



# UNIVERSITY OF THE PUNJAB

Second Prof. A/2015

Examination: Doctor of Pharmacy (Pharm.D.)

Roll No. ....

Subject: Pharmaceutics-II (Pharmaceutical Preparations)

TIME ALLOWED: 3 hrs.

PAPER: 1

MAX. MARKS: 100

**NOTE: Attempt any FIVE questions. All questions carry equal marks.**

Q.1 What is TDDS. Give examples and explain the factors affecting on the percutaneous absorption of TDDS. (10)

(b) Briefly discuss the different types of nasal and otic preparations? (10)

Q.2(a) Define and classify emulsifying and suspending agents? (10)

(b) What is the cost of 1000ml of glycerin, specific gravity 1.25, bought at 54.25 per pound? (10)

Q.3 (a) Define liquid-liquid extraction. Discuss percolation process in detail. (10)

b) What types of added substances are used in parenterals. Discuss their advantages. (10)

Q.4 a) What is a base? Classify and discuss in detail different types of suppositories bases. (15)

b) How the suppositories are classified according to their route of administration. (05)

Q.5 (a) Define the injections. Give the detail of official types of injections. (10)

(b) How many grams of a drug substance are required to make 120ml of a solution each teaspoonful of which contain 3mg of drug substance? (10)

Q.6 (a) Define and differentiate between syrups and elixirs, How the elixirs are Prepared? (10)

b) What are the steps involved in wet granulation method for tablet formulations? (10)

Q.7 Write not on

a) Digestion and decoction. (07)

b) Components of aerosol system (07)

c) Enemas & Douches (06)



# UNIVERSITY OF THE PUNJAB

Second Prof. A/2016

Examination: Doctor of Pharmacy (Pharm.D.)

Roll No. ....

**Subject: Pharmaceutics-II (Pharmaceutical Preparations)**

**Pharmaceutics-II (Dosage Forms Science)**

**PAPER: 1 (Old & New Course)**

**TIME ALLOWED: 3 hrs.**

**MAX. MARKS: 100**

**NOTE: Attempt any FIVE questions. All questions carry equal marks.**

Q.1 (a) Define and classify official syrups. Discuss different methods of preparation of syrup.

(10)

(b) Define the Displacement value. Calculate the displacement value of oil and water soluble bases with examples.

(10)

Q.2 Write note on

(a) Tinctures and spirit

(08)

(b) Lotions and liniments

(07)

(c) Pyrogen and its method of prevention

(05)

Q.3 (a) What are various routes for the delivery of drugs through skin, describe the advantages and disadvantages of transdermal drug delivery

(10)

(b) Define TDDS, Describe various technologies for TDDS.

(10)

Q.4 (a) Write note on ophthalmic dosage form. What are essential characteristics of an ideal ophthalmic solution.

(10)

(b) Give application of dosage form in pharmacy

(10)

Q.5 (a) Discuss in detail ointments and creams

(10)

(b) Define Aerosol disperse system? Briefly explain the Types of aerosol system? (10)

Q.6 (a) Define capsules. How many kinds of capsules are there, also discuss its application in pharmacy

(10)

(b) What types of added substances are used in parenterals. Discuss their advantages.

(10)

Q.7 (a) What is a base. Classify and discuss in detail different types of suppositories-bases.

(15)

(b) How the suppositories are classified according to their route of administration. (05)



# UNIVERSITY OF THE PUNJAB

Second Prof. 2<sup>nd</sup> A/2016

Examination: Doctor of Pharmacy (Pharm.D.)

Roll No. ....

**Subject: Pharmaceutics-II (Pharmaceutical Preparations)**

**Pharmaceutics-II (Dosage Forms Science)**

**PAPER: 1 (Old & New Course)**

**TIME ALLOWED: 3 hrs.**

**MAX. MARKS: 100**

***NOTE: Attempt any FIVE questions. All questions carry equal marks.***

Q.1(a) Define the injections. Give the detail of official types of injections. (10)

(b) Differentiate between Collodions and Poulitice (10)

Q.2 Write not on

(a) Emulsifying and suspending agents (07)

(b) Enemas & Douches (06)

(c) Tinctures and spirits (07)

Q.3 (a) Define the suppositories. Discuss their medical applications and advantages in Pharmacy. (10)

(b) What should be the characteristics of good suppositories base. Also discuss the methods of suppositories preparation. (10)

Q.4 (a) Define per cutaneous absorption and also discuss various factors affecting the transdermal drug delivery (12)

(b) Describe the characteristics of drugs suitable for transdermal drug delivery (08)

Q.5 (a) What are the methods of preparation of tablets. Explain wet granulation method in detail. (12)

(b) Differentiate between emulsion and suspension. Also discuss their application in Pharmacy. (8)

Q.6 (a) Define dosage form with example. . What are the benefits of making dosage form of drug compounds. (10)

(b) Write note on nasal and otic preparations. (10)

Q.7. (a) How the elixirs are prepared (5)

(b) write a brief note on aerosols (8)

(c) what are oral hygiene products (7)



# UNIVERSITY OF THE PUNJAB

Second Prof: A/2017

Examination: Doctor of Pharmacy (Pharm.D.)

Roll No. ....

**Subject: Pharmaceutics-II (Pharmaceutical Preparations)**

**Pharmaceutics-II (Dosage Forms Science)**

**PAPER: 1 (Old & New Course)**

**TIME ALLOWED: 3 hrs.**

**MAX. MARKS: 100**

***NOTE: Attempt any FIVE questions. All questions carry equal marks.***

Q.1( a) Write a note on ophthalmic preparation in detail (10)

( b) Define the injections. Give the detail of official types of injections. (10)

Q.2 ( a) Define Aerosol disperse system? Briefly explain the types and components of aerosol system? (10)

(b) Briefly discuss oral hygiene products (10)

Q.3 Write a note on following (05 each)

( a) Preparation of Elixirs

( b) Gels

(c) Enemas & Douches

(d) Alcohol USP

Q.4 ( a) What are the parenterals. Discuss in detail the added substances used in parenterals along with examples. (10)

( b) Classify the suppository bases. Discuss in detail water soluble suppository (10)

Q.5 ( a) Define the emulsions. Discuss their methods of preparations? (12)

(b) Discuss the design features of Transdermal Drug delivery Systems. (08)

Q.6 (a) Define the extraction and discuss galenic preparation in detail. (15)

( b) Write a note on Non aqueous vehicles for injection. (05)

Q.7 ( a) Define the suppositories. Discuss their different therapeutic applications and advantages in Pharmacy. (10)

( b) Define granule. Discuss their type, advantages and disadvantages (10)



# UNIVERSITY OF THE PUNJAB

Second Prof: 2<sup>nd</sup> Annual - 2017

Examination: Doctor of Pharmacy (Pharm.D.)

Roll No. ....

Subject: Pharmaceutics-II (Pharmaceutical Preparations)  
Pharmaceutics-II (Dosage Forms Science)

TIME ALLOWED: 3 hrs.  
MAX. MARKS: 100

PAPER: 1 (Old & New Course)

**NOTE: Attempt any FIVE questions. All questions carry equal marks.**

Q.1 (a) what are aerosols discuss its principle , container and valve assembly (12)

(b) Write a note on Liniments? (08)

Q.2 (a) Define and classify official syrups. Discuss invert syrup and different methods of preparation of simple syrup. (10)

(b) Define the Displacement value. Calculate the quantities required to make ten cocoa butter (2 mould) suppositories. Each containing 400 mg of zincoxid ( D.V of ZnO= 4.7)(10)

Q. 3. Write notes on the followings: (05 each)

(a) Powders types and methods of preparation.

(b) Lotions

(c) Pyrogens and their prevention

(d) Poultices

Q.4 ( a) Define and discuss in detail oleaginous suppositories bases alongwith their different crystalline forms & preventive measures. (15)

(b) How the suppositories are classified according to their route of administration (05)

Q.5 (a) Discuss different methods for preparation of suspensions in detail? (10)

(b) In how many ways tablets can be prepared. Explain wet granulation method in detail. (10)

Q.6 (a) Define water for injection USP. Classify & discuss different kinds of water for injection USP.(14)

(b) Define the suppositories. Discuss different method of their preparation. (06)

Q.7 ( a) Define Transdermal drug delivery Systems. What are their advantages and disadvantages?(10)

(b) Discuss briefly enemas (10)





# UNIVERSITY OF THE PUNJAB

Second Prof: Annual – 2018

**Examination: Doctor of Pharmacy (Pharm.D.)**

Roll No. ....

**Subject: Pharmaceutics-II (Dosage Forms Science) (New Course)**  
**PAPER: 1 (Part – II)**

**TIME ALLOWED: 2 Hrs. & 30 min.**  
**MAX. MARKS: 80**

*Attempt this Paper on Separate Answer Sheet provided.*

**Attempt any 4 questions. Each question carry equal marks.**

Q.1. a) Define Aerosol disperse system? Briefly explain the types and components of aerosol system? (10)

b) What is Displacement value. Prepare 12 glycerogelatin suppositories containing 0.5% w/w cinchona hydrochloride using 2g mould. (10)

Q. 2. (a) Discuss Alcohol, USP as a solvent for pharmaceutical preparations and discuss its pharmaceutical advantages and disadvantages. (10)

(b) Discuss different percutaneous absorption enhancers including chemical enhancers and physical methods? (10)

Q.3. (a) Define Transdermal drug delivery Systems. What are different factors affecting percutaneous absorption? (10)

b) What should be the characteristics of good suppositories base. Also discuss their methods of preparation. (10)

Q.4 a) Define tablets & capsule, write down names and uses of common ingredients used in tablet dosage form. (10)

b) Classify the suppository bases. Discuss in detail water soluble suppository bases. (10)

Q.5 a) Define and classify official syrups. Discuss invert syrup and different methods of preparation of simple syrup & elixir. (10)

(b) Define the Displacement value. Calculate the quantities required to make ten cocoa butter (2 mould) suppositories. Each containing 400 mg of zinc oxide (D.V of ZnO = 4.7) (10)

Q. 6 Write notes on the followings: (05 each)

(a) Collodions

(b) Difference b/w syrups & elixirs

(c) Liniment & Paste

(d) Applications of soft and hard gelatin capsule



# UNIVERSITY OF THE PUNJAB

Second Prof: Annual – 2018

Examination: Doctor of Pharmacy (Pharm.D.)

Subject: Pharmaceutics-II (Dosage Forms Science) (New Course)

PAPER: 1 Part – I (Compulsory)

TIME ALLOWED: 30 min.

MAX. MARKS: 20

Roll No. ....

Attempt this Paper on this Question Sheet only.

Please encircle the correct option. Each MCQ carries 1 Mark. This Paper will be collected back after expiry of time limit mentioned above.

1. Non aqueous vehicles are used to prevent
  - a) Polymerization
  - b) Oxidation
  - c) Hydrolysis
  - d) Isomerization
2. Oral suspension are \_\_\_\_\_ preparations
  - a) Aqueous
  - b) Non-aqueous
  - c) Hydroalcoholic
  - d) Alcoholic
3. Iontophoresis involves the delivery of \_\_\_\_\_ chemical compounds across the skin membrane.
  - a) Large
  - b) Small
  - c) Charged
  - d) Colloidal
4. Mostly, Oleginous injections are administred.
  - a) Intradermally
  - b) I/V
  - c) Subcutaneous
  - d) I/M
5. \_\_\_\_\_ are alcoholic or hydro-alcoholic solutions prepared from vegetable materials or from chemical substances.
  - a) Elixirs
  - b) Tinetures
  - c) Extracts
  - d) Sprays
6. Heating is not involved in the preparation of:
  - a) Ointments
  - b) Glycerogelatins
  - c) Poultices
  - d) Liniments
7. The Na<sup>+</sup> and Cl<sup>-</sup> ions contents of in NaCl injection are approximately \_\_\_\_\_ of each per liter.
  - a) 156 mEq
  - b) 154 mEq
  - c) 160 mEq
  - d) 152 mEq
8. If PEG suppositories don't contain at least \_\_\_\_\_ of water they can cause irritation to mucous membrane after insertion.
  - a) 20%
  - b) 10%
  - c) 40%
  - d) 30%
9. \_\_\_\_\_ is considered as a mean to enhance transdermal drug delivery.
  - a) Ion Exchange Method
  - b) High Frequency Ultrasound
  - c) Reverse Osmosis
  - d) Filtration

10. Displacement value is calculated b/c \_\_\_\_\_ of the medicament may vary considerably from the base.
- a) Mol. Weight                      b) Mass  
c) Density                              d) Specific Gravity
11. Which one of the oil is NOT suitable for treatment to be used as suppository base?
- a) Coconut Oil                      b) Cinnamon Oil  
c) Cotton seed Oil                      d) Palmitic Oil
12. Smallest size of capsule is represented by:
- a) 0                                      b) 3  
c) 1                                      d) 5
13. Non aqueous vehicles must not contain \_\_\_\_\_ as these materials are not absorbed by body tissue.
- a) Castor Oil                      b) Corn Oil  
c) Mineral Oil                      d) Cotton Seed Oil
14. Suppositories bases play an important role for the \_\_\_\_\_ of the medicaments.
- a) Action                              b) Release  
c) Absorption                      d) Metabolism
15. Iodine value in case of fatty base should be less than \_\_\_\_\_.
- a) 7                                      b) 9  
c) 8                                      d) 6
16. The identification of propellants in pharmaceutical aerosols is carried out by:
- a) Gas Chromatography                      b) Pycnometer  
c) Tag open cup apparatus                      d) IR spectrophotometer
17. Saponification value ranges from:
- a) 100 – 300                      b) 200 – 245  
c) 150 – 250                      d) 190 – 240
18. \_\_\_\_\_ amount is required to make a 10% w/w aqueous solution of sucrose.
- a) 10 mg in 100 g water                      b) 10 g in 100 g water  
c) 10 g in 90 g water                      d) None of above
19. Following is the example of tablet disintegrant:
- a) Starch                              b) Lactose  
c) Gelatin                              d) Mg. Stearate
20. The HLB system is used to classify:
- a) Binders                              b) Sufactants  
c) Diluents                              d) Colourants





# UNIVERSITY OF THE PUNJAB

Second Prof: 2<sup>nd</sup> Annual – 2018

Examination: Doctor of Pharmacy (Pharm.D.)

Roll No. ....

**Subject: Pharmaceutics-II (Dosage Forms Science)**

**PAPER: 1 Part – II (New Course)**

**MAX. TIME: 2 Hrs. 30 Min.**

**MAX. MARKS: 80**

**ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED**

**NOTE: ATTEMPT ANY FOUR QUESTIONS. EACH QUESTION CARRIES EQUAL MARKS.**

Q2 a) Define water for injection USP. Classify & discuss different kinds of water for injection USP. (14)

b) Define the suppositories. Discuss their applications and advantages. (06)

Q3 a) Define Ointments and describe different classes of ointment bases according to USP (10)

(b) Discuss preparation and applications of Emulsions? (10)

Q4 a) Define and discuss in detail oleaginous suppositories bases alongwith their crystalline forms. How to prevent unstable forms? (12)

b) What are the galenical preparations. Discuss processes of infusion & decoction. (8)

Q5 a) Write a note on ophthalmic preparation in detail (10)

b) Define Injections. Discuss in detail Official types of injections USP (10)

Q6 a) What are the parenterals. Discuss in detail the added substances used in parenterals alongwith examples. (10)

b) Define pharmaceutical aerosols and discuss various types of aerosols systems. (10)

Q7 Write a note on following (05 each)

a) Creams

b) Powder & granules

c) Enemas & Douches

d) Ointments uses & methods of preparation



# UNIVERSITY OF THE PUNJAB

Second Prof: 2<sup>nd</sup> Annual – 2018

Examination: Doctor of Pharmacy (Pharm.D.)

Roll No. in Fig. ....

Roll No. in Words. ....

Subject: Pharmaceutics-II (Dosage Forms Science)

MAX. TIME: 30 Min.

PAPER: 1 Part – I (Compulsory) (New Course)

MAX. MARKS: 20

Signature of Supdt.:

Attempt this Paper on this Question Sheet only.

Please encircle the correct option. Division of marks is given in front of each question.

This Paper will be collected back after expiry of time limit mentioned above.

**Q.1. Encircle the right answer cutting and overwriting is not allowed. (20x1=20)**

1. Chemically cocoa butter is triglycerides i.e combination of glycerin with one or different.....

- A) Vitamin
- B) Amino acid
- C) Fatty acids.
- D) Sugar substitute

2. Which one is NOT a disperse system

- A) Suspension
- B) Emulsion
- C) Collodion
- D) Gel

3. The amount of water in grams which can be incorporated in..... grams of fat is expresses as water no.

- A) 500
- B) 100
- C) 200
- D) 300

4. By formulation ..... is always an O/W or W/O emulsion

- A) Ointment
- B) Paste
- C) Liniment
- D) Cream

5. Two phase aerosol system emits:

- (A) Dry mist
- (B) Wet mist
- (C) Form
- (D) Emulsion

6. One of following is NOT the example of tablet Diluent

- A) Starch
- B) Lactose
- C) Talc
- D) Sucrose

7. Aerosol packaging container must resist pressure of

- A) 500 psig
- B) 40 psig
- C) 20 psig
- D) 140 – 180 psig

8. Glycerinated gelatin suppositories are prepared by dissolving:

- A) Gelatin 30%, glycerin 60%, medication 10%
- B) Gelatin 20%, glycerin 70%, medication 10%
- C) Gelatin 10%, glycerin 70%, medication 20%
- D) Gelatin 40%, glycerin 40%, medication 20%

9. The .....bacteria produced the most potent pyrogenic substances.

- A) Actinomyces
- B) Gram negative
- C) Acid fast
- D) Gram positive

10. ----- is the major rate-limiting barrier to transdermal drug transport

- A) Epidermis.
- B) Dermis.
- C) Stratum corneum
- D) Sebum

11. The mass of KOH in mg that is required to neutralize one gram of chemical substances is called as..... value/no

- A) Acid
- B) Basic
- C) Water
- D) Saponification

12. Parabens are used as

- A) Buffering agents
- B) Chelating agents
- C) Preservative
- D) Flavorants

13. Bees wax about ..... can be mixed with cocoa butter to prevent liquification while using volatile drugs

- A) 6%
- B) 4%
- C) 7%
- D) 9%

14. Hydrophilic petrolatum, USP is an example of

- A) Absorption bases
- B) Hydrocarbon bases.
- C) Water-removable bases.
- D) Water-soluble bases

15. Which of the following natural emulsifying agents promotes o/w emulsion formation?

- (A) Lanolin
- (B) Wool Fat
- (C) Beeswax
- (D) Lecithin

16. Vegetable capsule shells are made up of:

- (A) Gelatin
- (B) Chitosan
- (C) HPMC
- (D) None

17. Which of the following is NOT added in lozenges?

- (A) Disintegrant
- (B) Sweetener
- (C) Binder
- (D) None

18. Manufacturing of aerosols involve

- A) Liquid filling
- B) Pressure filling
- C) Compressed gas filling
- D) None of above

19. Chemically pyrogens are ..... substances which are associated with a carrier molecule

- A) Nucleic acid
- B) Amino acid
- C) Carbohydrate
- D) Lipid

20. For ear inserts ..... is used as base

- A) Theobroma oil
- B) PEG
- C) Glycerogelatin
- D) Mono stearate





# UNIVERSITY OF THE PUNJAB

Doctor of Pharmacy (Pharm.D.) Second Prof: Annual-2019

Subject: Pharmaceutics-II (Dosage Forms Science) (New Course)

Paper: 1 Part - I (Compulsory)

Time: 30 Min. Marks: 20

Roll No. in Fig. ....

Roll No. in Words. ....

Signature of Supdt.: .....

**ATTEMPT THIS PAPER ON THIS QUESTION SHEET ONLY.**

Division of marks is given in front of each question.

This Paper will be collected back after expiry of time limit mentioned above.

**Q.1. Encircle the correct option.**

**(20x1=20)**

- i. By formulation \_\_\_\_\_ is always an O/W or W/O emulsion
  - a) Ointment
  - b) Paste
  - c) Liniment
  - d) Cream
- ii. Which one is NOT a disperse system
  - a) Suspension
  - b) Emulsion
  - c) Collodion
  - d) Gel
- iii. The amount of water in grams which can be incorporated in \_\_\_\_\_ grams of fat is expressed as water no.
  - a) 500
  - b) 100
  - c) 200
  - d) 300
- iv. Chemically cocoa butter is triglycerides i.e combination of glycerin with one or different \_\_\_\_\_
  - a) Vitamin
  - b) Amino acid
  - c) Fatty acids.
  - d) Sugar substitute
- v. Two phase aerosol system emits:
  - a) Dry mist
  - b) Wet mist
  - c) Form
  - d) Emulsion
- vi. One of following is NOT the example of tablet Diluent
  - a) Starch
  - b) Lactose
  - c) Talc
  - d) Sucrose
- vii. Aerosol packaging container must resist pressure of
  - a) 500 psig
  - b) 40 psig
  - c) 20 psig
  - d) 140 - 180 psig
- viii. Glycerinated gelatin suppositories are prepared by dissolving:
  - a) Gelatin 30%, glycerin 60%, medication 10%
  - b) Gelatin 20%, glycerin 70%, medication 10%
  - c) Gelatin 10%, glycerin 70%, medication 20%
  - d) Gelatin 40%, glycerin 40%, medication 20%
- ix. The \_\_\_\_\_ bacteria produced the most potent pyrogenic substances.
  - a) Actinomyces
  - b) Gram negative
  - c) Acid fast
  - d) Gram positive
- x. \_\_\_\_\_ is the major rate-limiting barrier to transdermal drug transport
  - a) Epidermis
  - b) Dermis
  - c) Stratum corneum
  - d) Sebum
- xi. Mesh number is \_\_\_\_\_.
  - a) No. of holes per parallel inch
  - b) No. of holes per linear inch
  - c) Number of holes per inch square
  - d) Number of wires per linear inch

P.T.O.

- xii. For ear inserts \_\_\_\_\_ is used as base
  - a) Theobroma oil
  - b) PEG
  - c) Glycerogelatin
  - d) Mono stearate
- xiii. Bees wax about \_\_\_\_\_ can be mixed with coca butter to prevent liquification while using volatile drugs.
  - a) 6%
  - b) 4%
  - c) 7%
  - d) 9%
- xiv. Hydrophilic petrolatum, USP is an example of
  - a) Absorption bases
  - b) Hydrocarbon bases.
  - c) Water-removable bases.
  - d) Water-soluble bases
- xv. Which of the following natural emulsifying agents promotes o/w emulsion formation?
  - a) Lanolin
  - b) Wool Fat
  - c) Beeswax
  - d) Lecithin
- xvi. Vegetable capsule shells are made up of:
  - a) Gelatin
  - b) Chitosan
  - c) HPMC
  - d) None
- xvii. Which of the following is NOT added in lozenges?
  - a) Disintegrant
  - b) Sweetener
  - c) Binder
  - d) None
- xviii. Manufacturing of aerosols involve
  - a) Liquid filling
  - b) Pressure filling
  - c) Compressed gas filling
  - d) None of above
- xix. The granules are usually in range:
  - a) 4-8 mesh no.
  - b) 4-40 mesh no
  - c) 4-20 mesh no.
  - d) 4-12 mesh no.
- xx. Gelatin for capsules is obtained by the \_\_\_\_\_ processing of collagen
  - a) Reduction
  - b) Oxidation
  - c) Drying
  - d) Partial hydrolysis



# UNIVERSITY OF THE PUNJAB

Doctor of Pharmacy (Pharm.D.) Second Prof: Annual-2019

Roll No. ....

Subject: Pharmaceutics-II (Dosage Forms Science) (New Course)

Paper: 1 Part – II

Time: 2 Hrs. 30 Min. Marks: 80

**ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED**

**Note: Attempt any *FOUR* questions. Each question carries equal marks.**

- Q.2. a) Define & classify the suppository bases. Discuss in detail water soluble suppository bases. (10)
- b) Define tablets & capsule, write down steps along with names and uses of ingredients involved in manufacturing of tablets. (10)
- Q.3. a) Define Aerosol disperse system? Briefly explain the types and components of aerosol system? (10)
- b) What is Displacement value. Prepare 12 glycerogelatin suppositories containing 0.5% w/w cinchona hydrochloride using 2g mould. (10)
- Q.4. a) Define Injections. Discuss in detail Official types of injections USP (10)
- b) What are the properties of an ideal dosage form? Give examples of solid, liquid and semi-solid dosage forms. (05)
- c) A gas chromatographic column measures 1.8 m in length and 3 mm in internal diameter, convert these measurements into inches. (05)
- Q.5. a) Define water for injection USP. Classify & discuss different kinds of water for injection USP. (10)
- b) Define the suppositories. Discuss their medical applications, advantages & different routes of administration. (10)
- Q.6. a) Discuss Alcohol, USP as a solvent for pharmaceutical preparations and discuss its pharmaceutical advantages and disadvantages. (10)
- b) Discuss different percutaneous absorption enhancers including chemical enhancers and physical methods? (10)
- Q.7. Write a note on following (5x4)
- a) Preparation and applications of Suspensions (05)
- b) Define Powders, classify according to their size ranges (05)
- c) Ophthalmic & otic preparation (05)
- d) Non aqueous solvent for injection (05)



# UNIVERSITY OF THE PUNJAB

Doctor of Pharmacy (Pharm.D.) 2<sup>nd</sup> Prof: Annual-2021

Roll No. ....

Subject: Pharmaceutics-II (Dosage Forms Science) (New Course)

Paper: 1 Part – II

Time: 2 Hrs. 30 Min. Marks: 80

**ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED**

**Note: Attempt any *FOUR* questions. Each question carries equal marks.**

Q.2. (a) what are Transdermal drug delivery Systems? Discuss different factors affecting percutaneous absorption? (10)

(b) Define Emulsions. What are different methods for preparation of emulsions? (10)

Q. 3. a) Define elixirs with examples. Discuss its composition, uses, advantages, disadvantages and method of preparation. (10)

b) What are parenteral? Discuss in detail the added substances used in parenteral along with examples. (10)

Q.4. (a). Define dosage form, give its classification based on route of administration with example. Explain importance of dosage form in drug delivery. (10)

(b). Give a brief description on different measurement systems used in pharmacy. (10)

Q.5. (a) Classify and discuss in detail different water soluble suppository bases. (15)

(b) Discuss properties and uses of glycerin in pharmaceutical preparations? (05)

Q.6. (a). Define buffer solutions and buffer capacity and give their importance in pharmacy. Give a brief description of Henderson-Hasselbalch method for preparing buffer solutions. (10)

(b). what molar ratio of salt/acid is required to prepare a sodium acetate-acetic acid buffer solution with pH of 5.76? The pK<sub>a</sub> value of acetic acid is 4.76 at 25 °C. (5)

(c). How much of boric acid (M. Wt. 61.8) in 1000 g of water is required make a solution isotonic with blood, calculate the percentage strength of final solution. (5)

Q.7. (a) Define Pastes. Describe their methods for preparation, packaging and labelling? (10)

(b) Differentiate between Lotions and Liniments. (10)





11. Which ingredient has the effect of laxative in Glycerogelatin suppositories?  
 A. Glycerol  
 B. Gelatin  
 C. PEG  
 D. Codeine
12. What is the percentage of gelatin in Glycerogelatin suppositories?  
 A. 70%  
 B. 14%  
 C. 16%  
 D. 20%
13. Mostly, Oleoginous injections are administered  
 A. Intradermally  
 B. I.V.  
 C. Subcutaneous  
 D. I.M
14. If PEG suppositories don't contain at least ..... of water they can cause irritation to mucous membrane after insertion  
 A. 20%  
 B. 10%  
 C. 40%  
 D. 30%
15. Displacement value is calculated b/c .....of the medicament may vary considerably from the base  
 A. Mol. Weight  
 B. Mass  
 C. Specific gravity  
 D. Density
16. Non aqueous vehicles are used to prevent  
 A. Polymerization  
 B. Oxidation  
 C. Hydrolysis  
 D. Isomerization
17. Which one is not a disperse system?  
 A. Suspension  
 B. Emulsion  
 C. Collodion  
 D. Gel
18. Salicylic acid collodion is used \_\_\_\_\_  
 A. To treat Fungal Infections  
 B. To remove corns from the toes  
 C. To treat Bacterial Infections  
 D. To treat Acne
19. For OTC oral products intended for children 6 to 12 years of age, the recommended alcohol content limit is  
 A. 0.1%  
 B. 0.5%  
 C. 1%  
 D. 5%
20. The TDDS acts as an occlusive moisture barrier through which sweat cannot pass, increasing \_\_\_\_\_  
 A. Skin Elasticity  
 B. Skin hydration  
 C. Skin Flexibility  
 D. Skin Diffusion