University of Palestine

Course No: PHRM 2216
Course Title: Physical Pharmacy (2)
Date: 07/06/2017
No. of Questions: (4)
Time: 2 hours
Using Calculator (No)

Final Exam
2016/2017
Total Grade:

Instructor Name: Nahed Hegazy,PhD
Student No.: _____
Student Name: _____
College Name: Pharmacy
Dep. / Specialist: ____-_____
Using Dictionary (No)

Question One:

Put True or False and Correct the false answer if any:

1. Flocculating agent is a polymeric suspending agent absorbed on the surface of a hydrophobic suspension particle giving the particle a hydrophilic surface.

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2. In colloidal dispersions, born forces lead to attractive interaction between two particles.

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3. Concerning the structure of micelles, the core consists of the hydrophobic chains of the surfactant and the palisade layer of ionic micelles contains the charged head groups.

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4. Caking of the suspension is usually prevented by reduction of particle size in the formulation.

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5. Liposomes can be multilamellar, composed of several bimolecular lipid lamellae separated by non-aqueous layers.

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6. Preservatives in emulsions may partition to the oily or micellar phases of complex systems and some are inactivated by surfactants, hence calculations must be made of the appropriate amounts.

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7. In an emulsion, adsorption of charged surfactants will lead to an increase in zeta potential and will thus help to maintain stability by increasing electrostatic repulsive energy.

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8. In Micellisation, if the hydrophilic chain length is increased then the molecule becomes more hydrophilic and the CMC will increase.

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9. An emulsion is said to crack when the oil or fat rises to the surface, but remains in the form of globules, which may be redistributed throughout the dispersion medium by shaking.

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10. Many decomposition reactions in the solid phase or in suspensions apparently follow first-order kinetics.

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11. Experimentally we can monitor the rate of breakdown of the drug either by its decrease in concentration with time or alternatively by the rate of appearance of one of the breakdown products.

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12. Stabilisation of oil-in-water emulsions by surfactants arises because of a reduction of the oil–water interfacial tension and is usually more effective when more than one surfactant is used.

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13. Most organic drugs form particles with a hydrophobic surface and are difficult to disperse in an aqueous medium.

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14. Chemical degradation leads to a loss of potency of the drug and in some cases, cause changes in the physical appearance of the dosage forms.

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15. Non-ionic surfactants are widely used in pharmaceutical emulsions. These adsorb onto the emulsion droplets and maintain stability by creating a hydrated layer on the hydrophobic particle in oil-in-water emulsions.

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16. The incorporation of insoluble compounds within micelles of the surfactant can lead to the production of turbid solutions.

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17. In a suspension of charged particles the flocculation may be controlled by the addition of electrolyte or ionic surfactants that increase the zeta potential, and hence electrostatic repulsive energy.

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18. Microemulsions are primarily used for formulating sustained release dosage forms as the drug entrapped in the innermost layer has to pass through the other two phases before being released for absorption.

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19. The non-ionic surfactants possess both positively and negatively charged groups and can exist as either an anionic or a cationic surfactant independing on the pH of the solution.

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20. The main disadvantage of a water-in-oil emulsion is its low viscosity because of the oil continuous phase.

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Question Two:

Complete the followings:

1. Mechanisms of drug release from multiple emulsion systems include;

2. The drawbacks of HLB system are;

3. The ideal suspending agent for controlling flocculation should;

4. The rate of creaming depends on;

5. The pharmaceutical applications of solubilisation are;

6. Drugs in suspension are prepared mainly for;

7. The factors that contribute to cracking are;

8. Physical degradation of water-in-oil-in-water (W/O/W) emulsions can arise by several routes, these routes are;

9. The problems that arise when a solid drug is dispersed in a liquid (in dispersion system) include;

10. An ideal emulsifying agent should possess the following characteristics;

Question Three:

1. What are the differences between;

A. Protective colloids and Flocculating agents.

B. Cracking and Caking in dispersion systems.

C. Stability of emulsions and stability of suspensions.

D. Flocculation and deflocculation in pharmaceutical suspensions**.**

2. Explain how we can determine the order kinetics of chemical breakdown reaction of drugs?

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Question Four:

1. **Briefly explain how we can control the properties of a suspension.**

2. **What are the pharmaceutical applications of polymers in drug delivery?**

3. **Mention the importance of surfactants in pharmacy and briefly explain the reason for the reduction in the surface tension by surfactants.**

End of Questions
Good Luck