

Course No:  
Course Title: 1 صيدلانيات  
Date: 21/01/2017  
No. of Questions: (6)  
Time: 1hours  
Using Calculator (No)

University of Palestine



First Midterm Exam  
2016/2017  
Total Grade:

Instructor Name: \_\_\_\_\_  
Student No.: \_\_\_\_\_  
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College Name: \_\_\_\_\_  
Dep. / Specialist: \_\_\_\_\_  
Using Dictionary (No)

**Question One: 1 5-Marks.**  
**25 minutes**

ممنوع الكتابة بالقلم الرصاص والاحمر

**True or False: Answer with (T) or(F) on the following:**

- 1- Syrups have high solvent capacity for water-soluble drugs because the hydrogen bonding between sucrose and water is very weak.
- 2- Mouth washes are solutions that are used to clean the mouth or treat diseases of the oral mucous membrane.
- 3- When zeta potential is high ( $< 25\text{mV}$ ) interparticulate attraction forces exceed the repulsive forces. As a result, the dispersion is flocculated and relatively stable to collision and subsequent aggregation.
- 4- Purposes of suspension are sustaining effect, stability, taste.
- 5- Ointment is solid preparation intended for external and internal use.
- 6- Purposes of emulsions, increase drug solubility, and increase drug stability.
- 7- Aerosol formulation and packaging components permit a restricted range of product to be dispersed as spray, foams, or semisolids.
- 8- Aerosol products are pressurized dosage forms, they are designed to deliver drug systemically or topically with the aid of a liquefied or propelled gas.
- 9- MDIs use special method to regulate the amount of drug that is dispensed by GI (gastrointestinal) administration.
- 10- Advantages of aerosol products includes the convenience of push-button dispensing of medication and the stability afforded by a closed.
- 11- Nonionic synthetic agents are nonresistant to the addition of acids and electrolytes.
- 12- A suppository is a solid or semisolid mass intended to be inserted into body orifices (rectum, vagina, and urethra). After it is inserted, a suppository either melts at body temperature or disperses into the aqueous secretion of the body cavity.
- 13- The sorbitan esters known as "Spans" are hydrophilic in nature and form o/w emulsion.
- 14- Suspending agents include hydrophilic colloids, clays, and a few other agents. Some are also used as emulsifying agents.
- 15- The type of emulsion formed is primarily determined by the relative phase volumes and the emulsifying agent used.

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**Question Two: 15 Marks.**  
**35 minutes.**

**MCQ: Give the correct and best answer of the following :**

**1- Propellant 114 is:**

- a) Tetra Fluor Dichlor Ethan.
- b) Tri Fluor Trichlor Ethan.
- c) Tetra Fluor Trichlor Ethan
- d) Tri Fluor Tetrachlor Ethan

**2 A disadvantage of using compressed gases in aerosol preparations is that they:**

- a) Produce higher pressure.
- b) Produce a wet spray.
- c) Produce incompatibility.
- d) Contribute to instability.

**3- Mechanisms that are thought to provide stable emulsifications include the:**

- a) Formation of interfacial film.
- b) Lowering of interfacial tension.
- c) Presence of charge on the ions
- d) All of the above.

**4- Freons are:**

- a) Alkanes.
- b) Alkynes.
- c) A mixture of CO<sub>2</sub> and air.
- d) Fluorinated hydrocarbons.

**5- Which of the following properties are characteristic of flocculated particles in suspension?**

- a) Particles form loose aggregates.
- b) Rate of sedimentation is high.
- c) The sediment is loosely packed.
- d) All of the above.

**6- In the instability of emulsion, the flocculation of the dispersed phase may take place:**

- a) Before creaming.
- b) After creaming.
- c) During creaming.
- d) All the above.

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**7- The reversibility of flocculation in emulsion depends upon strength of interaction between particles as determined by:**

- The phase ratio volume.
- The chemical nature of emulsifier.
- The concentration of dissolved substances, specially electrolytes and ionic emulsifiers.
- All of the above.

**8- Creaming is influenced by:**

- Globule size.
- Viscosity of dispersion medium.
- Difference in the densities of dispersed phase and dispersion medium.
- All of the above.

**9- The extent of flocculation in emulsions depends on:**

- Globule size distribution, charge on the globule surface, and viscosity of the external medium.
- Globule size distribution and charge on the globule surface.
- Charge on globule surface and viscosity of the external medium.
- Viscosity of the external medium and globule size distribution.

**10- Coalescence is observed due to:**

- Sufficient amount of emulsifying agent
- Compatibilities between emulsifying agents.
- Altered partitioning of the emulsifying agent.
- All of the above.

**11- Which compound is a natural emulsifying agent?**

- Acacia.
- Lactose.
- Polysorbate 20.
- Sorbitan monopalmitate.

**12- A satisfactory suppository base must meet all of the following except:**

- It should be inert.
- It should melt less than 30 C.
- It should have a narrow melting range.
- It should be nonirritating and no sensitizing.

**13- The sedimentation of particles in a suspension can be minimized by:**

- Adding sodium benzoate.
- Increasing the viscosity of the suspension.
- Reducing the particle size of the active ingredient.
- (b) and (c) are correct.

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**14- The particle size of the dispersed solid in a suspension is usually greater than:**

- a) 0.5 micrometer.
- b) 0.3 micrometer.
- c) 0.2 micrometer.
- d) 0.1 micrometer.

**15- The extemporaneous preparation of a suspension, levigation is used to:**

- a) Reduce the zeta potential.
- b) Avoid bacterial growth.
- c) Reduce particle size.
- d) Enhance viscosity.

**Question Three: 5 Marks.**  
**15 minutes**

**PROBLEM:** Calculate the minimum amount of emulsifier needed to prepare 200mL of an emulsion with 30% of internal phase. The molecular weight of the emulsifier is 4500, and if its area molecular base is 130 Angstrom square and the radius of globule is 1.5 micrometer.

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**Question Four: 15Marks.**  
**45 minutes**

**A- EXPLAIN THE CAUSES OF CRYSTALS GROWTH AND ITS EFFECT ON STABILITY OF SUSPENSION. HOW CAN YOU AVOID IT?**

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**B- EXPLAIN THE TYPES, CAUSES, AND PREVENTION OF INSTABILITY OF EMULSIONS.**

End of Questions  
*Good Luck*

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