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***Paper. Pharmacology***

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***Question no 1.***

1. ***What does drug interaction mean, enumerate it’s various types.***

***Answer. A drug is a situation in which a substance affect the activity of a drug when both are administered together. This action can be synergistic ( when the drug effect is increased) or antagonistic ( when the drug effect is decreased) or a new effect can be produced on it’s own.***

***Drug interaction maybe the results of various process May include alternation in the pharmacokinetics of the drug such as alternation in the absorption, distribution, metabolism, and excretion of a drug.***

***Alternatively, drug interaction maybe the results of the pharmacodynamics properties of the drug, eg the co- administration of the receptors antagonistic and an against for the same receptors.***

***Types***

* ***Drug-drug interaction***
* ***Drug-food interaction***
* ***Drug-plant interaction***
* ***Drug-disease interaction***

***Q. (B). Write a note on pharmacodynamics drug interaction.***

***Answer. Pharmacodynamics interaction. Are those in which the activity of the object drug at it site of action as altered by the precipitant. Such interaction maybe direct or indirect . There are of two types.***

* ***Direct pharmacodynamics interaction***
* ***Indirect pharmacodynamics interaction***

***Indirect pharmacodynamics interaction.***

***Both the object and the precipitant drugs have unrelated effect. But the latter in some way alert the effect of the former. Example are salicylate decrease the ability of the platelets to aggregate thus impairing to homeostasis if warfarin induced bleeding occur.***

***Direct pharmacodynamics interaction.***

***In which drug having similar or opposing pharmacological effect are use concurrently***

***There are three consequences of direct interaction***

1. ***Antagonism: the interacting drug having opposing actions.***

***Example. Acetylcholine, and noradrenaline have opposing effect on heart rate.***

1. ***Addition or summation: the interacting drug having similar action and the resultant effect is the some of the individual drug response.***

***Example: CNS depressant like sedative and hypnotic.***

1. ***Synergism or potentiation synergistic action: it is an enhancement of action of one drug by another.***

***Example: alcohol enhances the analgesic activity of aspirin.***

***Question no 2***

1. ***Differentiate between hypoglycemic and hyperglycemia agent with example.***

***Answer. Hypoglycemic agent. The hypoglycemic agent are the agents when our pancreas don’t work properly and secretions of insulin are impaired. So the patient take hypoglycemic agent to low the glucose levels in the blood.***

***Example. Orinase ( chlorpropamide ) glucotrol ( glipizide) micronase ( glyburide)***

***Hyperglycemic agent. In some condition the secretions of insulin are high then level or the secretions of the glucagon is low. So then the patient take hyperglycemic agent to increase the blood glucose level.***

***Example. D5oW is a sugar solution given intravenously for acute hypoglycemia. Glucagon is indicating for emergency treatment when as iv is unobtainable.***

***Question no 2***

***B) what is emesis and antiemetic drugs.***

***Answer. Emesis: emesis is a involuntary forceful explosion of the content of an individual stomach through the mouth.***

***Antiemetic drug.***

* ***Serotonin antagonists.*** *Zofran*
* ***Dopamine antagonists.***  *Compazine, Phenergan, inapsine , Reglan*
* ***Cannabinoids.*** *Marinol, cesamet.*

***Question no 2***

***C).***  *What kind of drug use for cough and sputum give example.*

***Answer. 1) Antitussive. They are classified in two types***

***Central antitussive.***

* ***Dependence.***  *Codeine, dihydrocodeine*
* ***Independence.***  *Dextromethorpham, cloperastine, pentoxyverine.*

***Peripheral antitussive.***  *Benzonatate, narcotin*

***2) mucolytic drug. These drug use for sputum,***

***Drugs.*** *Acetylcysteine, mecystine, carbocistine, domase alfa .*

***Question no 3***

1. ***Enumerate different target for antibiotics .***
* ***Answer. (A(A) Enumerate different targets for antibiotics.***
* ***, there are three main antibiotic targets in bacteria:***
* ***:The cell wall or membranes that surrounds the bacterial cell.***
* ***:The machineries that make the nucleic acids DNA and RNA.***
* ***:The machinery that produce proteins (the ribosome and associated proteins)***
* ***Gram positive “ cell wall composed of thick layer of peptidoglycan” Gram negative “cell wall composed of thin layer of peptidoglycan”***

***.***

***Question no 3***

1. ***Write the viral replication in detail.***

***Answer.***

***Viral replication.***

* ***Adsorption. Initially the virus attached or adsorbed to the surface of the host cell. Most virus are attracted to the host cell because of the interaction between protein on the outer surface of the virus and receptors 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 passing with the host cell membrane and releasing the viral genetic material to the host cell.***
* ***Biosynthesis. When a viral genetic material is released within the host cell the virus take control of the cells molecular synthesizing machinery to initiate the biosynthesis of new viral enzymes and protein.***
* ***Maturation and release. The components part of the virus the genetic core and the surrounding shell are assembled into mature viruses and release from the host cell.***

***Question no 4***

1. ***Classify antihypertensive drug with example.***
* ***Answer. An(A) Classify antihypertensive drugs with example.***
* ***Antihypertensive drugs comprise several classes of compound with the therapeutic intention of preventing, controlling, or treating hypertension. The classes of antihypertensive drug differ both structurally and functionally. They are important in anaesthetic practice because they are commonly prescribed to the general population, with the overall prevalence of hypertension being 31% in the UK [defined by the National Institute for Health and Care Excellence (NICE) as a measurement of 140/90 mm Hg or higher in clinic, with subsequent ambulatory or home measurement of 135/85 mm Hg or higher].1 Antihypertensive drugs are used frequently in other unrelated conditions, for example, β-blockers in thyrotoxicosis and anxiety, or angiotensin-converting enzyme inhibitors (ACEIs) in heart failure. Hence both the drug and its indication are relevant to the conduct of anaesthesia.***
* ***Examples:***
* ***:Decongestants, such as those that contain pseudoephedrine.***
* ***:Pain medicines (NSAIDs), such as ibuprofen and naproxen.***
* ***:Cold and flu medicines. ...***
* ***:Some antacids and other stomach medicines. ...***

***:Some herbal remedies and dietary supplements.***

***Question no 4***

* 1. ***What is angina pectoris cause and drug therapy.***
* ***Answer. A★1: STABLE ANGINA:***
* ***★CAUSES:***
* ***Myocardial oxygen demand exceeds oxygen supply , usally brought on by physical exertion.***
* ***★DRUGE THERAPY OF STABLE ANGINA:***
* ***Sublingual /lingul nitroglycocin is typically used at the onset of an acute apisode a beta blocker or a long acting nitrate is often used to prevent attacks.***
* ***★2:VARIANT ANGINA:***
* ***★CAUSE:***
* ***Myocardial oxygen supply decreases due to corronary vasopasm may occure while patient is at rest.***
* ***DRUG THERAPY OF VARIANT ANGINA:***
* ***Treated primrily with a calcium channel nlocker.***
* ***★3:UMSATABLE ANGINA:***
* ***CAUSES:***
* ***Myocardial oxygen supply decreases at the same time oxygen demand increases can occure at any time secondary to athetosclerotic plaque rupture within the corinary artery.***
* ***★DRUG THEROPHY OF UNSTABLE ANGINA:***
* ***May require a combination of druge that is a calcium channel blocker. Anticoayulant druges are also helpful in preventing thrombogenesis and coronary occlusion.★1: STABLE ANGINA:***
* ***★CAUSES:***
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***May require a combination of druge that is a calcium channel blocker. Anticoayulant druges are also helpful in preventing thrombogenesis and coronary occlusion.***

***Question no 5***

1. ***Differentiate between general and local anesthetics, explain various stages of the anesthesia.***

***Answer. Local anesthetics.***

* ***Local anesthetics suppress pain in a part of the body.***
* ***Local anesthetics can be administered by the doctor without the help of an anesthesiologist.***
* ***In local anesthesia there are low risk of fatality.***

***General anesthesia.***

* ***They suppress pain in the hole body.***
* ***In general anesthesia an anesthesiologist must be present.***

***In general anesthesia there are greater risk of fatality.***

***Stage of anesthesia.***

***1)Stage of analgesia.***

* ***Start from beginning of anesthetics inhalation and last up to loss of consciousness.***
* ***Pain is progressively abolished.***
* ***Patient remain conscious can hear and see, and feel a dream like state.***
* ***Reflexes and respiration remain normal.***
* ***Some minor operation can be carried out during this stage.***

***2) stage of excitement.***

* ***This stage start from Loss of consciousness up to gain of rhythmical respiration.***
* ***Respiration. Irregular and large in volume.***
* ***Heart rate and BP raised.***
* ***Pupal…. Large and divergent.***
* ***Muscle tone increased….. jaw maybe tight.***
* ***Patient may shout or struggle.***
* ***Involuntary micturition or defecation.***
	+ 1. ***Surgical anesthesia. Extent from onset of regular respiration to cessation of spontaneous breathing.***
* ***This has been divide into 4 plane.***
* ***Plane 1. Roving eye balls.***
* ***Plane 2. Loss of corneal and laryngeal reflexes.***
* ***Plane 3. Pupal start dilating and light reflex is Loss.***
* ***Plane 4 intercostal paralysis***
	+ 1. ***Stage of medullary paralysis***
* ***There is cessation of breathing leading to failure of circulation and death.***
* ***Pupal is widely dilated.***
* ***Muscle are totally flabby.***
* ***Pulse is thready or imperceptible.***
* ***BP is very low.***

***Question no 5***

***B) write down the machanism of action of narcotic and non-norcotic analgesic.***

***Answer. Narcotic analgesic. The word opioid refer to derivative of the opium plant or to synthetic drug that initiate natural narcotic.***

***Mechanism of action. Opioid exert their major effect by interacting with opioid receptors in the CNS and an other anatomic structure such as the gastrointestinal tract and the urinary bladder. Opioid cause hyperpolarization of the nerve cell inhibitions of nerve firing. And presynaptic inhibitions of transmitter release.***

***Morphine also appears to inhibit the release of the many excitatory transmitter from nerve terminal carrying nociceptive stimuli.***

***Non-narcotic***

***Mechanism of action. Cyclooxygenase is the enzymes that convert arachidonic acid into the endoperoxide precursor of prostaglandin important mediator of inflammation.***

***Cyclooxygenase have 2 isoform***

***A….COX-1. COX-1 IS PRIMARILY expressed in non-inflammatory cell.***

***B….COX-2. COX-2 is expressed in activated lymphocytes, polymorphonuclear cell, and other inflammatory cell.***

***The end.***