

## Suggested Exam Questions

1. A powder population in which the mode, mean and median particle size are equal is said to be:
  - a. Monosized.
  - b. Normally distributed.**
  - c. Positively skewed.
  - d. Negatively skewed.
2. Concerning the fracture behavior of powders, choose the correct statement:
  - a. Plastic materials fracture easily.
  - b. Elastic materials fracture easily.
  - c. Brittle materials fracture easily.**
  - d. Tough materials fracture easily.
3. The factor of greatest importance in the operation of the ball mill is:
  - a. The speed of rotation.**
  - b. The amount of material in a mill.
  - c. The diameter of the balls.
  - d. The diameter of the mill.
4. A mix where the probability of selecting a particular type of particle is the same at all positions in the mix, and is equal to the proportion of such particles in the total mix is called:
  - a. Perfect mix.
  - b. Random mix.**
  - c. Estimated acceptable standard deviation mix.
  - d. Ideal mix.
5. Which of the following is not a consequence of bad powder flowability:
  - a. Variation in tablet weight.
  - b. Variation in drug content.
  - c. Enhanced segregation.**
  - d. Capping or lamination of tablets.
6. The following equipment can be used for mixing, granulation and drying:
  - a. Nauta mixer.
  - b. Spray drier.
  - c. Fluidized bed drier**
  - d. High speed mixer granulator.
7. The fowling drier depends on the principle of lyophilization:
  - a. Fluidized bed drier.
  - b. Spray drier
  - c. Microwave drier.
  - d. Freeze drier.**
8. The equilibrium moisture content of a solid:
  - a. Is the unbound easily removable water associated with the solid.
  - b. Can be removed be extended drying time
  - c. Can be removed by reducing the relative humidity of the ambient air.**

- d. Can be removed by increasing the drying temperature.
9. Concerning the flowability of powders:
    - a. Cohesive powders have bad flow and low values of angle of repose.
    - b. Spherical particles have bad flow compared to irregularly shaped particles.
    - c. **Coarser particles have lower specific surface area than finer particles thus their flow is better.**
    - d. The packing geometry of the particles does not affect the flow characteristic.
  10. The powder flow can be improved by all of the following except:
    - a. Granulation.
    - b. Addition of glidants.
    - c. Using spray dried excipients
    - d. **Increasing moisture content.**
  11. Rationale for granulation of powders include all of the following except:
    - a. To prevent segregation of the constituents of the powder mix
    - b. To improve the flow properties of the mix
    - c. To improve the compaction characteristics of the mix
    - d. **To decrease the bulk density of the powder.**
  12. A binder solution is used in the production of tablets via:
    - a. Direct compaction.
    - b. Dry granulation.
    - c. **Wet granulation.**
    - d. b and c.
  13. The main bonding mechanism in the dried granule produced by wet granulation is:
    - a. Interfacial forces in mobile liquid films within the granules.
    - b. **Solid bridges of the crystallized binder.**
    - c. Adhesion and cohesion forces in the immobile liquid films.
    - d. Mechanical Interlocking.
  14. The granulation of powders will produce:
    - a. **Narrow size distribution range of larger sizes.**
    - b. Narrow size distribution range of smaller sizes.
    - c. Wide size distribution range of larger sizes.
    - d. Wide size distribution range of smaller sizes.
  15. The quality attributes a tablet include:
    - a. The Mechanical strength.
    - b. The content uniformity,
    - c. The release of the drug in terms of tablet disintegration and drug dissolution.
    - d. **All of the above.**
  16. The following type(s) of tablet excipient is mismatched with its function:
    - a. Magnesium stearate/ lubricant.
    - b. Lactose, Sucrose/ filler.
    - c. Starch, Na carboxymethylcellulose/ disintegrant.

- d. Colloidal silica, Talc/ binder.**
17. The following are means used to achieve a slow, controlled release of the drug from tablets:
- a. Dissolution-controlled release systems and Erosion-controlled release systems.
  - b. Osmosis-controlled release systems and Ion exchange control
  - c. Diffusion-controlled release systems ( Matrix or reservoir)
  - d. All of the above.**
18. Which of the following types of tablets must be swallowed intact:
- a. Disintegrating tablets.
  - b. Extended release and enteric coated tablets.**
  - c. Lozenges and conventional tablets.
  - d. Tablets with nonfunctional coatings.
19. Which of the following is a water-insoluble polymer:
- a. Hydroxypropyl methylcellulose.**
  - b. Ethylcellulose.
  - c. Ammonio methacrylate copolymers.
  - d. Polyvinylpyrrolidone.
20. Gelatin is the primary constituent of hard and soft gelatin capsules. It is obtained:
- a. Synthetically.
  - b. Naturally from hydrolysis of collagen which is obtained from animals skins and bones.**
  - c. Naturally from hydrolysis of collagen which is obtained from plant origin.
  - d. Naturally from hydrolysis of collagen which is obtained from seaweeds.