Q.1 A) Define [1 mark for each definition]

a) **Syrup:-** syrups are sweet, viscous, nearly saturated solution of sucrose in purified water .

b) **Gargles:-** Gargles are clear aqueous solutions used to prevent or treat throat infections. They are brought into intimate contact with the mucous membrane of the throat and are allowed to remain in contact with it for few seconds, before they are thrown out of the mouth.

B) [4 points (1/2 mark for each points]

Liniments		**Lotions**	
1	They are used for counter irritant, rubefacient, sooting or stimulating purpose	1	They are used for topical effect such as local cooling, soothing, protective & emollient effect
2	Applied with friction	2	Applied without friction
3	Turpentine liniment	3	Sulphur lotion
4	These are used for application to the unbroken skin.	4	Lotions can be applied on broken or inflamed skin.

C) [1 mark for definition & 1 mark for any example]

Therapeutic Incompatibility:- When the intensity or nature of action drug is different from that intended by prescriber, then such effects are termed as therapeutic incompatibility.

1) **Error in prescription:-** Error in prescription regarding dose, dosage from, strength or direction to use may lead to undesirable pharmacological effect.

   ℞ Codeine phosphate 0.5gm

   Prepare 10 powders

   This is an example of over dosage. The intention of the physician may be to prescribe 5mg and get prescribed 500mg in the prescription may be referred back to the prescriber.

   OR

2) **Wrong dose & dosage form:-** There are certain drugs which have quite similar names and there is always a danger of dispensing the wrong drug.
   For eg. Prednisone and Prednisolone.

OR

3) **Synergistic and antagonistic effect:-** When two interacting drugs have similar action and when administered together the resultant effects is the sum of individual effect, it is termed as addition.
For eg. Combination of Sympathomimetic drugs

Amphetamine Sulphate and ephedrine Sulphate-

When two drugs having opposing pharmacological effect are prescribed together antagonism occur

For eg. Co-administration of CNs stimulants with CNs depressants.

4) **Contraindications:-** Some drugs are not prescribed or not taken in specific physiological or pathological conditions.
For eg. Aspirin is contraindicated if peptic ulcers are present.

D) [1 mark for definition & 1 mark for part of prescription]

Prescription:- Prescription is written order from a registered medical practitioner or other properly licensed practioners, such as dentist, veterinarian etc to a pharmacist to compound and dispense a specific medication for the patients.

Parts of Prescriptions:-

a) Superscription- name, address, registration number of prescriber along with name, age address on patient. Also includes symbol Rx
b) Inscription
c) Subscription
d) Signature

E) White Vaseline is obtained from yellow soft paraffin by bleaching. White Vaseline is not used in ophthalmic ointment because it may contain small traces of bleaching agent which are left over after bleaching the yellow soft paraffin. Hence white Vaseline may cause irritation to eye.

(2 marks)

F) Each definition [1 mark for each definition]

Mascara:- Mascara is black pigmented preparation for application to the eye lashes or eyebrow to beautify the eyes. It is used to darken eyelashes & to increase their apparent length.

Hair Dye:- Hair dyes are used to change the natural colour of the hair. Hair colouration is mainly done to colour grey hair to black to restore youthful appearance or sometimes to decorate hair temporarily.

G) Step 1 – [1 mark]

Percentage given	Requied Percentage	Qty Taken
10%		2
8%	4%	2
2%		(10-4) + (8-4) 6 + 4 10 Parts

Step 2 [1 mark]

It is taken in 2:2:10 proportion in order to obtain 4% sulphur ointment.

Q.2 [3 ½ mark for each question]

A) Displacement value is defined as " The quantity of the drug which displaces one part of the base". (1 mark)

Problem Solution – (2 ½ marks)

Calculate for 3 extra suppositories

Weight of Cocoa butter for 1 Suppository = 15 grains

Weight of Cocoa butter for 15 Suppositories = 15 X 15 = 225 grains

Weight of iodoform for 1 Suppository = 3 grains

Weight of iodoform for 15 Suppositories = 15 X 3 = 45 grains

Displacement Value of iodoform = 4.0

The quantity of Cocoa butter required = Total amount of base – Total amount of drug / Displacement Value

= 225 grains - 45 / 4

= 225 - 11.25 = 213.75 grains

Formula for 15 Suppositories is

Iodoform	45 grains
Cocoa butter	213.75 grains

B) Test for identification for emulsion type

i) Dilution test

ii) Dye test (1 ½ mark)

iii) Conductivity test

iv) Fluorescence test

for Describing any of the test 2 mark

i) **Dilution Test:-** In this test the emulsion is diluted either with oil or water. If the emulsion is o/w type and it is diluted with water, it will remain stable as water is dispersion medium but if it is diluted with oil, it will break.
The w/o emulsion can be easily diluted with oil but breaks when diluted with water.

ii) **Dye Test:-** In this test, an emulsion is mixed with a water soluble dye (amaranth) and observed under the microscope. If the continuous phase appears red, it means emulsion is o/w type. If the dispersed globules appears red and continuous phase colorless, then it is w/o type. Similarly if an oil soluble dye (Scarlet red C or Sudan III) is added to an emulsion and continuous phase appears red, then it is w/o emulsion.

iii) **Conductivity Test:-** the principle of this test is that water is good conductor of electricity therefore in case of o/w emulsion, this test will be positive as water is the external phase. In this test, a pair of electrodes connected to electric bulb is dipped into a emulsion. If the emulsion is o/w type , the electric bulb glows.

iv) **Fluorescence Test:-** If an emulsion on exposure to ultra-violet radiation shows continuous fluorescence under micro scope, the it is w/o type and if it shows only droplets fluorescence, then it is o/w type.

C) Emulsifying agent assists in the formation of emulsion by forming following interfacial films

a) Formation of rigid interfacial film (mechanical barrier of coalescence)

b) Formation of electrical double layer – (electrical barrier to approach of particles)

a) The dispersed globules are known to acquire an electric charge during the process of emulsification. The globules gather two charged layers around themselves called Helmholtz double layer. The electrical double layer consists of stern layer i.e. the layer of charged ions on the surface and the diffuse layer consisting of charged ions distributed upto varying distances around stern layer. The potential produced by the double layer creates a repulsive effect between the oil droplets and thus hinder coalescence.

b) The surface active agents tend to concentrate at interfaces and the emulsifiers are adsorbed at oil – water interfaces as monomolecular films. If the concentration of the emulsifier is high enough, it forms a rigid film between the immiscible phases which acts as a mechanical barrier to both adhesion & coalescence of emulsion droplets.

D) Particulate matter is defined as extraneous, mobile, undissolved substances other than gas

bubbles, unintentionally persent in injections – (1 mark)

Sources of particulate matter – (1 ½ mark)

a) Intrinsic Contamination:- the materials which are originally present in parenteral solution are known as intrinsic contamination eg. Barium ion leach in parenteral product which may react with sulphur ion in the product to form barium sulphate crystals.
b) Extrinsic Contamination:- It is the material which comes from environment and contaminate product eg. Shedding of material from the body & clothes of the person, ceiling, wall, furniture of the room. eg. cotton, glass, rubber, plastics, tissue, insect, fragments, dust, paper etc.

Methods for detection of particulate contamination

a) Visual Method
b) Coulter Counter Method (1 Mark)
c) Filtration Method
d) Light Blockage Method

E) 1 mark for definition, ½ mark for types of jellies & 1 mark for formulation & storage.

Jellies:- Jellies are transparent or translucent non-greasy, semisolid preparation for external application to the skin or mucous membrane. Topically gels are used on skin & mucous membrane, to eyes & used cosmetically & as denitrifies, skin & hair care preparations.

Types of Gels:-

1) Medicated Jellies:- these are chiefly used on mucous membrane & skin for their spermicidal, local anaesthetic & antiseptic properties. These jellies contain sufficient water. After evaporation of water, jellies provide a local cooling effect & residered films even protection.
2) Lubricating jellies:- These are used a lubricating agent for catheters, rubber gloves, thermometers. These jellies should be sterile.
3) Miscellaneous jellies:- these are used as vehicle for allergens during sensitivity testing or as electro cardiography jelly applied on electrode to reduce electrical resistance between patients skin and the electrode.

Formulation of jellies:_ Contains jelling agents like Tragacanth, sodium alginate, pectin, starch, gelatin.

It also contains preservatives like methyl p-hydroxybenzoate, chlorocresed phenyl mercuric nitrate.

Jellies are stored in well filled, well closed container to minimize the evaporation of water. Jellies are stored in cool place to prevent drying out.

OR

[HLB] – Griffin developed a system to assists making systematic decisions about the amounts and types of surfactants needed in stable emulsion. The system is called the HLB System (hydrophillic – Lipophilic Balance)

System and has an arbitrary scale of 1-18 HLB numbers are experimentally determined for different emulsifiers in laboratory.

An emulsifier having a low HLB number indicates that the number of hydrophilic groups present in the molecule is less and it has a lipophillic character. For eg. spans generally have low HLB number & they are oil soluble. Because of their oil soluble character, they favours w/o emulsion.

A higher HLB number indicated that the emulsion has a large number of hydrophilic group & hence it is hydrophilic in character. Therefore it favours o/w emulsion.

HLB Range	Application
4-6	w/o emulsifying Agents
8-18	o/w Emulsifying agents

F) Soluble barbitone (3 ½ marks)

Ammonium bromide

Water

Incompatibility:- In this prescription, the prescriber has prescribed phenobarbitone sodium along with ammonium bromide. Ammonium bromide will react with phenobarbitone sodium leading to precipitation of barbitone which is disfusable in nature. to dispense a clear mixture for the patient. This can be possible by replacing the chemically equivalent amount of ammonium bromide with sodium or potassium bromide because the sedative action of these three bromides is the same.

WINTER – 12 EXAMINATION

Subject Code : **0811** **Model Answer** Page No : 08/ N

Q.3 A) Bacterial endotoxin test is used for pyrogen testing as per USP. (3 ½ Marks)

An extract from the blood cells of the horse shoe crab contains and enzyme and protein system that coagulates in the presence of low level of lipopolysaccharides. This discovery led to the development of the limulus ameboytes lysat LAL test for the presence of bacterial endotoxin. The bacterial endotoxin test USP uses LAL test as it is considered generally more sensitive to endotoxin then the rabbit test.

The advantage of this test is that it is more sensitive test then the rabbit test use for detection of pyrogen.

B) They are type of chemical incompatibilities

Tolerated in tolerated incompatibilities the chemical interaction can be minimized by changing the order of mixing or mixing the solution in the diluted form but no alteration is made in formulation .

Any one example of tolerated incompatibility (1 ½ Marks)

Adjusted:- In adjusted incompatibility the chemical interaction can be prevented by addition or substitution of one of the reactant .

e.g. caffine citrate substituted with caffine in sodium salicylate & caffine mixture.

C) [any one method 3 ½ Marks]

Suspension containing ppt forming liquid eg.compound benzon tincture when this liquid are diluted with water they form induffisible ppt of resineous matter. Which may stick to the side of the bottle to redisperse this ppt tragacanth mucilage or tragacanth powder is used for preparing suspension.

1st Method:- When tragacanth Powder is used

1) Finally powder diffusible, indiffusible solid and mixed them with tragacanth powder
2) Measure half of the vehicle and add in small amount with constant tituration, till there is formation of cream.
3) Measure the ppt forming liquid in a dry measuring cylinder and add this liquid little by little in the center of the cream with rapid stirring.
4) Dissolve if any soluable ingredient is present in the vehicle and add this solution to the suspension with constant tituration.
5) Examine the contents for foreign particles present filter through muslin cloth.
6) Transfer to suitable container and label

2nd Method:- Tragacanth mucilage is used when vehicle is water or chloroform water.

1) Mixed tragacanth mucilage with equal volume of vehicle.
2) Measure PPT forming liquid in dry cylinder and add to the above mixture with constant tituration.
3) Dissolve the remaining solid with ¼ of the mixture and add to the above suspension with constant tituration.

D) [½ marks for Each Points]

	Flocculated S		Non Flocculated Suspension
1	Particles form loose aggregates and form a net work like structure	1	Particle exist as separate entities.
2	The rate of sedimentation is high	2	The rate of sedimentation is slow.
3	Sediment is rapidly formed	3	Sediment is slowly formed.
4	Sediment is easy to redisperse.	4	Sediment is difficult to redisperse.
5	Sediment is loosely packed and does not form a hard cake.	5	Sediment is very closely packed and a hard cake is formed.
6	Supernatent liquid is clear.	6	Supernatent liquid is not clear.
7	The floccules stick to the sides of the bottle.	7	The floccules do not stick to the sides of the bottle.
8	Suspension is not pleasing in appearance.	8	Suspension is pleasing in appearance.

E) [1/2 Mark for each Points]

Advantages of parental products

1) Rapid onset of action.
2) Immediate therapeutic action is possible.
3) Each dose can be administered accurately.
4) When oral route is not possible in un conscious and non co-operative patient.
5) When drugs get inactivated in GIT tract
6) Prolong action can be possible by this route.
7) Absorption of the drug faster compare to other route.

F) Mol wt of Nacl = 58.5

Mol wt of Dextrose = 180

W = 0.3M/N (1 Marks for the formula)

W= 1.2 i.e. 1.2 grams per liter

Instead of 0.3 c is used which represent effective molar concentration (EMC) of the Medicament $0.12 = \frac{C \times 58.5}{2}$

C = 0.041 (1 mark)

Effective Molar concentration of adjusting substance

0.3 - 0.041 = 0.259

Required concentration of dextrose = 0.259M

= 0.259 X 180 = 46.62 gram per liter i.e. 4.66% (1 ½ Marks)

Q.4 A) Epilation :- Epilation means the uprooting of intact hair mechanically by plucking or embedding in adherent material such as wax rosin etc. It is a painful process and may cause skin damage. The formulation of epilatory generally contains rosin bees wax along with mineral oil or vegetable oil, cooling agent local anesthetic and antibacterial agent (2 marks)

Depilation:- When the hair is removed by chemical matter without injury to the skin it is known as depilation. The chemical most commonly used for this purpose are sulphides of barium, calcium and strontium calcium thioglycerol and calcium thioglycolate are also used. (1 ½ Marks)

B) Powder is a mixture of finelly divided drug or chemical in a dry form .There are solid dosage form of medicament meant for internal & external use.

Classifications:-

1) Bulk powder for internal use. E.g. compd rubarb powder.
2) Bulk powder for external use
   a) Dusting powder
   b) Insufflations
   c) Snuffs
   d) Dentrifices.
3) Simple powder e.g. Aspirin powder & compound powder e.g. APC Powder , Aspirin, Paracetamol & caffine
4) Powder enclosed in cachets and capsules e.g. sodium amino salicylates catches.
5) Compressed powder e.g. Moulded tablets.

C) One Ounce (Apothecaries)=480 grains

1 Pound=5760 grains

1 pound=12 ounce

5760\12= 1ounce

480grains= 1ounce

D) 1) Mix kaolin , boric acid with glycerine to form smooth paste in china dish.

2) Heat this mixture on a sand bath at 120^{o}C for 1 hour with occasional shaking

3) Dissolve thymol in methyl salicylate and peppermint oil

4) Add this solution to the above mixture

5) Transfer the preparation to the container. (2 1\2 marks)

Poultice is applied to the affected part after heating it in a china dish with occasional stirring, until the the heat is tolerated at the back of the hand, and than the poultice is spread in form of film on dressing material and applied over the affected part.(1marks)

E) Factors affecting dose of a drug:

1) Age

2) Sex

3) Body Weight

4) Route of administration

5) Time of Administration

6) Environmental Factors

7) Emotional factors

8) Presence of disease

9) Accumalation

10) Additive effect

11) Synergism

12) Antagonism

13) Idiosyncrasy

14) Tolerance

15) Tachyphylaxis

16) Metabolic disturbances (2 ½ Marks)

Age:- The Pharmacokinetic of many drugs changes with age so while determining the dose of drug the age of the individual is of great significance (any other factor can be explain by the students)

(1 Mark)

F) Given freezing point of 1% procaine hydrochloride = -0.122^{o} C

% w/v of adjusting substance needed = $\frac{0.52 - a}{b}$ (1 Mark)

% of w/v of procaine hydrochloride require = $\frac{0.52 - 0.00}{0.122}$ (2 ½ Marks)

= 4.26% w/v

Q.5 [3.5 marks for each question]

A) General method of preparation of soap- glycerine or cocoa butter suppositories:-

Suppositories are prepared by following methods:-

i) Rolling Method
ii) Hot Process or fusion method (1/2 mark)
iii) Cold compression method

Hot process or Fusion method is commonly used method for Preparation of suppositories.

Method of preparation:- (3 marks)

i) Thoroughly Clean & lubricate the mould with suitable lubricant. Keep it on ice in inverted position to cool & drain excess lubricant.
ii) Heat the china dish over water bath. To this add required qty. of cocoa butter after taking into account the displacement value of medicament. & calculating for two extra suppositories for unavoidable wastage.
iii) Remove the dish from water bath, when 2/3 rd of base melts & stir throughly until whole mass melts. To avoid overheating.
iv) Place the weighed qty of medicament on an ointment tile. Pour about half of melted base over it. Mix it thoroughly with spatula.
v) Transfer the mixed mass again to china dish, mix it throughly & warm china dish over water bath for few seconds with constant stirring.
vi) Pour the melted mass into the cavities of suppository mould. Kept over ice. Fill each cavity to over flowing, to prevent the formation of holes in suppositories.
vii) Remove excess of mass with the help of sharp knife.
viii) Open the mould & remove suppositories.
ix) Wipe off the suppository lightly with a clean cloth or filter paper.
x) Wrap the individual suppository in a wax paper.

B) [7 point (1/2 mark for each point)]

o/w		w/o	
1	In this type, oil is in dispersed phase & water is in continous phase.	1	In this type of emulsion water is in dispersed phase & oil is in continous phase.
2	These type of emulsion are preferred for internal use	2	Mainly used externally as lotions or creams.
3	Emulsifying agents are used gum acacia, tregacanth,methyl cellulose, saponins, synthetic subs & soaps from monovalent bases like Na^+ , K^+, NH_4^+	3	Wool fat, resins, bees wax, & soaps from divalent bases like Ca^{++}
4	Dilution Test:- Emulsion diluted with water result:- Emulsion remains stable	4	Result:- Emulusion breaks on its dilution with water
5	Dye Test:- Emulusion scarlet red dye result:- Dispersed globules appear 'red' & ground is "Colourless"	5	Result :- Disperse globules appear "Colourless" & ground is "red"
6	Conductivity Test:- This type of emulusion shows bulb glowing on passing the electric current.	6	Bulb doesn't glow because oil is in continouse phase
7	Fluorescense Test:- droplets shows fluorscence when U.V. rays passes.	7	The continuous shows fluorscence when U.V. rays passes.

C) Dentifrices:- Defination (1 Mark)

Dentifrices are the preparation meant to be applied to the teeth with a tooth brush for purpose of cleaning the accessible surface of the teeth.

Formulation additivies used in dentifrices. (2.5 Marks)

1) Abrasives:- Used to remove debris & residual strains from teeth surface without damaging it, also know as polishing agent.

e.g. Precipitated $CaCo_3$

Calcium Phosphate (Any 2 e.g. required)

Magnesium Trisilicate

Hydrated alumina

2) Binders:- Used to keep the solids & liquids in united form to maintain consistency.
e.g. Gum Tregacanth

Na alginate

Methyl Cellulose.

3) Detergents:- These are surface active agents, used to enhance the action of abrasives i.e. they lowers the surface tension, penetrate & loosen surface deposits & emulsify the debris which can easily removes from tooth surface.
e.g. Sodium Lauryl Sulphate

Sodium alleyl sulphosuccinate

4) Flavouring agent:- Used to impart flavour to the prepartion.
e.g. Peppermint oil

Winter green

Cinnamon oil

Eucalyptus oil

5) Humectant:- Used in tooth paste to retain moisture & will not allow the paste to become dry.
e.g. Glycerin

Sorbitol

Propelyene glycol etc.

6) Preservatives:- Used to prevent the growth of bacteria,
e.g. Metgyl paraben

Propyl paraben

7) Sweetening Agent:- Used to impart sweet taste to the preparation.
e.g. Saccharin

8) Therapeutic Agent:- used to check dental diseases & to remove bad smell.
e.g. Antibiotics

Fluorides

Chlorophyll

Essential oil etc.

D) Ideal properties of eye drops:-

1) They should be sterile

2) They should be iso-osmotic with lacrymal secretions. (1 ½ Marks)

3) They should be free from foreign particles, Fibres & Filaments.

4) They should have almost neutral PH

5) They should be preserved with a suitable bactercides.

6) They should remain stable during its storage.

Containers:-

1) Eye drops should be packed in neutral glass containers or in a suitable plastic containers.
2) The bottle must confirm to limit test for alkalinity of glass. (1 ½ Marks)
3) Now –a- days neutral glass bottles having capacity of 4 to 8 ml are used.
4) These days plastic squeeze bottles are used which are having rigid plastic cap & polythene friction plug containing baffle that produces uniform drops which are very handy.
5) These bottles are sterilized by gaseous sterilization method.

Labelling:-

Eye drops should be labeled as- (½ marks)

" for External use only" along with storage condition."

E) Characteristics of water soluble bases:- (1 mark)

i) These are commonly known as "greaseless ointment bases"

ii) They consist of water soluble ingredients such as PEG polymers which are known as "Carbowaxes".

iii)Depending upon the molecular weight, carbowaxes are available in different consistencies i.e. liq., semisolid or solid.

iv)Their mol.wt varies from 200 to 8000. By mixing different carbowaxes, ointments of varying consistencies can be obtained. e.g. tregacanth, Gelatin, pectin, cellulose derivatives, bentonite, sodium alginate.

Oleaginous bases:-

i) These bases consist of water insoluable hydrocarbons, vegetable oils, fats & waxes.
ii) The oleaginous bases are losing their importance now a days for the following reasons:-
    1) They are greasy
    2) They are sticky & difficult to remove both from skin & clothing
    3) They retain body heat which may produce an uncomfortable feeling of warmth.
    4) They do not help in the absorption of medicaments
    5) They prevent drainage on oozing areas of also prevent evaporation of culaneous secretions along with perspiration.

    e.g. Hard paraffin
    Soft paraffin
    Liquid paraffin

F) This preption is made by using Dry Gum Method.

1) 1st Calculate the formula for primary emulsion.

Cod liver oil is a fixed oil (1 Mark)

The ratio for fixed oil is 4:2:1

Cod liver oil –10ml

Cinnamon water -- 5ml

Acacia Powder -- 2.5gm

2) Calculation:-

Approximate vol. of primary emulsion:- 17.5 ml (1 Mark)

Total vol. of emulsion :- 30 ml

Vol. of water required (30-17.5) = 12.5 ml

3)1st prepare primary emulsion:- (1 Mark)

i) Measure the required qty of oil in a dry measure & transfer it into a dry mortor.

ii) Add the calculated qty. of gum acacia into it & triturate rapidly to form a uniform mixture.

iii) Add the required qty. of cinnamon water & triturate till a clicking sound is produced.

4) Dilute the syrup to remaining water & dissolve the ferric ammonium citrate in it & mix with primary emulsion. (½ Mark)

5) Dispense & Label it.

OR

F) Various types of shampoo:- (1 mark)

1) Medical dandruff shampoos

2) Powder shampoos

3) clear liquid shampoos

4) Gel liquid shampoos

5) Soap liquid shampoos

6) Cream or paste shampoos

7) Liquid cream or lotion shampoos

8) Baby shampoos

9) Aerosol shampoos

Additives used in shampoos:- (2.5 marks)

1) Conditioning Agent:- used to lubricate the hair & improve the texture of hair & it reduces the fluffiness & make the hair soft & shiny.
   e.g. Lotion & its derivatives

   Glycerin

   PG

2) Thickening Agents:- Use to increase the viscosity of shampoo & provide desired consistency.
   e.g. Polyvinyl alcohol

   Methyl cellulose

   Na Alginate

3) Solubilizig Agent:- Used to solubilize poorly soluble subs.
   e.g. ethyl alcohol, glycerol, PG.

4) Opacifying Agents:- used to make shampoo opaque.

   e.g. glycerol, glyceryl stearate, stearyl alcohol.

5) Preservatives:- used to preserve the shampoo ageinst bacteria or mould.

   e.g. Methyl Paraben

   Propyl Paraben

Q.6 a) 1) Young's Formula

Dose for Child = Age in Yrs / Age in Yrs + 12 X Adult dose (1 Mark)

= 10 / 10+12 X 1500

= 10 / 22 X 1500 (1 Mark)

= 681.8 mg

Result:- 681.8 mg of pyrazinamide required for a child of 10 yrs.(½ Mark)

2) Fried's Formula:-

Child dose = Age (Months) / 150 X adult dose

Fried's formula is only applicable for infants.

The dose of 10 yr old child cann't be applicable (1 mark)

b) Catchets:-

Defination:- Catchets are the solid Unit dosage form of drugs. (½ mark)

These are moulded from rice paper, used to enclose nauseous or disagreeable Powders.

Advantages:- (1 ½ marks)

1) They can made easily because no complicated machinery is required.
2) They disintegrate quickly in the stomach
3) The drug can be easily dispensed in catchets.
4) Large dose of drug can be swallowed by using catchets.

Disadvantages:- (1 ½ marks)

1) They must be softened before swallowing
2) They are easily damaged
3) They cann't protect the enclosed drug from light & moisture
4) The shell of catchets are fragile, so the drug cann't be compressed in catchets
5) Not suitable for filling the drug by large scale machinery.
6) They occupy more space than the corresponding sizes of capsules & tablets.

C) TPN:- It is a total parentral Nutrition

Defination:- intravenous adm^{n} of calories, Nitrogen & other nutrients in sufficient qty to produce tissue synthesis of anabolism is called as parentral nutrition. (1 marks)

i) TPN sol^{n} consist of mixt of amino acid, lipid emulsion electrolytes, & vitamins with trace elements.
ii) These sol^{n}s are administered slowly through a peripheral rein, where it is diluted by large vol. of blood so as to minimize the risk of tissue or cell damage.
iii) TPN are generally administered to avoid multiple injections of nutrition required by patients by IV route.
iv) TPN is given to fulfill the nutritional requirements in pre-operative & post operative conditions. (2.5 Marks)

OR

C) Sterility Test for parentrals:- (1 mark)

i) All the parentral preparation must confirm to the test for sterility as prescribed in pharmacopeia.

ii) Test for sterity is intended for detecting the presence of viable forms of bacteria, fungi & yeast in preparation.

Principal:- the test is based on the principle that if bacteria or fungi are places in a medium which provides nutritive material & water & kept at favourable temp. the organism will grow & their presence can be indicated by a turbidity. (1 mark)

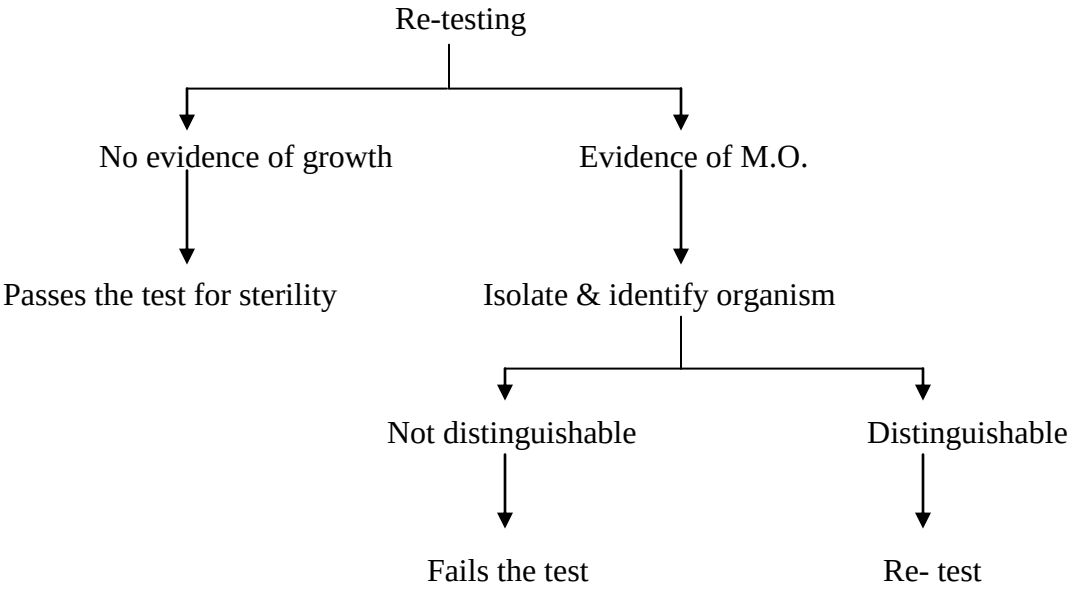
The test for sterility carried out by (1.5 Mark any one have to be explained)

1) Membrance Filtration Method
2) Direct Innoculate Method

1) Membrane Filtration Method:-
   - i) It involves the filtration of sample under test through a membrance filter having porosity of 0.45 u & dia. 47 mm
   - ii) After filtrat^{n}, membrance is removed aseptically & divided into 2 parts.
   - iii) The first part is transferred into 100ml of culture media meant for fungi & incubated at 20^{o} to 25^{o}C for NLT 7 days.
   - iv) The other half part is transferred into 100ml of fluid thioglycollate medium & incubated at 30 to 35^{o}C for NLT 7 days.
   - v) Observe the growth in media.
2) Direct Innoculat^{n} Method:-
   - i) In this method the specified qty of sample under test is drawn aspetically from container & transferred into vessel of culture medium.
   - ii) Mix the liq. With the medium & incubate for NLT 14 days.
   - iii) Observe the growth of micro-organism in medium.

Observation & Result:-

i) No evidence of growth – passes the test for sterility.
ii) Evidence of growth –



D) Definaition:-

Antiperspirants:- these are those substances which inhibit the flow of perspiration (1 mark)

Deodrants:- these are those subs which inhibit the formation of bad odour in perspiration by suppressing the growth of bacteria or mask the unpleasent odour. (1 mark)

The bad odour which is emitted from the human body causes no. of problems. Any substance which is used to overcome this bad smell known as antiperspirants & deodorants.

e.g. Aluminium chlorohydrate

Antiperspirants contain subs having astringent action& on reducing with skin protein it causes co-agulation which is accompanied by a swelling at the opening of sweat glands. This helps in blocking the openings of sweat glands. Thus reduces the sweat.

Qualities of an ideal antiperspirant:- (1.5 marks)

1) It should be non-toxic
2) It should be non-irritant
3) It should have PHG between 4 to 4.5
4) It should be not have effect on fabrics
5) It should possess sufficient astringent property.

E) 1 in 500 solution = 1 X 100 / 500 % = 0.2%

35 gr, in 8 fl. oz – 1% w/v solution ------- (1 Mark)

35 X 0.2 gr in 8 fl. Oz --- 0.2% w/v solution

35 X 0.2 X 80 / 8 gr in 8 fl.oz --- 0.2% w/v solution in 80 fl.oz

70 gr in 80 fl.oz will make 0.25 w/v solution
70 gr must be present in every table spoonful of solution. `(1 mark)

(1 table spoonful = 15 ml)

1 table spoonful contains 70 grs.

8 oz contains = 8 X 30 X 70/ 15

= 1120 gr

So 1120 gr is dissolved in water to produce 80z --- (1.5 marks)

F) (½ Mark each)

i) Hora somni :- Every hour

ii) secundum Artem:- In pharmaceutically correct method

iii) Colchleare amplum – One tablespoonful
iv) Draught – Whole dose to be taken at one time
v) One scruple – 20 gr
vi) One wine glassful – 60 ml
vii) 1 quart – 40 fl.oz