



WINTER- 16 EXAMINATION
Model Answer

Subject Code: **0813**

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Important Instructions to examiners:

- 1) The answers should be examined by key words and not as word-to-word as given in the model answer scheme.
- 2) The model answer and the answer written by candidate may vary but the examiner may try to assess the understanding level of the candidate.
- 3) The language errors such as grammatical, spelling errors should not be given more Importance (Not applicable for subject English and Communication Skills).
- 4) While assessing figures, examiner may give credit for principal components indicated in the figure. The figures drawn by candidate and model answer may vary. The examiner may give credit for any equivalent figure drawn.
- 5) Credits may be given step wise for numerical problems. In some cases, the assumed constant values may vary and there may be some difference in the candidate's answers and model answer.
- 6) In case of some questions credit may be given by judgement on part of examiner of relevant answer based on candidate's understanding.
- 7) For programming language papers, credit may be given to any other program based on equivalent concept.

Q. No.	Sub Q.N.	Answer	Marking Scheme
1	a)	Define following terms with two examples of each. Analeptics: These drugs stimulate central nervous system and also stimulate the respiratory center improving respiration. Or These are the pharmacological agents which stimulate the central nervous system and stimulate respiration. Examples:Caffeine,Amphetamine, Nikethamide, Precathamide, Doxapram,Bemigrade	Defn 1 Ex. 1 (any two)
	b)	Antacids: These are the pharmacological agents which when administered neutralize acid in the stomach and raise the gastric pH Examples: Sodium bicarbonate, Aluminium hydroxide,calcium carbonate,magnesium trisilicate/oxide etc	



WINTER- 16 EXAMINATION
Model Answer

Subject Code: **0813**

- c) **Antiseptics:** These are the agents which are used to prevent the growth of microorganisms and can be applied to living tissues.
Eg: Phenol, alcohol, iodine, mercurochrome, potassium permanganate, boric acid, benzalkonium chloride, crystal violet etc.
- d) **Antibiotics:** These are the chemical substances produced by microorganisms having the property of inhibiting the growth of, or destroying other microorganisms in high dilution.
E.g Penicillins, (Penicillin G, Amoxicillin etc) cephalosporins (cefadroxil, cefaclor etc), aminoglycoside antibiotics (Streptomycin, Kanamycin etc) Erythromycin, Azitromycin etc
- e) **Anthelmintics :** Anthelmintics are the agents used to treat helminthiasis. (worm infestation)
Examples: piperazine, albendazole, mebendazole, pyrantel pamoate, tetramisole etc
- f) **Contraceptives:** These pharmacological agents when administered prevent conception and thus prevent pregnancy.

Examples: Estrogen, Progesterone or combination of both, centchroman etc
- g) **Emetics:** These are the pharmacological agents which are used to cause emesis ie vomiting.
Examples: Apomorphine, Mustard, Ipecacunha, Sodium chloride
- h) **Expectorants:** These are the drugs which cause production of demulcent respiratory tract fluid that covers the irritant mucosa. **OR**
These are the drugs which increase the secretion of the respiratory tract, thereby reducing the viscosity of the mucus and help in its removal from the respiratory tract.
Eg: Ammonium chloride, potassium iodide, ammonium bicarbonate, ipecac etc.
- i) **Haemostatic agents:** These are the pharmacological agents which when administered stop or arrest bleeding from capillary vessels.
E.g. Gelatin sponge, oxidized cellulose, Fibrinogen, Thrombin, Thromboplastin act as haemostatics.
- j) **Laxatives:** These are the agents which facilitate or accelerate evacuation of bowels so that feces may be expelled with ease.
Eg. Methyl cellulose, Sodium CMC, Liquid paraffin, Dioctyl sodium sulphosuccinate DOSS



WINTER- 16 EXAMINATION
Model Answer

Subject Code:

0813

2	<p>k) Miotics: These are the agents which produce miosis ie constriction of pupil. Eg. Parasympathomimetics like physostigmine, pilocarpine,carbachol</p> <p>l) Tranquilizers are the pharmacological agents used to reduce tension or anxiety or are the agents used to cause calming effect. E.g Chlorpromazine, Haloperidol, Reserpine, Clozapine</p> <p>Attempt any four of the following:</p> <p>a) What is therapeutic index? Explain what is margin of safety? Therapeutic index (TI) = LD50/ED50 Therapeutic index is defined as the ratio of median lethal dose to median effective dose. It should be always greater than one. A dose of the drug which produces the stated effect in 50% of individuals within the population is called median dose. The therapeutic index indicates how close effective dose is to lethal dose for 50% of test population. So it gives an idea of margin of safety. As the ED50 approaches the LD50, the danger of the drug toxicity increases significantly. Therefore, a drug with larger therapeutic index is safer than one smaller therapeutic index. Hence drug with lesser therapeutic index should be administered cautiously.</p> <p>b) Define Receptor. Give significance of plasma protein binding of drugs. Receptor : This is proteinaceous structure present inside the cell or on the outer surface,with which the drugs/substances interact with. Significance:</p> <ol style="list-style-type: none"> 1. Plasma protein drug complex forms the temporary reservoir of the drug in the blood 2. Complex increases the duration of action of drugs 3. Possibility of drug drug interaction occurs when two or more drugs are taken having strong plasma protein binding affinity and in such case drug having greater plasma protein binding affinity displaces the drugs having weaker affinity resulting in adverse effect. 	<p>3 Mks each</p> <p>1</p> <p>2</p> <p>1</p> <p>2</p>
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WINTER- 16 EXAMINATION
Model Answer

Subject Code: **0813**

4. Only free fraction (fraction which is not bound to the proteins) is available for therapeutic action, metabolism and excretion.

(c) **Explain different mechanisms of drug absorption**

Absorption of drugs means entry of drug in the blood circulation, it may take place by following processes

i) Passive diffusion- it's the commonest process, the drug passes from higher concentration gradient to lower concentration gradient, Its energy independent. Many lipid soluble drugs such as barbiturates, morphine are absorbed by this process

ii) Active transport- It's a specialized transport which requires energy and a carrier molecule, it can work against the concentration gradient.. Drugs of larger molecular size use active transport system.

iii) Facilitated diffusion- this is carrier mediated transport independent of energy and independent of lipid solubility. This is highly selective.

Eg- absorption of vitamin B12 with the help of intrinsic factor in the GIT

iv) Pinocytosis- the ability to surround & engulf molecules of liquid is called Pinocytosis.

The cell takes up the fluid from its surrounding. This is important in unicellular organisms.

v) Filtration: Is the process by which water soluble drugs of low molecular weight cross the membrane through certain pores which are present in the membrane .eg Urea

d) **Classify various routes of administration of drugs. Give merits of Sublingual route.**

Routes of administration;

- Enteral
- Parenteral
- Local applications

Enteral - drug placed directly in the GI tract:

sublingual - placed under the tongue

oral - swallowing

rectum - Absorption through the rectum (enema)

3
Any
three
explain

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WINTER- 16 EXAMINATION
Model Answer

Subject Code:

0813

Parenteral: Injections & Inhalations

Injections: Intravascular, Intramuscular, Intradermal, Subcutaneous, Intrathecal, Intraperitoneal, Intramedullary, Intraarticular

Inhalation -

Local Applications

Or tabular format

Enteral			Parenteral		Local applications
Oral	Sublingual	Enema	Injections	Inhalations	
		Retention	Intravenous		
		Evacuant	Intraarterial		
			Intramuscular		
			Subcutaneous		
			Intraperitoneal		
			Intrathecal		
			Intramedullary		
			Intraarticular		

Merits of sublingual route

100% absorption is possible

Quick onset of action

Avoids first pass effect

Avoids degradation of the drug in GIT

Quick termination of drug effect on spitting the tablet.

Define drug dependence. Differentiate between drug addiction & drug habituation

Drug dependence is defined as a state of psychic and sometimes physical dependence resulting from interaction between living organism and drug showing behavioral and

1

Any two

1



WINTER- 16 EXAMINATION
Model Answer

Subject Code:

0813

other responses that always include compulsion to take drugs in order to experience its psychic effects or to avoid discomfort.

Drug Addiction:	Drug Habituation
It is a state of periodic or chronic intoxication produced by repeated consumption of a drug.	It is a condition resulting from repeated administration of a drug
There will be overpowering desire to continue taking the drug and obtain it by any means.	There will be desire but not compulsion to continue taking the drug for the sense of well-being.
There is a tendency to increase the dose.	Little or no tendency to increase the dose.
A psychological and generally a physical dependence on the effect of the drug.	Some degree of psychic dependence on the effect of the drug, but absence of physical dependence and hence of an abstinence syndrome.
The effect is detrimental to the individual and to the society.	If any detrimental effect it is on the individual.

2

f)

Define Biotransformation. Briefly explain process of biotransformation

Biotransformation- It is the alteration of drugs within living organism so as to modify its activity or nature. It is the process of metabolism of the drugs which prepare the drugs for excretion.

Process of biotransformation :

- 1) Phase I
- 2) Phase II

Phase I: These Preconjugation reactions produce a chemical change in the drug molecule such reaction includes reduction, hydrolysis, and oxidation. Enzymes are localized mainly in the microsomal fraction of liver cell. It is non synthetic and produces more water soluble and less active metabolite.

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WINTER- 16 EXAMINATION
Model Answer

Subject Code: **0813**

3)	a)	<p>Phase II: This conjugation reaction involves the coupling of drugs or its metabolites that are formed in phase I reaction to another form. It includes glucuronidation, sulphation, acetylation etc. conjugated products are more water-soluble & can be eliminated in bile.</p> <p>Attempt any four of the following</p> <p>Name the drug producing following effects</p> <ul style="list-style-type: none">i) Paralysis of accommodation:- Atropineii) Hyperplasia of gum:- Phenobarbital, Phenytoiniii) Dryness of mouth:- Atropine, Homatropineiv) Ototoxicity:- canamycin, gentamycin, neomycin, streptomycin, furosemide, cisplatinv) Gray baby syndrome:- Chloramphenicolvi) Pheochromocytoma:- catecholamine, norepinephrine, epinephrine	0.5 each
	b)	<p>Mention adverse effect of following drugs</p> <ul style="list-style-type: none">i) Tetracycline:- bones deformity, GI side effects, hepatic dysfunction, teratogenicityii) Atropine:- Tachycardia, photophobia, dry mouth, confusion, hallucination, cycloplegiaiii) Furosemide:- jaundice, ototoxicity, electrolyte imbalance, dehydration, dark urineiv) Codeine:- drowsiness, respiratory depression, euphoriav) Bromocriptine:- insomnia, depression, loss of appetite, stomach pain, constipationvi) Reserpine:- weight gain, gastric ulceration, stomach cramps, hypotension, severe mental depression, suicidal tendency.	0.5 each
	c)	<p>Mention drug of choice for following conditions</p> <ul style="list-style-type: none">i) Plague:- Streptomycin, gentamicin, doxycycline, sulfamethoxazole, trimethoprim	0.5 each



WINTER- 16 EXAMINATION
Model Answer

Subject Code:

0813

- ii) Leprosy:- Dapsone (DDS), rifampicin, minocycline, ofloxacin, clofazimine,
- iii) Cardiac arrhythmia:- Quinidine, lignocaine, propranolol, practolol, procainamide
- iv) Gout :- Diclofenac, allopurinol, colchicin, piroxicam, phenylbutazone
- v) Amoebic dysentery:- Emetine, metronidazole, tinidazole, chloroquine, diloxanide furoate,
- vi) Round worm infection:- Mebendazole, albendazole, piperazine, tetramizole

d)

Mention drug contraindicated in following conditions

0.5 each

- i) Myasthenia gravis:- streptomycin, Kanamycin
- ii) Pregnancy:- tetracycline, chloramphenicol, cisplatin, cyclophosphamide, barbiturates and other CNS depressants etc
- iii) Constipation:- Codeine, morphine
- iv) Insomnia:- Amphetamine, caffeine
- v) Head injury:- morphine
- vi) Hyperacidity:- Aspirin, ibuprofen and other NSAIDs

(e)

Mention the trade name for following drugs

0.5 each

- i) Paracetamol:- calpol, panadol, crocin, cemol, afimol
- ii) Albendazole:- ABZ plus, albena, albeder, bendal, zentel.
- iii) Folic acid:- folinal, folicare, folex, folvite
- iv) Azithromycin:- zithronic, arvin, avindo, abira, 3A
- v) Aluminium hydroxide:- Aludrox, gelucil, divol, digene.
- vi) Glyceryl trinitrate:- nitroglycerin, angicare, glynit, angised, glytn



WINTER- 16 EXAMINATION
Model Answer

Subject Code:

0813

<p>b)</p>	<p>Describe pharmacological profile of adrenaline</p> <p>Heart: - adrenaline with its action on B-receptors of heart increases heart rate, force of contraction and cardiac activity.</p> <p>Blood vessels and blood pressure:- the blood vessels of skin and mucous membrane are constricted. Adrenaline dilates blood vessels of skeletal muscles by acting on B-receptors. The net result is thus decrease in peripheral resistance. It show biphasic response in moderate dose</p> <p>Smooth muscles:-</p> <ul style="list-style-type: none">a) Bronchial smooth muscles :- adrenaline is a powerful bronchodilator particularly when the bronchi get constricted in a asthmab) Smooth muscles of GIT:- The muscles of GIT relax and peristaltic movement get sluggish.c) Central Nervous system:- Therapeutic doses of adrenaline may give rise to tremors, restlessness, palpitation and apprehension <p>Metabolism:- it produces hyperglycemia by accelerating glycogenolysis in the liver.</p> <p>Antiallergic action:- adrenaline is a physiological antagonist of histamine and counters the bronchoconstriction and hypotension of anaphylactic shock.</p> <p>If combined with local anesthetic prolongs its action.</p> <p>State the ideal properties of local anaesthetics.</p>	<p>3</p>
<p>c)</p>	<ul style="list-style-type: none">1. Has hydrophilic amino group & lipophilic aromatic group with an intermediate chain. Or it is a water soluble salt of lipid soluble substance.2. Produces anesthesia quickly & is nonirritant.3. Produces reversible action persisting for required time for operative procedure.4. Is non habit forming5. Doesn't cause any permanent damage to the nerves.6. Has vasoconstrictor action so that there is delayed absorption (in general circulation) &	<p>3 for any Six</p>



WINTER- 16 EXAMINATION
Model Answer

Subject Code:

0813

prolonged action.

7. Non antigenic.

8. It should not decompose on standing

d) What is tuberculosis? Give its treatment.

Tuberculosis (TB) is an airborne infection caused by bacteria mycobacterium tuberculosis that most often affect lungs. tuberculosis is curable and preventable. When people with lung TB cough, sneeze or spit, they spread the TB germs in to the air.

Two types of TB:

Pulmonary TB :affects lungs

Extra Pulmonary: affects any organ other than lungs. Eg Bones,intestine,lymp nodes,brain etc

Treatment of TB:- tuberculosis is long treatment which requires 8 month to 3 years

If tackled within time, it is no longer incurable infection

- 1) First Line agent:- streptomycin, isoniazid, rifampin, ethambutol pyrazinamide
- 2) Second line agent:- PAS, ethionamide, kanamycin, amikacin
- 3) other agents: Ofloxacin, ciprofloxacin,
- 4) TB requires long term persistant treatment and if left halfway,development of resistance is common

Synergistic multidrug treatment is given for such purpose, combination of 2-4 drugs are prescribed at a time

Eg Four drug regime:- i) INH + Streptomycin + Rifampin + Pyrazinamide

DOTS (Directly observed treatment short course)is a Government strategy in which free of charge treatment of TB is given under direct observation

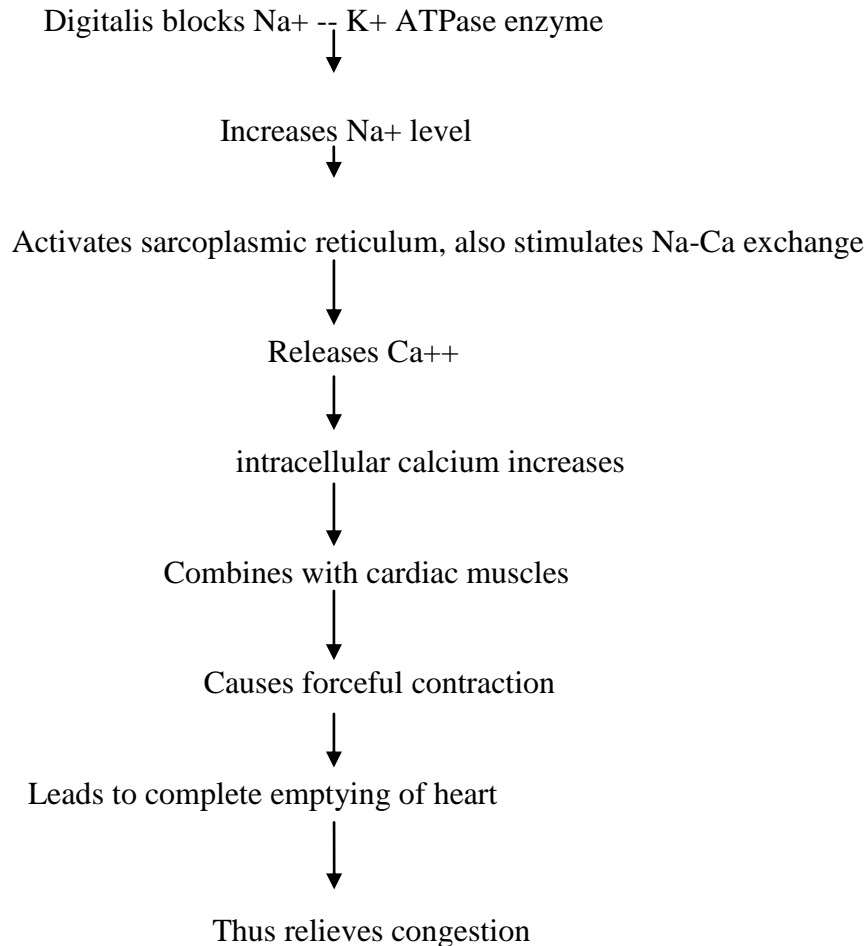
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WINTER- 16 EXAMINATION
Model Answer

Subject Code: **0813**



iii) Sulfonamides:-

Folic acid derived from PABA is essential for growth and multiplication of microorganism. Sulfonamides inhibit folic acid synthetase enzyme and because its structural resemblance to Para amino benzoic acid, remove PABA from the site and inhibits conversion of para-aminobenzoic acid to folic acid, by attaching to the site

Because of deficiency of folic acid, microorganism cannot multiply and grow, thus growth and multiplication of microorganisms are stop.

OR



WINTER- 16 EXAMINATION
Model Answer

Subject Code:

0813

Sulphonamide administered



Structural similarity with PABA



Removal of PABA from site



Prevent synthesis of folic acid



Causes deficiency of folic acid



Results in Bacteriostatic action



WINTER- 16 EXAMINATION
Model Answer

Subject Code: **0813**

5)

a) **Define: Epilepsy.**

Epilepsy is neurological disorder characterized by sudden periodic attacks of motor, sensory or psychological malfunction. The attacks called as seizures are initiated by the abnormal & irregular discharges of electricity from millions of neurons in the brain.

Epilepsy is a periodic disturbance in the rhythm of the brain.

Classify antiepileptics with suitable examples

1. Drugs used in grandmal epilepsy: Phenytoin, Methoin, Phenobarbitone, Carbamazepine
2. Drugs used in Petit mal epilepsy:
Trimethadione, Paramethadione, Phensuximide, Ethosuximide
3. Drugs effective in Psychomotor epilepsy: Phenytoin, Primidone
4. Drugs used in focal Cortical or Jacksonian Epilepsy:
Phenytoin, Methoin, Phenobarbitone
5. Drugs used in Status Asthmaticus: Diazepam, thiopentone

OR

Chemical classification can also be considered.

- | | | |
|----|------------------------------|---------------------------|
| 1. | Hydantoins | eg Phenytoin, Mephenytoin |
| 2. | Barbiturates | eg Phenobarbitone |
| 3. | Deoxybarbiturate | eg Primidone |
| 4. | Iminostilbene | eg Carbamazepine |
| 5. | Succinimide | eg Ethosuximide |
| 6. | GABA transaminase Inhibitors | eg Valproic acid |

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WINTER- 16 EXAMINATION
Model Answer

Subject Code: **0813**

	<p>7. Benzodiazepins eg Diazepam, Clonazepam</p> <p>8. Miscellaneous eg Acetazolamide</p> <p>9. GABA analogues eg Gabapentin</p> <p>10. Others eg Lamotrigine</p>	
b)	<p>Classify diuretics with one example each. Justify : Water is physiological diuretic</p> <p>Classification:</p> <p>1. Weak diuretics</p> <p>i) Osmotic diuretics</p> <p>A. Electrolytes-Sodium and Potassium salts</p> <p>B. Non electrolytes- Mannitol</p> <p>ii) Acidifying salts-Ammonium chloride</p> <p>iii) Xanthine derivatives- Theophylline</p> <p>iv) Carbonic anhydrase inhibitors- Acetazolamide</p> <p>2. Moderately potent diuretics-Thiazides like: benzothiazide, Hydrochlorothiazide</p> <p>3. Very potent diuretic- Frusemide, ethacrynic acid</p> <p>4. Potassium sparing diuretics- spironolactone, aldosterone antagonist</p> <p>Classification as per mechanism of action can also be considered.</p> <p>Justify : Water is physiological diuretic</p> <p>Water when taken in excess it inhibits anti diuretic hormone and increases the permeability of nephron to water. This results into decreased reabsorption of water thus volume of urine to be excreted increases that will lead to diuresis.</p>	<p>1.5</p> <p>1.5</p>



WINTER- 16 EXAMINATION
Model Answer

Subject Code: **0813**

OR

ADH (antidiuretic hormone) is secreted by posterior lobe of pituitary gland.

ADH increases the permeability of distal convoluted tubule & causes more reabsorption of water.

When excess water is taken it causes decrease in osmotic pressure of blood. This inhibits the ADH secretion & results into decreased reabsorption of water causing diuresis.

Hence water is called as physiological diuretic.

Water diuresis helps to wash out certain drugs that irritate the urinary tract or are of limited solubility in urine such as salicylates, sulphonamides. It is also useful in urinary tract infections.

c) **Write a note on plasma expanders.**

Definition: These are pharmacological agents with high molecular weight when administered parenterally remain in blood stream and increase circulatory fluid volume by exerting an osmotic pressure.

Examples: Dextran, gelatin 6% solution, PVP, Physiological saline acts as plasma expanders.

Usefulness: They help in restoration of blood volume & in shock after severe haemorrhage. They also increase oxygen carrying capacity of blood. They help in management of burns or hypoproteinaemia.

d) **Discuss chemotherapy of Malaria.**

Antimalarial drugs can be:

Drugs effective against erythrocytic forms: Chloroquine, Quinine, Pyrimethamine

Drugs effective against gametocytic form: Primaquine

Drugs effective against exoerythrocytic form: Primaquine.

OR

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3



WINTER- 16 EXAMINATION
Model Answer

Subject Code:

0813

Causal prophylactics:

Includes drugs which prevent maturation of or destroy the sporozoites within infected hepatic cells & prevent erythrocytic invasion. Eg. Primaquin

Suppressive drugs :

Includes schizonticides which inhibit erythrocytic stages of Plasmodium, so stop the clinical signs of disease & prevent the symptoms.

Drugs producing radical cure:

These drugs eradicate both erythrocytic & exoerythrocytic forms of Plasmodium & inactivate gametocytes.

Prophylactic measures:

When there is malarial endemic prophylactic measures must be taken like avoiding mosquitoes, taking prophylactic drugs like Proguanil, Pyrimethamine.

OR

- | | |
|---------------------------|--------------|
| 1. 4-aminoquinolines | Chloroquine |
| 2. 8-aminoquinolines | Primaquine |
| 3. Quinoline methanols | Quinine |
| 4. Sesquiterpine lactones | Artemisinin |
| 5. Folate antagonists | Proguanil |
| 6. Phenathrene methanol | Halofantrine |
| 7. Napthaquinone | Atovaquone |
| 8. Antibiotics | Tetracycline |



WINTER- 16 EXAMINATION
Model Answer

Subject Code:

0813

	<p>e) What is an ‘antidote’? Give symptoms & treatment of Arsenic poisoning.</p> <p>Medicine or agent taken or given to counteract a particular poison is an antidote.</p> <p>Symptoms :Nausea, epigastric distress, vomiting ,diarrhea, blood in stools</p> <p>Headache, vertigo, depression of circulation& mental confusion</p> <p>Followed by convulsions, coma & death</p> <p>Treatment:</p> <p>Specific antidote: BAL(Dimercaprol)</p> <p>Gastric lavage, IV Fluids, Morphine as analgesic</p> <p>f) Give treatment of diabetes. Justify: Why insulin is not given orally.</p> <p>Diabetes can be treated by using insulin preparations or oral hypoglycemic compound.</p> <p>Insulin dependent diabetes or juvenile diabetes can be treated by exogenous insulin</p> <p>Non insulin dependent diabetes can be treated by oral hypoglycemic agents like Sulphonyl ureas (Tolbutamide, Chlorpropamide) or Biguanides (Phenformin, Metformin).</p> <p>Combination of agents can also be used. Blood sugar level has to be monitored regularly for diabetic patients.</p> <p>Insulin is a polypeptide hormone. When administered orally it gets degraded by proteolytic enzymes& gastric juice. So no therapeutic response is obtained. So parenteral route is chosen for insulin administration.</p>	<p>1</p> <p>1</p> <p>1</p> <p>1.5</p> <p>1.5</p>
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WINTER- 16 EXAMINATION
Model Answer

Subject Code:

0813

6

a)

Attempt any four of the following

Define: Anaesthesia. Explain stages of general anaesthesia

Anesthesia means loss of sensation-

General Anesthesia is characterized by unconsciousness, muscle relaxation, and loss of sensation over the entire body, and results from the administration of a general anesthetic.

Stages of anesthesia

- i. Stage of analgesia
- ii. Stage of delirium or excitement
- iii. Stage of surgical anesthesia
- iv. Stage of respiratory paralysis

STAGE 1- Stage of analgesia --- This stage is characterized by loss of pain sensation..Minor surgical operations and dental extractions are performed in stage

STAGE 2-Stage of delirium --- This stage is characterized by excitement, thus no surgical procedures are performed in this stage

STAGE 3- Stages of Surgical Anaesthesia:

As more anaesthetic agents gets in deep breathing starts and the patient passes into the third stage of anaesthesia. The stage extends from the end of second stage until cessation of spontaneous respiration.The effects of this stage are recognized by following signs:

1. Regular respiration is regained after second stage.
2. Skeletal muscles are relaxed.
3. The gradual loss of reflexes such as eyelid and conjunctival reflexes and
4. The eye balls are roving.

1

3



WINTER- 16 EXAMINATION
Model Answer

Subject Code:

0813

Major surgical operation is done in this stage.

STAGE 4- Stage of respiratory paralysis--- Excessive administration of anaesthetic agent may lead to this stage,. It is characterized by stoppage of breathing, fall of blood pressure and cardiac collapse. It leads to the death.

b) **Classify antibiotics. Pharmacological profile of penicillin.**

Classification of antimicrobial agents can be based on:

Their site of action or

Chemical structure or

Activity against particular type of organisms.

Based on site of action antibiotics can be classified as:

Inhibitors of cell wall synthesis eg Penicillins

Inhibitors of cell membrane function eg Polymixin

Inhibitors of protein synthesis eg Tetracyclins

Inhibitors of nucleic acid synthesis/ function; eg Rifampicin

Inhibitors of metabolism eg Sulpha drugs

Any other classification can also be considered.

Penicillin interferes with synthesis of cell wall mucopeptide of gram positive organisms. It is effective against multiplying organisms. It acts as bactericidal drug.

Penicillin is useful in streptococcal, pneumococcal, staphylococcal infections.

Useful in treatment of Pneumonia, Meningitis, Pharyngitis, Diphtheria etc.

Useful in treatment of venereal diseases like Syphilis, Gonorrhoea.

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2



WINTER- 16 EXAMINATION
Model Answer

Subject Code: **0813**

	<p>d) Classify NSAIDs with one example each. Give treatment for salicylate poisoning.</p> <p>Classification</p> <ol style="list-style-type: none">1) Salicylates – eg Aspirin, Sodium salicylate2) Para aminophenol derivatives – eg Paracetamol, Phenacetin3) Indole acetic acid derivatives – eg indomethacin4) Anthranilic acid derivatives - eg mefenamic acid5) Propionic acid derivatives – eg Ibuprofen, naproxen6) Oxicam derivatives – eg Piroxicam7) Pyrazolone derivatives – eg phenylbutazone, oxyphenbutazone8) Phenyl acetic acid derivatives – eg Diclofenac9) Miscellaneous: Nimesulide, rofecoxib etc <p>Salicylate poisoning:</p> <p>Gastric lavage</p> <p>External cooling with cold water sponge</p> <p>I.V. fluids-Blood pH should be monitored</p> <p>Forced alkaline diuresis with sodium bicarbonate & diuretic with frusemide</p> <p>Blood transfusion or Vitamin K</p> <p>e) What is cancer? Discuss in brief treatment of cancer.</p> <p>Cancer is uncontrolled growth of abnormal cells. It is characterized by excessive cell growth (in the form of tumor), invasiveness, ability to metastasize & a shift of cellular metabolism.</p> <p>There are many types of cancer treatment such as surgery with chemotherapy and/or radiation therapy.</p> <p>Chemotherapy includes use of variety of agents. Drugs can be used alone or in combination. Immunotherapy, targeted therapy, or hormone therapy can also be employed.</p>	<p>2.5</p> <p>1.5</p> <p>1</p> <p>3</p>
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WINTER- 16 EXAMINATION
Model Answer

Subject Code:

0813

Classification of anticancer drugs

I. Alkylating agents:

- Nitrogen mustards:E.g.: Chlorambucil, Mechlorethamine , Chlorambucil
- Ethylenimines:E.g.: Triethylenemelamine, Triethylene thiophosphamide
- Alkylsulphones:E.g. : Busulphan

II. Antimetabolites:

- Folic acid antagonists:E.g.: Methotrexate
- Purine Antagonist:E.g.: 6-mercaptopurine
- Pyrimidine Antagonist:E.g.: 5-Flurouracil, Cytosine

III. Radioactive Isotopes: E.g.: Radioiodine, Radiophosphorous

IV. Antibiotics: E.g.: Actinomycin-D, Mitomycin

V. Hormones: E.g.: Androgens, Estrogens, Corticosteroids

VI. Enzymes:E.g.: L-asparaginase

VII. Miscellaneous Agents:

Vinca alkaloids: E.g.: Vincristine, Vinblastin

Others:E.g.: Hydroxyurea, Cis- platin

f)

Define bronchial asthma .Give its types. Discuss treatment of status asthmaticus

Definition: It is a clinical syndrome characterized by paroxysmal dyspnoea and wheeze due to increased airway resistance in narrowed bronchi.

OR

It is a condition of bronchoconstriction leading to difficulty in breathing.

1



WINTER- 16 EXAMINATION
Model Answer

Subject Code:

0813

Bronchial asthma clinically presents itself in 3 main forms:

Episodic form:

Patient gets discrete infrequent acute attacks which are relieved by bronchodilator drugs with no disability between attacks. It is often due to allergy, upper respiratory tract infection or psychological trauma.

Status asthmaticus:

Patient gets severe, persistent acute attack which doesn't respond to routine treatment with adrenaline & aminophylline. There is usually respiratory insufficiency or failure.

Chronic form:

This is Asthma chronic bronchitis emphysema syndrome (ABE Syndrome), also called as Chronic obstructive pulmonary disease COPD. There is persistent dyspnoea & wheeze of variable severity.

Treatment for status asthmaticus

It is a medical emergency and prompt hospitalization is essential in case of status asthmaticus

1. Bronchodilators like Adrenaline or aminophylline by parenteral administration
2. Hydrocortisone 100 mg i. v.
3. Oxygen therapy
4. Antibiotic if any infection

1.5

1.5



MAHARASHTRA STATE BOARD OF TECHNICAL EDUCATION

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WINTER- 16 EXAMINATION

Model Answer

Subject Code:

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