Section-A

(I) Short Notes

Ans1→ It is a pharmaceutical process that throughly mixes a small amt of API with the large amount of excipents. This technique ensures equal distribution of drug throughout the resulting compound.

Ans2→ Hygroscopic powder - These are those powders which absorbs moisture from the atmosphere are called hygroscopic powder
eg - ammonium chloride, pepsin, NaCl etc.

Ans3→ Effervesenet powders :- These are those powders which loses water to form a lower hydrate or become anhydrous is termed as effervesant These are present in crystal form. Ex - Sodium corbomate.

Ans4→ These are those powders which are meant to introduce into body cavities (like ear, nose, vagina, etc) with the help of device named insufflater. These powders are called insufflation
ex :- Nitrous oxide.

Ans5→ It is the mixture of two solid powders in which their melting pt. is reduced due to mixing and the mixture convert into liquid at room temperature eg Camphor & thymol.

Ans6→ One example therapeutic incompatibity :-
Tetracyline + Milk are incompatible.

Section-B

II Short Essay

Ans7→ These are those techniques which are used to increase the solubility of any drug / solute. If their sobulity is less in aqueous medium. Various technique are given below :-

→ pH Change :- This may be done either by salt formation or addition of buffer to the formulation.

→ Co solvent :- This is used to dissolve poorly soluble drugs in a liquid phase by the help of it

→ Particle size reduction :- Particle size ~~reduction~~ is inversely proportional to solubility. less the particle size, more soluble is the drug.

→

→ Emusifing agent :- These are added two decrease the superficial tension between the two layer of emulsion.

→ Suspending agent :- These are added to increase the solubility of the two phase of in suspension.

→ Complexations :- it is the process of association of 2 or more molecules to form non-bonded entity. Ex Chelates - EDTA

Ans8 → Suspending agents are also called thickening agents are used to stabilize suspension are a hydrophillic colloid substance that spontaneously form colloidal dispersion with water because of an affinity dispersion with the water between the dispersed particles and dispersed medium.
They help in lowering the sedimentation rate of particles in the suspension
The sedimentation rate is slowed down by increasing viscosity of liquid vehicles and slowing down settling in accordance to stokes law.
They prevent cracking at the base of suspension. Majority used as excipients to help active pharmaceutical ingredients stay suspended in

formulations Ex - Bentonite, tragacanth, Kaolin.
These are of 3 types.
① polysaccharide - Acacia, Tragacanth, starch.
② Inorganic salts - Kaolin, Bentenotite.
③ Synthetic compound - Carboners, Colloidal silicon dioxide.

Ans 9→ Excipients are used in preparation of drug dosage form to make bulk. These have little or no theareupentic value but they are used in the preparation and compounding of several pharmaceutical formulations.

1. Sweetening agents
2. Vehicle
3. Anti oxidants
4. Buffers
5. Flowouring agents
6. Preservative
7. Colouring agents
8. Co-solvents.

1. Sweetening agents :- These are used to mask the unpleasant taste of the drug eg - Sucrose.

2. Vehicle :- These are used as solvents in preparation of liquid dosage form. eg - water.

3. Anti-oxidants :- These are added to prevent the oxidation of the formulation during its shelf life.
eg - propionic acid.

4. Buffer :- These are added to prevent pH change
eg acid / basic buffer.

5. Flavouring agents:- These are added to ~~form~~ give colour to the formulation to make it acceptable to the consumer and give it is a sweet taste. eg vanilla.

6. Colouring agents :- These are added to increase the accept may by the consumer by giving the colour to the formulation
Ex amaranth.

7. Preservative :- These are added to increase the shelf life
Ex chloroform

8. Co-solvent :- These are added to increase the solubility of API into the excipient
Ex - propylene glycol.

Section-C

II Long Essay

Ans10:- Powders are pharmaceutical preparation of finely divided solid dry particles, containing one or more active ingredients with or without excipients. They may be intended for internal or external use.

Classification of powders :-
- Based on particle size
- Based on uses.
- Based on physical form.

Based on particle size
- Very coarse powder → Particles passes through sieve no. 8
- Coarse powder → Particles passes through sieve no. 20
- Moderately coarse powder → particles passes through Sieve no. 40
- Fine Powder → Particles passes through sieve no. 60
- Very fine powder → Particles passes through sieve no. 80.

Based on uses

→ Internal use
→ External use.

- Internal use :- It consist of drugs in the form of powder intended to be swallowed directly or with water. These can be taken orally.
  - Simple powder
  - Compound powder.

- Simple powder :- These powders that contain only 1 ingredients either in crystalline or amorphous form.

- Compound powder :- These powder that contain two or more than two ingredients (API).

- External use :- Powders for external use are pharmaceutical preparation consisting of solid, loose, dry particles of varying degree of fineness.
  → Dusting powders
  → Surgical powders
  → Dentifrices.

- Dusting Powder :- These powder are very fine, free flowing powder meant for application to unbroken skin. A good dusting powder includes
  - ease of flow
  - Non-irritibility
  - Good stability
  - Surgical Powder :- These are also a type of dusting powder consist of sterile product intended to be used on the open wounds like burns.
  - Dentifrices :- These are used for the cleaning of tooth / tooth cleaning powders.

Based on Physical Form:-

→ Bulk powders
→ Divided powders.

→ Bulk Powders:- These powders refer to a mixture of materials packed into properly designed bulk Containers such as light, wide-mouthed glass/plastic bottle and used internal or external.

→ Divided powders:- These powders are single doses of powered drug mixtures. in divided powders each dose of medicament is separately packed and dispensed to patient. accurate dose is their.

Other Powders:-

→ Effervescent powder:- These powders are the combination of citric acid, tartaric acid and sodium-bicarbonate. all these are dissolved in water and carbon-dioxide is released.

→ Efflorescent powder:- These are crystallized powders that contains water of hydration or crystallization and when they exposed to atmosphere. they partially or completely releases its water.

→ Hygroscopic powder:- These are those which absorb moisture from the atmosphere, although they absorb moisture but do not convert into liquid.

→ Deliquescent powder:- These are those powders that absorb moisture to such a great extent that they convert into liquid form. Deliquescent powders have a very high affinity towards water.

Ans11⇒ Incompatibilities occurs as a result of mixing of two or more antagonistic substances and an undesirable product is formed which may affect the safety, efficacy and the appearance of the preparation.

Types

→ Chemical Incompatibility
→ Physical Incompatibility
→ Therapeutical Incompatibity

→ Chemical Incompatibility :- result as a reaction of ingredients to form a toxic or inactive product outside the body.

By oxidation
Reduction
Hydrolysis
Combination Reaction

Ex - Colour Change, evolution of CO_2, Acid-Base reaction precipitate.

→ Physical Incompatility :- Two or more Ingredients added physical changes such as colour change, state change, viscosity change.

Immiscibility.
Insolubility
Precipitation
Liquefication.

→ Therapeutical incompatility :- These occur after consumption inside the body This occur due to

→ Error in dosage
→ wrong dose.
→ Contra indicated drugs
→ Synergistic & Antagonistic
→ Drug Interaction
eg - Tetracycline should not be taken with milk.