoris:** Angina l occurs when the blood flow through the coronary arteries to the heart muscle is insufficient to meet the heart's oxygen needs, such as during physical exercise. Coronary heart disease is the most common cause of decreased blood flow to the heart in patients with angina.

**Drugs of Angina pectoris:** Aspirin. Aspirin and other anti-platelet **medications** reduce the ability your blood to clot, making it easier for blood to flow through narrowed heart arteries.

Nitrates. Beta blockers. Statins. Calcium channel blockers.Ranolazine (Ranexa).

**Q5(a) Differentiate Between general and local anesthetics, explain various stages of general anesthesia?**

Ans: General Anesthetics**:** The clinical definition has also been extended to include coma that causes coma, which causes insufficient awareness of pain stimuli, enough to facilitate surgical applications in clinical and veterinary practice. General anesthetics cannot be used as analgesics and should not be confused with sedatives. General anesthetics are a group of structurally different compounds whose mechanism of action includes multiple biological targets related to the control of neuronal pathways. The exact way of working is the subject of some debates and ongoing research. General anesthesia can cause a state of general anesthesia. There is still controversy on how to define this status. However, general anesthetics usually cause several key reversible effects: immobility, analgesia, forgetfulness, confusion, and reduced spontaneous response to harmful stimuli.

**Local Anesthetics: Local anesthetics (LAs) are drugs that prevent pain in** the area of ​​administration. Los Angeles works by reversibly blocking the sodium channels of nerve fibers, thereby inhibiting the conduction of nerve impulses.

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**Q5(b): Write down the mechanism of action of narcotic and non- narcotic analgesics?**

**Ans**: Narcotic Analgesics**:** Opioid drugs represented by morphine produce their pharmacological effects, including analgesic effects, by acting on receptors on neuronal cell membranes. The presynaptic effect of opioids inhibiting the release of neurotransmitters is considered to be their main role in the nervous system.

Non- Narcotic Analgesics: In the past two decades, there is increasing evidence that the effects of non-opioids exceed the inhibitory effects of COX and prostaglandin synthesis, which may also explain their therapeutic and adverse effects. These include their interaction with endocannabinoids, nitric oxide, monoaminergic and cholinergic systems..