POKHARA UNIVERSITY

Level: Bachelor
Programme: B. Pharm.
Course: Pharmaceutics V(Biopharmaceutics A)

Semester –Spring

Year : 2011
Full Marks: 100
Pass Marks : 45
Time :3 hrs.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Attempt all the questions.

a) What is bio-pharmacy? Discuss its scope briefly. 5
b) What is absorption? Discuss briefly the factors that influence the rate of absorption of drugs through a biological membrane. 5
c) Justify the statement 'the rate of diffusion of drug from gut is directly proportional to the concentration of drug in the gut". 5

a) Discuss briefly the different mechanisms of absorption of drugs with suitable examples. 8
b) Derive the relationship for the plasma concentration time in single oral dose based on first order kinetics. 7

OR

Discuss briefly the factors affecting drug distribution. Correlate the volume of distribution with biological half- life and clearance. 7

3. a) Explain the different types of kinetics along with the equations involved. 8
b) Explain the importance of individualisation of drug dosage regimen? 7

OR

Explain dosing of drugs in infants and elderly with formula. 7

4. a) Determine the elimination and absorption half-lives of drug X, which showed the following plasma concentration data, after its oral administration (9100 mg). 8

Time (hr.)	0.5	1	2	3	5	8	12	18
Concentration (mcg/ml	10.8	19.7	28.5	31	27.1	20	12.8	6.3

b) What is the objective of individualization of drug dosage regimen? Discuss briefly the information required for this purpose. If an adult dose of drug is 100 mg, what would be the dose for a child having body surface area 0.9 m^2? 7

5. a) What is renal function? How it is measured? 7
a) Define the term bioequivalence. Discuss briefly its importance. How 8

bioequivalence is determined?

6. a) Justify the statement "two brands of drugs may not be bioequiva
even if they contain the same amount of active ingredients."
b) Write down the types of drug interactions with suitable examples

7. Write short notes on **any two:**
c) Implication of polymorphism in dosage form design
d) Regulatory bioavailability requirement
e) Approach of in-vitro and in-vivo bioavailability testing

POKHARA UNIVERSITY

Level: Bachelor
Programme: B. Pharm.
Course: Pharmaceutics IV
(Dosage forms and Formulations)

Semester – Spring

Year : 2011
Full Marks: 100
Pass Marks : 45
Time : 3hrs

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Attempt all the questions.

a) What are transdermal drug delivery systems? Give its advantage and disadvantage? Write about design feature of transdermal drug delivery systems. 8

b) Describe the classification, fomulation, manufacturing and packaing of lotions. 7

a) What are glycerogelatin and liniments? Give suitable example. 8

b) Explain the formulation factors affecting transdermal bioavailability of a drug. 7

a) Give a brief account on different types of contact lenses. 5

b) Write about sterility and preservation in ophthalmic dosage forms. 5

c) Elucidate the cerumen removing otic solution and otic suspensions. 5

a) Describe the methods of preparation of suppository? 8

b) What are pessaries? Describe the packaging and labelling of Pessaries. 7

a) Elucidate the various components of aerosol with suitable diagram. 8

b) Write about method for filling of pharmaceutical aerosols in brief. 7

a) Highlight the scope of gene therapy for cancer and HIV. 7

b) What do you mean by Novel Drug Delivery System? Describe Implantable System. 8

Write short notes on **any two**: 2×

a) Iontophoresis

PU Old Questions B.Pharm. Semester-IV

POKHARA UNIVERSITY

4th Sem

Level: Bachelor
Programme: B. Pharm.

Semester – Spring

Year : 2012
Full Marks: 100
Pass Marks : 45
Time : 3hrs.

Course: Pharmaceutics V (Biopharmaceutics A)

Candidates are required to give their answers in their own words as far as practicable.
The figures in the margin indicate full marks.
Attempt all the questions.

1. Define bio-pharmaceutics and write its scope with suitable examples. 5
2. What is dissolution? Explain briefly two important laws/relations to determine the rate of dissolution. 5
3. Discuss briefly the concept and application of biopharmaceutical classification system (BCS) of drugs with suitable examples. 5
4. Why first order processes said to follow linear kinetics? Compare zero and first order rate processes. Quote some examples of zero order rate processes. 7
5. Explain what you mean by individualization of dosing regimen? Why is it necessary to select the proper route of administration in drug therapy? Give reasons with examples. 8
6. What are the consequences of drug metabolism? Give examples to support your answer. Estimate the creatinine clearance of 30 year old, 70 kg man with serum creatinine value 2 mg%. Also calculate the renal function value. 7
7. Describe the one compartment open model IV administration. After a dose of 500mg of a certain drug, vd = 30 liter, Ke=0.2/hr. Assuming the drug undergoes first order rate process, calculate the half life and plasma drug concentration after 360 min. 8
8. List the objectives of bioavailability studies. Define pharmaceutical equivalents, therapeutic equivalents, pharmaceutical alternatives and therapeutic alternatives. 7
9. Describe absolute and relative bioavailability. The following data is obtained for 4 formulations of pentoxifyl line in volunteers of average weight 50 kg: 8

Drug Product	Dose (mg/kg)	AUC (mcg.hr/l)
I.V. solution	1.2	450
Oral solution	4	822

Oral capsule	4	736
Oral S.R. tablet	8	1040

i. What is the absolute bioavailability of the drug from capsule and SR tablet?

ii. What is the relative bioavailability of capsule against oral solution?

5. a) Define drug interaction and drug incompatibilities with example. Explain chelation with example.

b) Discuss briefly the importance of blood concentration-time curve to find out pharmacokinetic parameters.

c) Describe briefly the process of drug distribution and metabolism in the human body.

6. a) Discuss briefly the importance of urine data for deriving different pharmacokinetic parameters including bioavailability.

b) What do you understand by pH-partition hypothesis? Give its significance based on absorption of drug.

7. Write short notes on **any two:**

a) Facilitated difussion

b) In-vitro drug interactions

c) Enterohepatic circulation

POKHARA UNIVERSITY

Level: Bachelor Semester – Spring Year : 2012
Programme: B. Pharm. Full Marks: 100
Pass Marks : 45
Course: Pharmaceutics IV (Dosage forms and Formulation B) Time : 3hrs.

Candidates are required to give their answers in their own words as far as practicable.
The figures in the margin indicate full marks.
Attempt all the questions.

What are transdermal drug delivery systems? Explain factors influencing TDDS.	8
Define ointments. Discuss about ointment bases with suitable examples.	7
What do you understand by transdermal therapeutic system? Explain about monotlithic system and membrane controlled transdermal system.	8
Write about advantage and disadvantage of different types of contact lenses.	7
Categorize the following excipients: i. Propylparaben ii. Sodium lauryl sulphate iii. Propylene glycol iv. Stearyl alcohol v. White petrolatum.	5
Explain about anti-infective, anti-inflammatory and analgesic ear preparations.	5
Explain factors influencing rectal absorption.	5
What are the pharmaceutical requirements for preparation of ophthalmic solutions and suspensions? Explain in detail.	8
Explain the method of preparation of suppositories.	7
Explain briefly about method for filling of pharmaceutical aerosols.	5
Describe vaccines as biotechnological product with suitable examples.	5
What are radiopharmaceuticals give its applications.	5
Describe the components of pharmaceutical aerosol with a suitable diagram.	8
Describe about rDNA technology.	7
Write short notes on **any two:** i. Novel drug delivery systems ii. Factors affecting percutaneous absorption iii. Positron Emission Tomography	2×5

POKHARA UNIVERSITY

School of Health and Allied Sciences

Second Term Examination/ 2012

Program: B. Pharm.
Semester: 4th (Fourth)
Course: PHT 202 Pharmaceutics IV (Dosage Forms and Formulation B)
Attempt all questions

Full marks: 100
Pass marks: 50
Time: 3 hrs.

1. a. What are the advantages and disadvantages of transdermal drug delivery? (8)
   b. What are penetration enhancers? Explain any two mechanisms by which penetration enhancer show its action? (7)

2. a. What are the factors to be considered while selecting the base in formulation of an ointment? (7)
   b. Define pastes, plasters, glycerogelatins. Mention different materials that are used to prepare plastic tubes and specify the special features of each? (3+5)
   c. Mention the uses of following preparations: (1x5)
   i. Hydrogen peroxide topical solution
   ii. Povidone iodine solution
   iii. Salicylic acid plaster
   iv. Thimerosal topical solution
   v. Compound Benzoin tincture

3. a. What are the types of contact lenses? Explain about the products for soft contact lenses. (2+5)
   b. Explain about nebulizer used for nasal administration of drugs. (5)
   c. Describe about analgesic ear preparations. (5)

4. a. Define suppositories. What are the advantages over oral therapy of the rectal route of administration for achieving systemic effects? (2+3)
   b. What are the types of suppository bases? Explain about water soluble/water miscible bases. (2+5)

5. a. Define aerosols. Explain about valve assembly. (1+6)
   b. Explain about metered dose inhaler. (5)

6. What is a radiopharmaceutical? Explain about the therapeutic use of radiopharmaceuticals with suitable examples. (2+5)

7. a. What are the techniques utilized to produce biotechnological products? Explain about recombinant DNA technology. (2+5)
   b. Explain about monoclonal antibody with suitable example. (5)
   c. Explain about vaccines with suitable example. (5)

CIST

1 (a) Briefly explain about the quality control test for pharmaceutical aerosols.

(b) What are various propellants used in aerosol? Discuss (7)

2. (a) Discuss various suppositories bases & their properties (8)

(b) Calculate the quantity of base required to make 18 suppositories containing 480 mg of zinc oxide. DV of zinc oxide is 4.7 and capacity is 2 g.

3 (a) Define radiopharmaceuticals. Explain the principles & applications PET (8)

(b) What are various enzymes used in rDNA technology? Explain briefly

4 (a) How is insulin produced in commercial scale using rDNA technology Explain ~ appropriate figure. (8)

(b) Explain various vectors used in Gene therapy (7)

5 (a) Explain different types of ocular inserts ~ examples (8)

(b) Draw cross section of eye ~ proper labelling & explain about ocular pharmacokinetics. (7)

6 (a) What are functions of skin? Explain briefly (7)

(b) What are various routes of drug absorption through skin? Explain ~ proper diagram. (8)

7 Write short notes 2.5 x 4

(a) TDDS

(b) NDDS

(c) Norplant Subdermal implant.

(d) Targeted drug delivery systems.

CCT

HT IV Dosage form & formulation (B)

Program: Pharmacy
Semester: IV
Subject: Pharmaceutics IV

Year: 2012
Full Marks: 100
Time: 3hrs

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

1. a) Define creams. Discuss abt ointment bases & suitable examples 5
b) What is isotonicity? Explain ~ reference to opthalmic dosage form 5
c) What are factors that affect absorption of drugs from rectal suppositories explain briefly. 5

2. a) What are TDDS, give its advantages disadvantages, 8
Write abt design, feature of TDDS.
b) What are suppositories? Give a detail account on suppositories bases. 7

3. a) Write advantage & disadvantage of aerosol over other dosage forms, write abt container & valve assembly. 8
b) Give a detail method of prep^n of ointments. Write about Compendial requirements for ointments. 7

4. a) What are tinctures & liniments explain ~ suitable example. 7
b) Write about sterility & preservation in opthalmic dosage forms, 8
Write about opthalmic inserts.

5. a) Write briefly about practice of nuclear pharmacy. 5
b) Write about recombinant DNA. 5
c) Write about novel drug delivery system. 5

6. a) What are pessaries? Write about alprostadil suppository. 5
b) Give a brief account on different types of contact lenses. 5
c) Write about method for filling of pharmaceutical aerosol in brief. 5

7. Write short note on any two 5×
a) Gene Therapy
b) Percutaneous Permeation Enhancer
c) PET

CRIMSON COLLEGE OF TECHNOLGY

Final Terminal Examination

B. Pharm.
Semester: IV
Course: Pharmaceutics V

Full marks: 100
Time: 3 hrs

Attempt all the questions.

1. a. Define biopharmaceutics. Discuss the scope of biopharmaceutics. 5
   b. Explain briefly about sequence of events in the absorption of drugs from orally administered solid dosage form with the help of figure. 5
   c. Describe the similarities and differences between passive and facilitated diffusion. 5

2. a. Explain the limitations of pH-partition theory in brief. 7
   b. Describe in brief different mechanisms of absorption of drug with suitable example. 8

3. a. Explain the dosing of drugs in infant and children with related equations. 5
   b. Define first order and derive the relationship between plasma concentration and time for first order kinetics. 5
   c. A 23 year old man of 70 kg has serum creatinine value of 2.1 mg %. Calculate his creatinine clearance and also the renal function value. 5

4. a. Define pharmacokinetic model. Describe the applications of pharmacokinetic models. 5
   b. Differentiate between physiological pharmacokinetic model and compartmental model. 5
   c. Define clearance. Derive the relationship between half life and clearance and volume of distribution. 5

5. a. Differentiate between absolute and relative bioavailability with equation. 5
   b. Define bioequivalence. Give very brief account on different methods of assessing bioequivalence. 5
   c. How can you enhance the drug solubility to enhance the bioavailability. Describe the use of cosolvent in detail. 5

6. a. Differentiate between phase I and phase II reactions of metabolism. 5
   b. Give brief account on several causes of drug interaction and incompatibilities. Describe chelation in detail. 5
   c. If pKa = 4 for an acidic drug, compare the urine/ plasma (U/P) ratio at urinary pH :
      (a) 4 , (b) 5 and (c) 6.

7. Write short notes on (any two): 5x2
   a. Nonlinear pharmacokinetics
   b. First pass effect
   c. Difference between sublingual and oral route of administration.

POKHARA UNIVERSITY

Year : 2014
Full Marks: 100
Pass Marks: 45
Time : 3 hrs.

Level: Bachelor Semester: IV
Programme: B.Pharm.
Course: Pharamaceutics IV (Dosage forms and formulations)

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks

Attempt all the questions:

1. a) Define ointments. Discuss about ointment bases with suitable examples. 5
   b) Write about advantage and disadvantage of different types of contact lenses. 5
   c) What are suppositories mention its type with suitable examples? 5
2. a) What are the various methods for enhancing percutaneous absorptions? 5
   b) Define ocular inserts. Explain about the isotonicity and viscosity requirement for ophthalmic preparations. 5
   c) Write about the route of drug transport through skin along with structure of skin. 7
3. a) Explain the principle of aerosol. Write about three phase aerosol system. 8
   b) Describe the filling operations of aerosols. 2+5
4. a) Define radiopharmaceuticals. Write about the main considerations in practice of nuclear pharmacy. 8
   b) Write about the recombinant DNA technology and the drug products that have been derived from it.
5. a) Explain how gene therapy is used in cancer treatment. 5
   b) How iontophoresis and phonophoresis improve the transdermal absorption of drugs? 5
   c) Write about the use of liposomes for drug delivery. 5
6. a) What is displacement value? Describe the physiologic factors that affect drug absorption from rectal suppositories. 7
   b) What are penetration enhancers? Explain two mechanisms by which they exhibit their action. 8
7. Write short notes on any **two:** 2×5
   a) Glycerogelatin
   b) Nasal decongestant solution
   c) Daclizumab

POKHARA UNIVERSITY

Level: Bachelor
Programme: B. Pharmacy
Course: Pharmaceutics IV (Dosage forms and Formulations B)

Semester – Fall
Year : 2014
Full Marks: 100
Pass Marks: 45
Time : 3hrs.

Candidates are required to give their answers in their own words as far as practicable.
The figures in the margin indicate full marks.
Attempt all the questions.

a. What is transdermal drug delivery system? Give its advantages and disadvantages. Write about design feature of transdermal drug delivery systems. 8
b. Define ointment. What are the factors to be considered in selecting an ointment base? 7
a. What are glycerogelatin and Liniments? Give suitable examples. 8
b. Describe about anti-infective, anti-inflammatory and analgesic ear preparations. 7
a. List the pharmaceutical requirements for the preparation of ophthalmic solutions and suspensions. Explain them in details. 7
b. What are pessaries? Describe the packaging and labelling of Pessaries. 8
a. Explain in brief about different types of ointment bases with suitable examples. 7
b. Define suppositories. Explain about different types of suppository bases. 8
a. Elucidate the various components of aerosol with suitable diagram. 8
b. Explain about two phase and three phase systems of aerosol. 7
a. What is the role of biotechnology in the production of drugs? Explain about monoclonal antibody technology. 8
b. Explain in details about novel drug delivery systems. 7

Write short notes on **any two:** 2×5

a. Radiation decay
b. Uses of radiopharmaceuticals
c. Positron emission tomography

POKHARA UNIVERSITY

Level: Bachelor Semester: IV Year : 2014
Programme: B.Pharm. Full Marks: 100
Course: Pharamaceutics IV (Dosage forms and formulations) Pass Marks: 45
Time : 3 hrs.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks

Attempt all the questions:

) Define ointments. Discuss about ointment bases with suitable examples. 5
) Write about advantage and disadvantage of different types of contact lenses. 5
) What are suppositories mention its type with suitable examples? 5
) What are the various methods for enhancing percutaneous absorptions? 5
) Define ocular inserts. Explain about the isotonicity and viscosity requirement for ophthalmic preparations. 5
c) Write about the route of drug transport through skin along with structure of skin. 5
a) Explain the principle of aerosol. Write about three phase aerosol system. 7
b) Describe the filling operations of aerosols. 8
) Define radiopharmaceuticals. Write about the main considerations in practice of nuclear pharmacy. 2+5
) Write about the recombinant DNA technology and the drug products that have been derived from it. 8
) Explain how gene therapy is used in cancer treatment. 5
) How iontophoresis and phonophoresis improve the transdermal absorption of drugs? 5
:) Write about the use of liposomes for drug delivery. 5
) What is displacement value? Describe the physiologic factors that affect drug absorption from rectal suppositories. 7
) What are penetration enhancers? Explain two mechanisms by which they exhibit their action. 8

Write short notes on any **two:** 2×5
) Glycerogelatin
) Nasal decongestant solution
:) Daclizumab

POKHARA UNIVERSITY

Year : 2014
Full Marks: 100
Pass Marks: 45
Time : 3 hrs.

Level: Bachelor Semester: Spring
Programme: B.Pharm.
Course: Pharmaceutics V(Biopharmaceutics A)

Candidates are required to give their answers in their own words as far as practicable.

The figures in the right margin indicate full marks

***Attempt all the questions*:**

a) Explain the different factors affecting drug dissolution for solid dosage form based on Noyes Whitney equation in detail. 5

b) Discuss in brief the factors that need to be considered in designing drug product. 5

c) How the polymorphism affects the bioavailability of drug and hence therapeutic outcome. 5

a) Describe briefly the importance of Henderson- Hasselbalch equation in explaining the absorption of drugs from gastro-intestinal tract with suitable examples 5

b) Discuss briefly the various routes of administration of drugs with suitable examples. 5

c) Drug A is to be administered to a 70 Kg patient at a rate of 2 mg/kg every 12 hrs by multiple i.m. injection. The drug has a half-life of 2.2 hrs and V of 0.2 L/Kg. Calculate the new dose or the new dosing interval of the drug in a patient with renal insufficiency, if the $t_{1/2}$ increases to 5 hrs. 5

a) Explain the dosing of drugs in infants and elderly. 5

b) A drug has an elimination $t_{1/2}$ of 6 hours and follows first-order kinetics. If a single 200-mg dose is given to an adult male patient (68 kg) by i.v. bolus injection, what percent of the dose is lost in 24 hours? 5

c) Phenytoin was administered to a patient at dosing rates of 150 and 300 mg/day, respectively. The steady-state plasma drug concentrations were 8.6 and 25.1 mg/L, respectively. Find the K_M and V_{max} of this patient. 5

a) Discuss the differences between physiological model and compartmental model. 5

b) Define the terms: Bioavailability, Bioequivalence and Therapeutic equivalence. Explain the factors which affect bioavailability of a drug. 5

c) Discuss briefly the various factors which influence the drug absorption from GIT with suitable examples. 5

a) Describe the pharmacokinetic methods of assessment of drug 8

bioequivalence is determined?

6. a) Justify the statement "two brands of drugs may not be bioequivalent even if they contain the same amount of active ingredients."

b) Write down the types of drug interactions with suitable examples.

7. Write short notes on **any two:**

c) Implication of polymorphism in dosage form design

d) Regulatory bioavailability requirement

e) Approach of in-vitro and in-vivo bioavailability testing

POKHARA UNIVERSITY

Aug 31, 2018

Level: Bachelor
Programme: B. Pharm.
Course: Pharmaceutics IV
(Dosage Forms and Formulation B)

Semester: Fall

Year : 2015
Full Marks: 100
Pass Marks: 45
Time : 3hrs.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

***Attempt all the questions*:**

ı)	Define creams and classify it. Discuss about ointment bases with suitable examples.	5
ı)	Explain the various considerations for drugs used in dermatology.	5
)	What are the compendia requirements for ointment?	5
)	What are transdermal drug delivery systems give its advantage and disadvantage? Write about design feature of transdermal drug delivery systems.	8
)	Describe the physiology and structure of skin with suitable diagram.	7
)	Describe the various types of contact lenses. Write down the considerations in the use of contact lenses.	8
)	What are the special requirements for ophthalmic preparations? Explain.	7
)	Explain the method of preparation of suppository by compression molding.	5
)	Define suppository and describe the factors affecting drug absorption from rectal suppository.	5
)	Define radiopharmaceuticals. Write down their applications with suitable examples.	5
)	Mention advantage and disadvantage of aerosols over other dosage forms. Write about its container and valve assembly.	8
)	Characterize the various aerosol system.	7
)	Explain gene therapy with examples.	5
)	Describe in brief Recombinant DNA Technology.	5
)	Write about novel drug delivery systems.	5

/rite short notes on **any two**: 5×2

- Collodions
- Otic Solution
- Positron emission tomography

POKHARA UNIVERSITY

Sep 04, 2015

Level: Bachelor
Programme: B. Pharm.
Course: Pharmaceutics V (Biopharmaceutics A)

Semester: Fall

Year : 2015
Full Marks: 100
Pass Marks: 45
Time : 3hrs.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Attempt all the questions:

a) Discuss briefly the various principles of drug absorption with suitable example. 8

b) Give brief introduction to different factors that will affect gastric emptying time. 7

a) Define the terms: bioavailability, chemical equivalence and therapeutic equivalence. Explain briefly the factors which affect bioavailability of a drug. 8

b) Derive the plasma concentration time relation in single compartment open model for a bolus IV dose based on first order kinetics. How do you calculate half life from the plasma concentration data? 7

a) Compare the intravenous route of administration with the intramuscular route of administration. 5

b) Determine the elimination and absorption half lives of drug X which showed the following plasma concentration data, after its oral administration (150 mg). 5

Time (hr.)	0.25	0.5	1.0	1.5	2.0	2.5	3.5	4.5	5.5	7.0
Con (mg/Lit.)	1.4	2.1	2.6	2.5	2.2	1.9	1.2	0.76	0.5	0.25

c) Explain the concept of biowaiver in bioavailability study. 5

a) Explain briefly the various pharmacokinetics processes with suitable examples. 8

b) What is renal function? How is it measured? 7

a) Differentiate between compartmental model and physiological model. 5

b) What is drug interaction? Explain briefly the mechanism of *in-vivo* drug interactions with suitable examples. 5

c) Describe *the in vitro* method of bioavailability testing.

6. a) What would be the dose for a 75-kg individual if a steady-state level of 2.0 mcg/mL is desired? Assume that the drug is given by intravenous bolus injection every 8 hours and the elimination half-life as 3 hours and the volume of distribution as 30% of body weight.

b) What is the importance of biopharmaceutical classification of drugs for designing a dosage form?

c) Discuss briefly the need of individualization of drug therapy.

7. Write short notes on **any two**:

a) Protein binding of drug

b) Regulatory bioavailability requirements

c) pH effect *in vitro* and *in vivo*

POKHARA UNIVERSITY

Level: Bachelor
Program: B.Pharm.
Course: Pharmaceutics III(Dosage forms and Formulations A)

Semester: Spring

Year : 2016
Full Marks: 100
Pass Marks: 45
Time : 3hrs.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Attempt all the questions.

) Explain about the importance of solubility in preformulation studies. 5

) Describe wet granulation method with advantages and disadvantages. 5

) List out the excipients used for the formulation of tablet. Explain briefly. 5

) Explain in detail about different methods for preparation of soft gelatin capsule. 7

) List out different types of tablet. Explain them in detail. 8

) List out different extraction methods for crude drugs. Differentiate between maceration and percolation. 2+5

) Explain about different liquids used in liquid preparations. 8

a) What are the instabilities encountered in suspension. Write the measure to avoid these instabilities. 2+6

b) Define emulsion. Explain different methods used for the preparation of emulsion. 1+6

a) Define pyrogen. Explain different methods for pyrogen testing. 1+7

b) What are the ideal properties of parenteral preparations? Write its advantages and disadvantages. 3+4

a) Describe small volume parenteral with suitable example. 5

b) What are the different routes for parenteral administration? Explain them. 5

c) What are the ideal candidates for sustained release formulation? Explain 5

Write short notes on **any two.** 2×5

a) Plastic as Packaging Materials

b) Replacement therapy

c) Effervescent granules

POKHARA UNIVERSITY

Level: Bachelor Semester: Fall Year : 2016
Programme: B.Pharm. Full Marks: 100
Course: Pharmaceutics V(Biopharmaceutics A) Pass Marks:45
Time : 3hrs.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Attempt all the questions:

1. a) Define biopharmaceutics and discuss its scope with suitable example. 5
   b) What is dissolution? Explain briefly two important laws/relations to determine the rate of dissolution? 5
   c) Discuss briefly the concept and application of biopharmaceutical classification system (BCS) of drugs with suitable examples. 5
2. a) Discuss briefly the various routes of administration of drugs with suitable example. 5
   b) Discuss the pH effect in vivo regarding drug interaction and incompatibilities. 5
   c) What do you mean by the term 'compartment' and 'open' in compartment modeling? A single compartment model cannot be sufficient to describe the behavior of drugs within the body. Explain. 5
3. a) Derive the plasma concentration time relation for a bolus IV dose of a drug, in single compartment open model, based on first order kinetics. Explain how this relation can be used to calculate the elimination half-life of the drug. 7
   b) Determine the elimination half life and volume of distribution of drug Z which showed the following plasma concentration data, after its oral administration (200 mg). 8

Time (hr.)	0.5	1.0	1.5	2.0	3.0	5.0	7.0	9.0
Concentration (mcg/ml)	34.5	43.5	42.0	39.0	28.5	15.0	8.3	4.5

4. a) Explain the significance of drug clearance. The normal dose of a drug is 200mg. If the function excreted unchanged in urine is 0.75, what would be the dose for a patient whose creatinine clearance is 13mg/min? Calculate the new dosing interval if the dosing frequency is every two hours. 8
   b) Describe briefly the process of drug distribution and metabolism in the human body with suitable example. 7

5. a) What is clearance? Estimate the creatinine clearance of 50 year old, 65 kg man with serum creatinine value 2mg%. Also calculate the renal function value.
   b) Describe the different renal route of drug excretion with specific example.
6. a) What do you mean by drug incompatibilities? Discuss chelation with example.
   b) What is drug interaction? Explain briefly the mechanism of in vivo drug interaction with suitable example.
   c) Explain the regulatory requirement bioavailability.
7. Write short notes on **any two:**
   a) In vivo- in-vitro correlation
   b) AUC method for bioavailability determination
   c) Non-linear pharmacokinetics

POKHARA UNIVERSITY

Level: Bachelor Semester: Fall Year : 2016
Programme: B.Pharm. Full Marks: 100
Course: Pharmaceutics IV (Dosage Forms and Formulation B) Pass Marks:45
Time : 3hrs.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Attempt all the questions:

1. a) Define creams and classify it. Discuss about ointment bases with suitable examples. 5
   b) What are penetration enhancers? Explain any two mechanisms by which penetration enhancer show its action. 5
   c) Mention factors that affect absorption of drugs from rectal suppositories explain briefly. 5
2. a) Explain the factors affecting percutaneous absorption. 7
   b) What are the approaches in designing TDDS. Explain any one. 8
3. a) Explain about the pharmaceutical requirements for ophthalmic preparations. 5
   b) Describe the packaging and storage of ophthalmic ointment. 5
   c) Explain the purpose for designing contact lenses. 5
4. a) Explain the methods used for preparation of suppositories. 8
   b) Explain the importance of calibration of suppository mold. Write the advantages and disadvantages of using suppositories. 7
5. a) Describe about the aerosol system operation with a suitable diagram. 5
   b) Explain about the method of filling of pharmaceutical aerosols. 5
   c) Describe about nebulizer used for nasal administration of drugs. 5
6. a) Write about novel drug delivery systems. 5
   b) Explain Gene therapy in cancer treatment. 5
   c) Describe the container and value assembly of pharmaceutical aerosol. 5
7. Write short notes on **any two:** 2×5
   a) Positron Emission Tomography
   b) Recombinant DNA technology
   c) Vesicular drug delivery

POKHARA UNIVERSITY

Level: Bachelor Semester: Spring Year : 2018
Programme: B. Pharm Full Marks: 100
Course: Pharmaceutics IV (Dosage forms and formulations B) Pass Marks: 45
Time : 3hrs.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Attempt all the questions:

a) Define and give the examples of dermatological dosage forms. Draw and labelled the structure of human skin. 8
b) How dermatological dosage forms penetrate through skin? What are the factors that affect the penetration of such dosage forms through skin? 7
c) What are divided powders? What are the excipients used in manufacturing of dermatological dosage forms? 8
d) What are the current technologies for Transdermal Drug Delivery systems? 7
e) Write the challanges that should be considered during design of ocular Drug Delivery. 8
f) What are the formulation approaches to improve ocular bioavailability? 7
g) Explain different methods for preparation of suppositories. 8
h) Mention the compendial requirements to be maintained by Quality control officer for suppository dosage forms. 7
i) Define pharmaceutical aerosols. Explain the various components of pharmaceutical aerosol system. 8
j) Differentiate between meter dose Inhaler and Dry powder Inhaler. list out the quality control methods for Aerosol system. 7
k) Define Gene therapy. How can you explain the statement "Gene therapy made possible for the cure of cancer". 8
l) Compare between different modes of radioactive decay with suitable examples. 7

hort Notes on **(any two):** 2×5

a) Future of novel drug delivery system
b) Contact lenses
c) Glycerogelatins