Shri. Vile Parle Kelavani Mandal's

Institute of Pharmacy, Dhule

Survey No. 499/1, Plot No.3, Behind Gurudwara, Mumbai Agra Highway

First Sessional Theory Examination 2020-2021

Subject	**:**	**Instrumentation Method of Analysis**	**Day & Date**	**:**	**20/10/2020**
Class	**:**	**Final Y. B. Pharmacy**	**Semester**	**:**	**VII**
Time	**:**	**13:30 – 15:00 hrs**	**Max. Marks**	**:**	**30**

Instructions: 1. All questions are compulsory.
2. Draw a well labelled diagram wherever necessary
3. Right hand side number indicates full marks

Q.1 Multiple Choice Questions [10]

i Evanscent wave are observed in_____
- a. UV Visible spectroscopy
- b. IR spectroscopy
- c. Atomic emission spectroscopy
- d. Nephloturbidometry

ii "-COOH" is an example of acidic auxochrome is also c/as ____ auxochrome.
- a. Positive
- b. Negative
- c. Neutral
- d. All of the above

iii The ratio between distance travelled by sample component and its corresponding standard are called as_____
- a. R_f Value
- b. R_x Value
- c. solvent front
- d. a & b both

iv Golay cells is _____ type of detector used in IR spectroscopy
- a. Photo conductivity
- b. Thermal detectors
- c. Photoelectric
- d. Semiconductor

v Beer's law fails to describe absorbance behavior of solution above _____ concentration
- a. 1 M
- b. 0.1 M
- c. 0.01M
- d. 10 M

vi Wavenumbers are expressed in _____
- a) Hz
- b) cm
- c) cm/sec
- d) cm^{-1}

vii Radial / Circular development technique can be observed in _____ chromatography.
- a. Paper
- b. Thin-Layer
- c. Electrophoresis
- d. None of the above

viii Lambert-Beer's law can be mathematically given as___
- a. $I_t=1_{0^{-Kt}}$
- b. Log (I_o/I_t) = a.c.t
- c. It=I0e-k'c
- d. All of above

ix The quantum mechanical energy levels observed in IR spectroscopy are those of _____
- a. Molecular vIbrations
- b. Electronic Transitions
- c. Pi Transitions
- d. None of the above

x When small change in concentration produce a greater change in absorbance is called as
- a. Positive deviation
- b. Negative deviation
- c. No deviation
- d. None of the above

Q.2. Answer the following short questions (*any two*) [10]

a Outline the principle, method and application of Column chromatography.

b Distinguish between fluorescence and phosphorescence.

c Write short note on atomic absorption spectroscopy.

Q.3. Answer in detail of following (*any one*) [10]

a Define EMR? Explain in detail about principle, instrumentation involved in UV-Visible spectroscopy. Add a note on various types of electronic transitions.

b Describe the principle, instrumentation and applications of IR spectroscopy. Add note on FTIR.

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First Sessional Theory Examination-(ODD SEM) 2023-2024

Subject	:	Instrumental Methods of Analysis (BP701T)	**Day & Date**	:	Mon 30/10/2023		
Class	:	Final Year B. Pharmacy	**Semester**	:	VII	***Write Your Seat No. Here***	
Time	:	02:30 pm – 04:00 pm	**Max. Marks**	:	30		

Instructions:	*1. All questions are compulsory* *2. Draw a well labeled diagram wherever necessary* *3. Right hand side number indicates full marks* *4. Do not write/tick on the question paper*

Q. I. Solve the following questions		**10 M**
1.	Draw the schematic diagram of double beam UV spectrophotometer (CO1, LL3).	
2.	State the Beers-Lambert's law and give its equation? (CO1, LL3).	
3.	Determine the concentration of the solution if, specific absorbance, $A^{1\%}{}_{1cm}$ =540 at 241 nm, A= 0.890, b =1 cm. (CO1, LL5).	
4.	Differentiate between Nephelometry and Turbidimetry (CO2, LL3).	
5.	Write the principle of gel electrophoresis (CO2, LL3).	

Q. II.	**Long Answers Question (Answer any 1 out of 2)** (CO2, LL5)	**10 M**
1.	Explain the sampling techniques and instrumentation in IR spectroscopy.	
2.	Explain the principle, instrumentation and applications of Atomic Absorption Spectroscopy.	
Q. III.	**Short Answers Question (Answer any 2 out of 3)** (CO1, LL5)	**10 M**
1.	Explain the different electronic transitions that occur in molecules after absorbing UV visible radiations	
2.	Explain the principle of fluorimetry using Jablonski diagram	
3.	Explain the types of quenching and factors responsible for quenching.	

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First Sessional Examination 2020-2021
(ODD SEM)

Subject & Subject Code: Industrial Pharmacy II BP 702T **Day & Date:** Tuesday **21/10/2020**
Class: Final Year B. Pharm **Semester: VII**
Time:1.30 – 3.00pm **Max. Marks**: **30**

Instructions: 1. All questions are compulsory
2. Draw a well labeled diagram wherever necessary
3. Right hand side number indicates full marks

QI Multiple Choice Questions (MCQs) **10**

1. Quality Risk Management (QRM) is mentioned in ICH guidelines……
   a. Q7, b. Q8, c. Q9, d. Q10
2. Innovation is defined as:
   a) the commercialization of a new product or process.
   b) the invention of a new product or process.
   c) a new product or process idea.
   d) the implementation of a new production method.
3. Which of the following is not in India
   a. APCTT. b. TBSE c. NDRC, d. NIST
4. SUPAC-MR Focus on
   a. Changes for amount of excipients in the drug product.
   b. Changes in non-release controlling excipients.
   c. Changes in release controlling excipients.
   d. change in the amount of the drug substance
5. Technological and commercial merit of IP should be assessed at a very early stage in order that successful commercialization can occur
   a. True b. False
6. The owner of a technological IP is called
   a. Licensee b. Licensor c. License d. None of above
7. Laboratory scale batch is generally…… than production batch
   a. 100-1000 times less b. 10-100 times less
   C. 1000-10000 times less d. 100-10000 times less
8. Small industrial development bank of India (SIDBI) was established on…..
   a. April2, 1990 b. April2, 1991 c. April2, 1992 d. April2, 1993
9. The transfer of technology between sites of different companies is called as
   a. Inter-company transfer, b. Intra-company transfer, c. intra site technology transfer d. None of these
10. In Exclusive license, a single licensee has the right to use the intellectual property, which cannot even be used by the owner. An exclusive license permits only the licensee and persons authorized by the licensee to exploit the invention
    a. True b. False

QII Long Answers (Answer any 1 out of 2) **10**

1. What is regulatory affairs? Explain roles and responsibility of regulatory affair professionals.
2. Explain objectives and significance of pilot plant. Discuss general considerations for pilot plant scale-up of liquid dosage form.

QIII Short Answers (Answer any 2 out of 3) **10**

1. Write short note on WHO guidelines for Technology Transfer.
2. Discuss various approved regulatory bodies and agencies for technology transfer agencies in India.
3. Write a note on guidelines or SUPAC-IR.

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First Sessional Theory Examination-(ODD SEM) 2023-2024

Subject	:	Industrial Pharmacy-II (BP702T)	**Day & Date**	:	Tuesday, 31/10/2023
Class	:	Final Year B. Pharmacy	**Semester**	:	VII
Time	:	2:30 to 4:00PM	**Max. Marks**	:	30

Instructions:
1. *All questions are compulsory*
2. *Draw a well labeled diagram wherever necessary*
3. *Right hand side number indicates full marks*

QI Objective Type Questions (5 x 2) = 5 x 2 = 10 (Answer all the questions) **10 M**

1. What is SUPAC *(CO1, LL2)*

2. Write GMP Consideration for Pilot Plant Scale-up *(CO1, LL2)*

3. Define *(CO1, LL1, CO2, LL1)*

a. Scalability b. Drug master file

4. What is Platform technologies *(CO2, LL5)*

5. Define the Tech Transfer process as per WHO *(CO2, LL5)*

QII Long Answers Question (Answer any 1 out of 2) ***(CO1, LL4)*** **10 M**

1. Enumerate in detail the various considerations for Solid dosage forms under Pilot plant scale-up

2. Enlist Pilot plant scale-up activities, Objectives, and Significance. Write in detail about

    1. SUPAC guidelines

    2. Platform Technology

QII Short Answers Question (Answer any 2 out of 3) ***(CO2, LL4)*** **10 M**

1. Enlist various parameters of the Technology transfer protocol. Write in brief about documentation.

2. Write in short about the TT agencies in India

3. Explain in brief about Premises and Equipment in technology transfer

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Class	:	Final Year B. Pharmacy	**Semester**	:	VII
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2. Enlist Pilot plant scale-up activities, Objectives, and Significance. Write in detail about
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    2. Platform Technology

QII Short Answers Question (Answer any 2 out of 3) ***(CO2, LL4)*** **10 M**

1. Enlist various parameters of the Technology transfer protocol. Write in brief about documentation.

2. Write in short about the TT agencies in India

3. Explain in brief about Premises and Equipment in technology transfer

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First Sessional Theory Examination 2020-2021

(Odd SEM)

Subject & Subject Code: Novel Drug Delivery System (BP 704T)
Day & Date: Friday, 23/10/2020
Class: Final Year B.Pharm **Semester:** VII
Time: 1.30 – 3.00 pm **Max. Marks**: 30

Instructions: 1. All questions are compulsory
2. Draw a well labeled diagram wherever necessary
3. Right hand side number indicates full marks

QI Multiple Choice Questions (MCQs) 10

1. Selection criteria of drug for CRDDS depends upon which pharmacokinetic parameter
   a. Therapeutic Index
   b. PK/PD relationship
   c. Half Life
   d. Partition coefficient
2. Which type of drug delivery system will referred as "Smart Drug Delivery System"?
   a. Controlled Drug Delivery System
   b. Sustained Drug Delivery System
   c. Extended Drug Delivery System
   d. Targeted Drug Delivery System
3. Type of polymer display better solvent permeability / solubility is
   a. Cross linked Polymer
   b. Branched Polymer
   c. Linear Polymer
   d. Thermoplastic polymer
4. The matrix system used in diffusion approach were made up of
   a. Soluble Polymer
   b. Insoluble Polymer
   c. Erodible Polymer
   d. Impermeable Polymer with Pores
5. Magnesium sulphate were used as osmogen in which type of osmotic pump
   a. Rose Nelson osmotic pump
   b. Higuchi Leeper osmotic pump
   c. Higuchi Theeuwes osmotic pump
   d. Parentral osmotic pump
6. Fluidization of core particle is principle of which method of microencapsulation

a. Coacervation phase separation
b. Spray drying
c. Spray congealing
d. Air suspension technique

7. Theory describes interpenetration of the mucoadhesive polymer and substrate to create semipermenant adhesive bond is
a. Wetting theory
b. Diffusion theory
c. Electronic theory
d. Fracture theory

8. Most widely used chemical penetration enhancer leads to denaturation of skin protein in TDDS devise is
a. Propylene Glycol
b. Dimethyl acetamide
c. Dimethyl Sulfoxide
d. Air suspension technique

9. A process of transdermal drug delivery system use voltage gradient to transfer ionic drug molecule is
a. Iontophoresis
b. Sonophoresis
c. Electroporation
d. Laser ablation

10. Types of system contain drug with gel-forming hydrocolloids, which allow them to remain buoyant on the stomach content
a. High density GRDDS
b. Gastro-adhesive GRDDS
c. Floating drug delivery system
d. Inflatable drug delivery system

QII Long Answers (Answer any 1 out of 2) **10**

1. Describe in detail about Air Suspension Technique & Spray Drying method of Microencapsulation.
2. Give classification of controlled release drug delivery system and Explain in brief about selection criteria of drug for CRDDS.

QIII Short Answers (Answer any 2 out of 3) **10**

1. Explain in detail about Diffusion approach for design of CRDDS.
2. Confer in brief about types of osmotic pump or theories of mucoadhesion
3. Elucidate in detail about formulation approach of Transdermal drug delivery system device.

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Mapping of Course Outcome with First Sessional Exam

Course Outcome	Question	Marks
CO 7041: Outline and discuss the basic components and formulation approaches for Novel Drug Delivery System viz CDDS, TDDS, GRDDS, Nasopulmonary and Ocular therapeutics - **Level 2 (Comprehension)**	Q.1 – 2,3,4,8,9,10 Q 3 – 1,3	16
CO 7042: Demonstrate the criteria for selection of drug and polymer to design various Novel Drug Delivery System - **Level 3 (Application)**	Q 1 - 1 Q 2 - 2	11
CO 7043: Illustrate the concept, theories, development and types of osmotic pump, occular inserts, intrauterine devices, mucosal DDS and methods of microencapsulation - **Level 4 (Analysis)**	Q.1 – 5,6,7 Q 2 - 1 Q 3 - 2	18

First Sessional Theory Examination 2021-2022

Subject: Novel drug delivery system (BP704T)
Day & Date: Thursday&14/10/2021
Class: Final Year B.Pharm **Semester:** VII
Time: 10.30 am – 12.00 pm **Max. Marks**: 30

Instructions: 1. All questions are compulsory
2. Draw a well labeled diagram wherever necessary
3. Right hand side number indicates full marks

QI Multiple Choice Questions (MCQs): 10

1. In which delivery system the formulation is retained in the stomach
   a. Site-specific drug delivery system b. Controlled drug delivery system
   c. Oral drug delivery system d. Gastro-retentive drug delivery system

2. Density of gastric content is g/cm^2
   a. 2.005 b. 1.004
   b. 3.005 d. 5.004
3. The body's natural immune system is used in which type of targeting.
   a) Active b) Passive
   c) physical d) Dual
4. Size range of liposome is
   a. 25-5000nm b. 1-100nm
   c. 10-100nm d. 5000-10000nm
5. Pilo 20 is marketed preparation of
   a. lacrisert b. SODI c. Ocusert d. Minidisc
7. Pre-corneal constrain is
   a. lacrimation b. tear dilution
   c. solution drainage d. All of the above
8. First IUD was developed in the year
   a. 1890 b. 1960 c. 1909 d. 1920
9. Copper-T is useful in
   a. Contraception b. Auto-immune disease
   c. Copper deficiency d. Both b & c
10. Chitosan is which type of polymer used in ionotropic gelatin microencapsulation technique?
    a. Natural b. Synthetic c. Semisynthetic d. None of the above

Q.II Long Answers (Answer any 1 out of 2) 10

1. Explain the concept of targeted drug delivery system. State its advantage and dis-advantage. Write note on Liposomes.

2. Illustrate the application of targeted drug delivery system and write note on Nanoparticles.

Q.III Short Answers (Answer any 2 out of 3) 10

1.Write in brief various approaches for Gastro-retentive drug delivery system

2. Write note on Inhalers.

3. State various Intraocular barriers.

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First Sessional Theory Examination 2021-2022

Subject: Novel drug delivery system (BP704T) **Day & Date:** Thursday&14/10/2021
Class: Final Year B.Pharm **Semester:** VII
Time: 10.30 am – 12.00 pm **Max. Marks**: 30

Instructions: 1. All questions are compulsory
2. Draw a well labeled diagram wherever necessary
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QI Multiple Choice Questions (MCQs): 10

1. Selection criteria of drug for SRDDS depends upon which pharmacokinetic parameter
   a. Therapeutic Index b. PK/PD relationship c. Half Life d. partition coefficient
2. Which type of drug delivery system will referred as "Smart Drug Delivery System"?
   a. Sustained drug delivery system b. Controlled drug delivery system
   c. Targeted drug delivery system d. Extended drug delivery system
3. The type of polymer display better solvent permeability / solubility is
   a. Cross linked Polymer b. Branched Polymer
   b. Linear Polymer d. Thermoplastic polymer
4. Which of the following characteristics is suitable for transdermal drug delivery system?
   a) Large drug dose b) Large molecular size
   c) Drugs with narrow therapeutic indices d) Drugs which are metabolized in the skin
5. The type of copolymer formed by the reaction of linear polymer with monomeric unit is known as
   a. Graft copolymer b. Random copolymer
   c. Alternate copolymer d. Block copolymer
6. Solvent evaporation is which type of microencapsulation technique
   a. Chemical b. Physical c. Physico-chemical d. None
7. Following are the theories of microencapsulation
   a. Wetting theory b. adsorption theory
   c. Fracture theory d. Diffusion theory
8. Nitro-dur is used for
   a. Contraception b. Diabetes c. Angina pectoris d. Ocular therapy
9. Factors affecting mucoadhesion are
   a. Flexibility of polymer chain b. Mucin turn over
   c. pH of substrate polymer interfaced. d. All of the above
10. Chitosan is which type of polymer used in ionotropic gelatin microencapsulation technique?
    a. Natural b. Synthetic c. Semisynthetic d. None of the above

Q.II Long Answers (Answer any 1 out of 2) 10

1. Classify sustained release drug delivery system based on design approach. Explain in detail about selection criteria of drug for Controlled drug delivery system.

2. Elucidate in detail the four types of formulation approaches for Transdermal drug delivery devices

Q.III Short Answers (Answer any 2 out of 3) 10

1. Explain the Air suspension technique of microencapsulation.

2. Write the theories have been proposed to explain the fundamental mechanism of bio-adhesion /muco-adhesion.

3. Discuss in brief about osmotic pump.

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Second Sessional Theory Examination 2021-2022

Subject: Novel drug delivery system (BP704T) **Day & Date:** Thursday &16/12/2021
Class: Final Year B.Pharm **Semester:** VII
Time: 1.30 pm – 3.00 pm **Max. Marks**: 30

Instructions: 1. All questions are compulsory
2. Draw a well labeled diagram wherever necessary
3. Right hand side number indicates full marks

QI Multiple Choice Questions (MCQs): **10**

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a. Site-specific drug delivery system
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2. Density of gastric content is g/cm^2
a. 2.005 b. 1.004
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a.1890 b. 1960 c. 1909 d. 1920

8. Copper-T is useful in
a.Contraception b. Auto-immune disease
c. Copper deficiency d. Both b & c

9. Which of the following is not an advantage of Dry powder inhaler?
a. Propellant Free b. Greater Dose accuracy c. Lesser formulation problems d. Greater Chemical Stability

10. Bile salts like sodium deoxycholate, Sodium glycocholate, are used in nasal drug delivery systems as a,
a.Absorption enhancers b. Bio-adhesive c. propellant d. anti-allergic

Q.II Long Answers (Answer any 1 out of 2) **10**

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2. Illustrate the application of targeted drug delivery system and write note on Nanoparticles.

Q.III Short Answers (Answer any 2 out of 3) **10**

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2. Write note on Inhalers.
3. State various Intraocular barriers.

First Sessional Theory Examination 2021-2022

Subject: Novel drug delivery system (BP704T)
Day & Date: Thursday&14/10/2021
Class: Final Year B.Pharm **Semester:** VII
Time: 10.30 am – 12.00 pm **Max. Marks**: 30

Instructions: 1. All questions are compulsory
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Q.II Long Answers (Answer any 1 out of 2) **10**

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2. Elucidate in detail the four types of formulation approaches for Transdermal drug delivery devices

Q.III Short Answers (Answer any 2 out of 3) **10**

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Second Sessional Theory Examination 2021-2022

Subject: Novel drug delivery system (BP704T) **Day & Date:** Thursday &16/12/2021
Class: Final Year B.Pharm **Semester:** VII
Time: 1.30 pm – 3.00 pm **Max. Marks**: 30

Instructions: 1. All questions are compulsory
2. Draw a well labeled diagram wherever necessary
3. Right hand side number indicates full marks

QI Multiple Choice Questions (MCQs): **10**

1. In which delivery system the formulation is retained in the stomach
a. Site-specific drug delivery system
b. Controlled drug delivery system
c. Oral drug delivery system
d. Gastro-retentive drug delivery system

2. Density of gastric content is g/cm^2
a. 2.005 b. 1.004
c. 3.005 d. 5.004

3. The body's natural immune system is used in which type of targeting.
a) Active b) Passive
c) physical d) Dual

4. Size range of liposome is
a. 25-5000nm b. 1-100nm
c. 10-100nm d. 5000-10000nm

5. Pilo 20 is marketed preparation of
a. lacrisert b. SODI c. Ocusert d. Minidisc

6. Pre-corneal constrain is
a.lacrimation b. tear dilution
c. solution drainage d. All of the above

7. First IUD was developed in the year
a.1890 b. 1960 c. 1909 d. 1920

8. Copper-T is useful in
a.Contraception b. Auto-immune disease
c. Copper deficiency d. Both b & c

9. Which of the following is not an advantage of Dry powder inhaler?
a. Propellant Free b. Greater Dose accuracy c. Lesser formulation problems d. Greater Chemical Stability

10. Bile salts like sodium deoxycholate, Sodium glycocholate, are used in nasal drug delivery systems as a,
a.Absorption enhancers b. Bio-adhesive c. propellant d. anti-allergic

Q.II Long Answers (Answer any 1 out of 2) **10**

1. Explain the concept of targeted drug delivery system. State its advantage and dis-advantage. Write note on Liposomes.
2. Illustrate the application of targeted drug delivery system and write note on Nanoparticles.

Q.III Short Answers (Answer any 2 out of 3) **10**

1.Write in brief various approaches for Gastro-retentive drug delivery system
2. Write note on Inhalers.
3. State various Intraocular barriers.

First Sessional Theory Examination 2021-2022

Subject: Novel drug delivery system (BP704T)
Day & Date: Thursday&14/10/2021
Class: Final Year B.Pharm **Semester:** VII
Time: 10.30 am – 12.00 pm **Max. Marks**: 30

Instructions: 1. All questions are compulsory
2. Draw a well labeled diagram wherever necessary
3. Right hand side number indicates full marks

QI Multiple Choice Questions (MCQs): **10**

1. Selection criteria of drug for SRDDS depends upon which pharmacokinetic parameter
   a. Therapeutic Index b. PK/PD relationship c. Half Life d. partition coefficient
2. Which type of drug delivery system will referred as "Smart Drug Delivery System"?
   a. Sustained drug delivery system b. Controlled drug delivery system
   c. Targeted drug delivery system d. Extended drug delivery system
3. The type of polymer display better solvent permeability / solubility is
   a. Cross linked Polymer b. Branched Polymer
   b. Linear Polymer d. Thermoplastic polymer
4. Which of the following characteristics is suitable for transdermal drug delivery system?
   a) Large drug dose b) Large molecular size
   c) Drugs with narrow therapeutic indices d) Drugs which are metabolized in the skin
5. The type of copolymer formed by the reaction of linear polymer with monomeric unit is known as
   a. Graft copolymer b. Random copolymer
   c. Alternate copolymer d. Block copolymer
6. Solvent evaporation is which type of microencapsulation technique
   a. Chemical b. Physical c. Physico-chemical d. None
7. Following are the theories of microencapsulation
   a. Wetting theory b. adsorption theory
   c. Fracture theory d. Diffusion theory
8. Nitro-dur is used for
   a. Contraception b. Diabetes c. Angina pectoris d. Ocular therapy
9. Factors affecting mucoadhesion are
   a. Flexibility of polymer chain b. Mucin turn over
   c. pH of substrate polymer interfaced. d. All of the above
10. Chitosan is which type of polymer used in ionotropic gelatin microencapsulation technique?
    a. Natural b. Synthetic c. Semisynthetic d. None of the above

Q.II Long Answers (Answer any 1 out of 2) **10**

1. Classify sustained release drug delivery system based on design approach. Explain in detail about selection criteria of drug for Controlled drug delivery system.

2. Elucidate in detail the four types of formulation approaches for Transdermal drug delivery devices

Q.III Short Answers (Answer any 2 out of 3) **10**

1. Explain the Air suspension technique of microencapsulation.

2. Write the theories have been proposed to explain the fundamental mechanism of bio-adhesion /muco-adhesion.

3. Discuss in brief about osmotic pump.

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First Sessional Theory Examination-(ODD SEM) 2023-2024

Subject	:	Novel Drug Delivery Systems (BP704T)	**Day & Date**	:	Thursday, 02/11/2023		
Class	:	Final Year B.Pharm	**Semester**	:	**VIII**	***Write Your Seat No. Here***	
Time	:	2.30 pm – 4.00 pm	**Max. Marks**	:	30		

Instructions: *1. All questions are compulsory* *2. Draw a well labeled diagram wherever necessary* *3. Right hand side number indicates full marks* *4. Do not write/ tick on the question paper*

QI	**Objective Type Questions (5 x 2) = 5 x 2 = 10 (Answer all the questions)**	**10 M**
1.	Give the significance of elimination half-life ($t_{1/2}$) in design of controlled release formulation. ***(LL3, CO1)***	
2.	Differentiate the type of copolymer based on degree of reactivity between monomer. ***(LL4, CO1)***	
3.	Define the term :- i) Controlled Release ***(LL1, CO1)*** ii) Microencapsulation ***(LL1, CO2)***	
4.	Explain the principal difference between spray drying and spray congealing **or** Explain diffusion of drug by iontophoresis principle of permeation enhancement. ***(LL3, CO2)***	
5.	Enlist the principle involved in release of drug for implantable delivery system ***(LL3, CO2)***	
QII	**Long Answers Question (Answer any 1 out of 2)**	**10 M**
1.	Explicate in detail the selection criteria for drug in design of sustained release drug delivery system. ***(LL5, CO2)***	
2.	Elucidate in detail about different design approaches of matrix type-controlled release drug delivery system. ***(LL5, CO1)***	
Q.III	**Short Answers Question (Answer any 2 out of 3) -**	**10M**
1.	Describe about the principle involved in mucoadhesion of drug with gastrointestinal barrier. ***(LL3, CO2)***	
2.	Illustrate in brief about release of drug from different types of osmotic pump. ***(LL2, CO2)***	
3.	Explain in brief about air suspension technique **or** coacervation phase separation technique by temperature change method of microencapsulation. ***(LL2, CO1)***	

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First Sessional Theory Examination-(ODD SEM) 2023-2024

Subject	:	Novel Drug Delivery Systems (BP704T)	**Day & Date**	:	Thursday, 02/11/2023		
Class	:	Final Year B.Pharm	**Semester**	:	**VIII**	***Write Your Seat No. Here***	
Time	:	2.30 pm – 4.00 pm	**Max. Marks**	:	30		

Instructions: *1. All questions are compulsory* *2. Draw a well labeled diagram wherever necessary* *3. Right hand side number indicates full marks* *4. Do not write/ tick on the question paper*

QI	**Objective Type Questions (5 x 2) = 5 x 2 = 10 (Answer all the questions)**	**10 M**
1.	Give the significance of elimination half-life ($t_{1/2}$) in design of controlled release formulation. ***(LL3, CO1)***	
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1.	Explicate in detail the selection criteria for drug in design of sustained release drug delivery system. ***(LL5, CO2)***	
2.	Elucidate in detail about different design approaches of matrix type-controlled release drug delivery system. ***(LL5, CO1)***	
Q.III	**Short Answers Question (Answer any 2 out of 3) -**	**10M**
1.	Describe about the principle involved in mucoadhesion of drug with gastrointestinal barrier. ***(LL3, CO2)***	
2.	Illustrate in brief about release of drug from different types of osmotic pump. ***(LL2, CO2)***	
3.	Explain in brief about air suspension technique **or** coacervation phase separation technique by temperature change method of microencapsulation. ***(LL2, CO1)***	

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First Sessional Theory Examination-(ODD SEM) 2023-2024

Subject	:	Novel Drug Delivery Systems (BP704T)	**Day & Date**	:	Thursday, 02/11/2023		
Class	:	Final Year B.Pharm	**Semester**	:	**VIII**	***Write Your Seat No. Here***	
Time	:	2.30 pm – 4.00 pm	**Max. Marks**	:	30		

Instructions: *1. All questions are compulsory* *2. Draw a well labeled diagram wherever necessary* *3. Right hand side number indicates full marks* *4. Do not write/ tick on the question paper*

QI	**Objective Type Questions (5 x 2) = 5 x 2 = 10 (Answer all the questions)**	**10 M**
1.	Give the significance of elimination half-life ($t_{1/2}$) in design of controlled release formulation. ***(LL3, CO1)***	
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Q.III	**Short Answers Question (Answer any 2 out of 3) -**	**10M**
1.	Describe about the principle involved in mucoadhesion of drug with gastrointestinal barrier. ***(LL3, CO2)***	
2.	Illustrate in brief about release of drug from different types of osmotic pump. ***(LL2, CO2)***	
3.	Explain in brief about air suspension technique **or** coacervation phase separation technique by temperature change method of microencapsulation. ***(LL2, CO1)***	

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First Sessional Theory Examination 2020-2021

(Odd SEM)

Subject & Subject Code: Pharmacy Practice BP703T

Day & Date: Thursday 22/10/2020 Class: Final.Y.B.Pharma

Semester: VII Time: 1.30 P.M TO 3.00 P.M Max. Marks: 30

Instructions: 1. All questions are compulsory
2. Draw a well labeled diagram wherever necessary
3. Right hand side number indicates full marks

QI Multiple Choice Questions (MCQs) 10

1. Which of the following mentioned hospital setup based on the regionality
a. Special hospitals
b. Voluntary agency hospitals
c. Allopathic hospital
d. Upazila Health Complex

2. _____ is the head of administrative services belong to the pharmacy department
a. COO
b. Vice president
c. Deputy General Manager
d. CEO

3. This is extremely successful strategies for improving adherence minimization of adverse effects of medications
a. Approach each patient individually to determine the level of adherence
b. Dosing simplification
c. Reviewing of every prescription and every order
d. All of the above

4. The license for the retail sale of drugs other than the ones mentioned in the Schedule C, C1, and X is issued in
a. Form No. 20
b. Form No. 21
c. Form No. 20A
d. Form No. 21F

5. For Inpatient Department Doctor always write a drug order in_____
a. Patient Home file
b. Online prescription
c. Drug Chart
d. None of Above

6. Decision for addition and deletion of the drug from hospital formulary is taken by
a. Pharmacy manager
b. Hospital Management
c. Pharmacy Therapeutic Committee
d. None of the above

7. Patient medication history interview provides valuable insights in_____
a. Patient's allergic tendencies
b. Adherence to pharmacological and non-pharmacological treatments
c. Self-medication with complementary and alternative medicines
d. All of the above

8. Use of drug concentration measurements in body fluids as an aid to the management of drug therapy for the cure is known as
a. Medication Adherence
b. Therapeutic Drug Monitoring
c. Medication history Review
d. Therapeutic Window

9. This is the Example of a tertiary source of drug information
a. Review article
b. PubMed
c. Proceedings of conferences
d. Pharmacopeias

10. This is a very crucial step of patient counseling to get Knowledge about his or her health problems and medications
a. Introduction to patient
b. Assessing the patient's condition
c. Opening of session
d. Closing of discussion

QII Long Answers (Answer any 1 out of 2) 10

1. Illustrate in detail about organization structure of Hospital Pharmacy and Explain location, the layout of OP Pharmacy along with staff requirement.

2. What do mean by drug distribution system, give the process design of drug distribution to the inpatient department.

QIII Short Answers (Answer any 2 out of 3) 10

1. Illustrate the adverse drug reaction and give its classification

2. Outline the causes of medication non-adherence and give role of pharmacist in the medication adherence

3. Give the design and constitution of the Pharmacy therapeutic Committee

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First Sessional Theory Examination 2021-2022
(Odd SEM)

Subject & Subject Code: Pharmacy Practice BP703T

Day & Date: Wednesday 13/10/2021 **Class: F.Y.B.Pharma** **Semester: VII**

Time: 10.30 A.M TO 12.00 P.M **Max. Marks: 30**

Instructions: 1. All questions are compulsory
2. Draw a well labeled diagram wherever necessary
3. Right hand side number indicates full marks

QI Multiple Choice Questions (MCQs) **10**

1. The concept of foundation of hospital was given by
a. Indians
b. Arabs
c. Kiwis
d. French

2. _____ is the head of administrative services belong to the pharmacy department
a. COO
b. Vice president
c. Deputy General Manager
d. CEO

3. In India, under public health system medical colleges and advanced medical research institutes Provides
a. Primary Care
b. Secondary Care
c. Tertiary Care
d. None of these.

4. In layout deign of the hospital pharmacy restricted and non-restricted area mainly found in
a. IP Pharmacy Services
b. OP Pharmacy Services
c. Both of Above
d. None of Above

5. For Inpatient Department Doctor always write a drug order in_____
a. Patient Home file
b. Online prescription
c. Drug Chart
d. Physical Prescription

6. The hospital formulary system assists a drug under their non-proprietary or proprietary (brand) names in instance where drug have both names.
a. Procuring
b. Prescribing
c. Dispensing
d. All

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7. The hospital formulary is a list of _____preparations.
a. Pharmaceutical
b. Chemical
c. Food
d. None of these

8. Use of drug concentration measurements in body fluids as an aid to the management of drug therapy for the cure is known as
a. Medication Adherence
b. Medication history Review
c. Therapeutic Drug Monitoring
d. Therapeutic Window

9. _____is very educative and useful to the members of "Hearth Care Team".
a. Formulary
b. Pharmacopoeia
c. Reference Book
d. None of these

10. _____means how well the patient follows the instructions of when and how to take the medication.
a. Description
b. Instruction
c. Compliance
d. None of these

QII Long Answers (Answer any 1 out of 2) **10**

1. Explain the adverse drug reaction give its classification and different categories of ADR. Add a note on ADR Monitoring and reporting.

2. Explain about drug distribution system, give the process design of drug distribution to the inpatient department inside hospital.

QIII Short Answers (Answer any 2 out of 3) **10**

1. What is drug formulary and explain in detail about acquisition of drug formulary.

2. Explain in brief about Therapeutic Drug monitoring.

3. Give the design and constitution of the Pharmacy therapeutic Committee.

Subject-in-charge
Rathod
Mr. Sumit Rathod

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First Sessional Theory Examination-(ODD SEM) 2023-2024

Subject	:	Pharmacy Practice (BP703T)	**Day & Date**	:	Wed, 01/11/2023	
Class	:	Final Year B. Pharmacy	**Semester**	:	VII	***Write Your Seat No. Here***
Time	:	2.30 pm – 4:00 pm	**Max. Marks**	:	30	

Instructions: *1. All questions are compulsory 2. Draw a well-labeled diagram wherever necessary 3. Right-hand side number indicates full marks 4. Do not write/tick on the question paper*

Q. I: Objective type questions (solve all questions)		**10 M**
1	Draw Well labelled diagram for inpatient pharmacy (IP Pharmacy) (*CO1, LL2)*	
2	What is drug interaction and enlist different types of drug interactions (*CO1, LL4*)	
3	Define hospital formulary and drug therapeutic committee (*CO2, LL3*)	
4	Enlist the name of a drug which required Therapeutic Drug Monitoring (*CO2, LL3*)	
5a.	Give the causes for medication non-adherence (*CO2, LL2*) (1 mark)	
5b.	Enlist the different licenses required for retail pharmacy (*CO1, LL3*) (1 mark)	

Q. II: Long Answers Questions (Answer any 1 out of 2)	**10 M**
1. Define the drug distribution system, and give the drug distribution process to OP Pharmacy. Add a short note on medication management procedure (MMP) (*CO1, LL5)* 2. Define adverse drug reactions and classification of ADR. Add a brief note on the Naranjo ADR probability assessment scale *(CO1, LL5)*	

Q. III: Short Answers Questions (Answer any 2 out of 3)	**10 M**
1. Add a brief note on therapeutic drug monitoring (*CO2, LL4)* 2. Explain in brief about the patient medication history interview *(CO2, LL4)* 3. Explain in detail about location layout of retail pharmacy *(CO2, LL3)*	

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First Sessional Theory Examination-(ODD SEM) 2023-2024

Subject	:	Pharmacy Practice (BP703T)	**Day & Date**	:	Wed, 01/11/2023	
Class	:	Final Year B. Pharmacy	**Semester**	:	VII	***Write Your Seat No. Here***
Time	:	2.30 pm – 4:00 pm	**Max. Marks**	:	30	

Instructions: *1. All questions are compulsory 2. Draw a well-labeled diagram wherever necessary 3. Right-hand side number indicates full marks 4. Do not write/tick on the question paper*

Q. I: Objective type questions (solve all questions)		**10 M**
1	Draw Well labelled diagram for inpatient pharmacy (IP Pharmacy) (*CO1, LL2)*	
2	What is drug interaction and enlist different types of drug interactions (*CO1, LL4*)	
3	Define hospital formulary and drug therapeutic committee (*CO2, LL3*)	
4	Enlist the name of a drug which required Therapeutic Drug Monitoring (*CO2, LL3*)	
5a.	Give the causes for medication non-adherence (*CO2, LL2*) (1 mark)	
5b.	Enlist the different licenses required for retail pharmacy (*CO1, LL3*) (1 mark)	

Q. II: Long Answers Questions (Answer any 1 out of 2)	**10 M**
1. Define the drug distribution system, and give the drug distribution process to OP Pharmacy. Add a short note on medication management procedure (MMP) (*CO1, LL5)* 2. Define adverse drug reactions and classification of ADR. Add a brief note on the Naranjo ADR probability assessment scale *(CO1, LL5)*	

Q. III: Short Answers Questions (Answer any 2 out of 3)	**10 M**
1. Add a brief note on therapeutic drug monitoring (*CO2, LL4)* 2. Explain in brief about the patient medication history interview *(CO2, LL4)* 3. Explain in detail about location layout of retail pharmacy *(CO2, LL3)*	

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Second Sessional Theory Examination 2020-2021

Subject	**:**	**Instrumentation Method of Analysis**	**Day & Date**	**:**	**10/12/2020**
Class	**:**	**Final Y. B. Pharmacy**	**Semester**	**:**	**VII**
Time	**:**	**13:30 – 15:00 hrs**	**Max. Marks**	**:**	**30**

Instructions: 1. All questions are compulsory.
2. Draw a well labelled diagram wherever necessary
3. Right hand side number indicates full marks

Q.1 Multiple Choice Questions [10]

i One of the following do not represent Gel electrophoresis method
a. Horizontal b. Vertical
c. Diagonal d. All of the above

ii _____ is highly sensitive method
a. GC b. HPLC
c. TLC d. All of above

iii In Gas Chromatography, _____ is commonly used as supporting material in packed column
a. Silica Gel b. Diatomaceous earth
c. a & b both d. None

iv Sephadex, an ion exchange resin based on _____
a. Agarose b. Dextrin
c. Cellulose d. None

v In HPLC, the mobile phase should pass through a column at a pressure of __
a. 500-1000 psi b. 100-300 psi
c. 1000-3000psi d. 2000-2500 psi

vi Size exclusion chromatography is also called as
a. Affinity chromatography b. Paper chromatography
c. Thin layer chromatography d. None of the above

vii Mild denaturating agents can be used to _____
a. attach macromolecule to ligand b. remove macromolecule from ligand
c. a&b both d. None

viii Rheodyne injector is used in ___
a. HPLC b. GC
c. HPTLC d. None of above

ix SDS-PAGE is technique used to separate proteins according to their _____
a. nucleic motility b. electrophoretic motility
c. nucleic mobility d. electrophoretic mobility

x _____ detector is not used in HPLC
a. UV visible b. Fluorescence
c. Electrochemical d. Electron Capture

Q.2. Answer the following short questions (*any two*) [10]

a Outline the principle, instrumentation and application used in Gel chromatography.

b Discuss the classification, and mechanism of action of various ion exchange resins.

c Write short note on Affinity chromatography.

Q.3. Answer in detail of following (*any one*) [10]

a Depict the types of Chromatographic technique. Explain in detail about principle, instrumentation involved in Gas Chromatography / HPLC.

b Enlist the factors affecting electrophoretic mobility. Explain in details about methodologies and applications used in Paper and Capillary Electrophoresis.

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Second Sessional Theory Examination-(ODD SEM) 2023-2024

Subject	**:**	Instrumental Methods of Analysis (BP701T)	**Day & Date**	**:**	Mon,18/12/2023
Time	**:**	02:30 pm – 04:00 pm	**Max. Marks**	**:**	30

Instructions: *1. All questions are compulsory* *2. Draw a well labeled diagram wherever necessary* *3. Right hand side number indicates full marks* *4. Do not write/tick on the question paper*

Q. I.	**Solve the following questions**	**10 M**
1.	Calculate the Rf value if the distance travelled by solute and solvent from origin line are 3.7 cm and 9 cm respectively. (CO3, LL5)	
2.	Why derivatization techniques are required in GC? Enlist derivatization methods used in GC. (CO3, LL4)	
3.	Enlist the factors affecting Rf value and factors affecting Ion exchange separation. (CO3, LL2, /CO4, LL2)	
4.	Give the principle of affinity chromatography.	
5.	Differentiate between normal phase and reversed phase chromatography.	
Q. II.	**Long Answers Question (Answer any 1 out of 2)** (CO3, LL5)	**10 M**
1.	Explain the principle and instrumentation of Gas chromatography.	
2.	Explain the steps involved in TLC. Differentiate between Paper chromatography and TLC.	
Q. III.	**Short Answers Question (Answer any 2 out of 3)** (CO4, LL5)	**10 M**
1.	Write the principle, types and applications of Ion exchange chromatography.	
2.	Draw a neat, labeled schematic diagram of HPLC. Give the advantages, disadvantages and applications of HPLC	
3.	Deduce the principle, methodology and applications of size exclusion chromatography	

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Mapping of Course Outcome with Second Sessional Theory Examination (2023-2024)

Subject: Instrumental Methods of Analysis (BP701T)

Course Outcome	Question	Marks
C701.3: Understand the basics concept of chromatography as a separation technique and capable of distinguishing various techniques, principle and methodology of GC, TLC and Paper chromatography (*Level 5*)	Q. I – 1, 2, 3	25
	Q. II – 1, 2,	
C701.3: Understand the fundamentals of various sophisticated instrumental technique like HPLC, Ion exchange, gel, affinity chromatography and can apply this knowledge to different sample analysis. (*Level 5*)	Q. I – 3, 4, 5	20
	Q. III – 1, 2, 3	

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Second Sessional Theory Examination-(ODD SEM) 2023-2024

Subject	**:**	Instrumental Methods of Analysis (BP701T)	**Day & Date**	**:**	Mon,18/12/2023
Time	**:**	02:30 pm – 04:00 pm	**Max. Marks**	**:**	30

Instructions: *1. All questions are compulsory* *2. Draw a well labeled diagram wherever necessary* *3. Right hand side number indicates full marks* *4. Do not write/tick on the question paper*

Q. I.	**Solve the following questions**	**10 M**
1.	Calculate the Rf value if the distance travelled by solute and solvent from origin line are 3.7 cm and 9 cm respectively. (CO3, LL5)	
2.	Why derivatization techniques are required in GC? Enlist derivatization methods used in GC. (CO3, LL4)	
3.	Enlist the factors affecting Rf value and factors affecting Ion exchange separation. (CO3, LL2, /CO4, LL2)	
4.	Give the principle of affinity chromatography.	
5.	Differentiate between normal phase and reversed phase chromatography.	
Q. II.	**Long Answers Question (Answer any 1 out of 2)** (CO3, LL5)	**10 M**
1.	Explain the principle and instrumentation of Gas chromatography.	
2.	Explain the steps involved in TLC. Differentiate between Paper chromatography and TLC.	
Q. III.	**Short Answers Question (Answer any 2 out of 3)** (CO4, LL5)	**10 M**
1.	Write the principle, types and applications of Ion exchange chromatography.	
2.	Draw a neat, labeled schematic diagram of HPLC. Give the advantages, disadvantages and applications of HPLC	
3.	Deduce the principle, methodology and applications of size exclusion chromatography	

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Mapping of Course Outcome with Second Sessional Theory Examination (2023-2024)

Subject: Instrumental Methods of Analysis (BP701T)

Course Outcome	Question	Marks
C701.3: Understand the basics concept of chromatography as a separation technique and capable of distinguishing various techniques, principle and methodology of GC, TLC and Paper chromatography (*Level 5*)	Q. I – 1, 2, 3	25
	Q. II – 1, 2,	
C701.3: Understand the fundamentals of various sophisticated instrumental technique like HPLC, Ion exchange, gel, affinity chromatography and can apply this knowledge to different sample analysis. (*Level 5*)	Q. I – 3, 4, 5	20
	Q. III – 1, 2, 3	

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Second Sessional Examination 2020-2021
(ODD SEM)

Subject & Subject Code: Industrial Pharmacy II BP 702T **Day & Date:** Tuesday **11/11/2020**
Class: Final Year B. Pharm **Semester: VII**
Time:1.30 – 3.00pm **Max. Marks**: **30**

Instructions: 1. All questions are compulsory
2. Draw a well labeled diagram wherever necessary
3. Right hand side number indicates full marks

QI Multiple Choice Questions (MCQs) **10**

1. Which of the following is NOT needed for an investigational new drug application?
   a. Animal pharmacology and toxicology b. Manufacturing information.
   c. Clinical protocols and Investigator Information d. Phase III trial data
2. How many people will be selected for phase II trial?
   a) 300-3000 people b. The whole market will be under surveillance
   c) 20-300 people d) 20-50 people
3. What is the term for the process that is used to prove that a drug is safe and effective in treating specific conditions in certain patient populations?
   a. Drug discovery b. Preclinical development
   c. The patent process d. Clinical development
4. In a six sigma improvement project the least experienced individuals are:
   a. black belt b. green belt c. Red Belts d. Master Black Belts
5. DMAIC is _____
   a. develop, multiply, analyze, improve, check
   b. define, muliply, analyze, improve, control
   c. define, measure, analyze, improve, control
   d. define, manufacture, analyze, improve, control
6. Deming's 4 step cycle for improvement is_____
   a. plan, do, check, act
   b. schedule, do, act, check
   c. do, act, check, monitor
   d. plan, control, act, sustain
7. A fishbone diagram is also known as a ._____
   a. cause-and-effect diagram b. poka-yoke diagram
   c. Kaizen diagram d. Taguchi diagram
8. Central drug Testing Laboratory is located at _____
   a. Kasauli b. Delhi c. Bangalore d. Lucknow
9. Which of the following is responsibility of state authority of CDSCO
   a. Regulatory control over the import of drugs
   b. Approval of new drugs and clinical trials
   c. Meetings of Drugs Consultative Committee (DCC) and Drugs Technical Advisory Board (DTAB)
   d. Regulation of manufacture, sale and distribution of Drugs
10. Form 11 license is issued for
    a. Export of drugs for examination, test or analysis
    b. Manufacture of drugs for the purpose of examination, test or analysis
    c. Import of drugs for examination, test or analysis
    d. Distribution of drugs for examination, test or analysis

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QII Long Answers (Answer any 1 out of 2) **10**

1. Describe in detail the New Drug Approval process.
2. Explain the concept of quality management systems in Pharmaceutical industry. Discuss various quality management tools.

QIII Short Answers (Answer any 2 out of 3) **10**

1. Explain Quality by Design.
2. Write a note on Clinical Research Protocol.
3. Write down organizational structure, roles and responsibilities of CDSCO.

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Mapping of Course Outcome with Second Sessional Exam

Course Outcome	Question	Marks
CO 702 3: Demonstrate the different laws and acts that regulate pharmaceutical industry. Describe the approval process and regulatory requirements of drug products. **(Level 3) (Application)**	Q.1 – 1,2,3 Q 2 – 1 Q 3- 1	18
CO 702 4: Explain the concept of quality management systems in Pharmaceutical industry. Analyze and implement various quality systems standards **(Level 3) (Application)**	Q 1 – 4,5,6,7 Q 2 - 2 Q 3 - 2	19
CO 702 5: Outline and describe the role and responsibility of regulatory agencies in the approval of drugs. Discuss the organization and responsibilities of national and state licensing authority. **(Level 1 & 2) (Knowledge & Comprehension)**	Q.1 – 8, 9, 10 Q 3 - 3	8

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Second Sessional Theory Examination-(ODD SEM) 2023-2024

Subject	:	Industrial Pharmacy-II (BP702T)	**Day & Date**	:	Tuesday, 19-12-2023
Class	:	Final Year B. Pharmacy	**Semester**	:	VII
Time	:	2.30 – 4.00pm	**Max. Marks**	:	30

Instructions:
1. *All questions are compulsory*
2. *Draw a well labeled diagram wherever necessary*
3. *Right hand side number indicates full marks*

QI Objective Type Questions (5 x 2) = 5 x 2 = 10 (Answer all the questions) **10 M**

1. Enlist Historical milestones of Regulatory Affairs *(CO3, LL2)*

2. Write phases of clinical trials *(CO3, LL2)*

3. Define *(CO3, LL1, CO4, LL1)*

a. NABL b. Investigator's Brochure

4. Enlist the responsibilities of CDSCO. *(CO4, LL1)*

5. Differentiate between ISO 9001 & ISO 14001 Series *(CO4, LL1)*

QII Long Answers Question (Answer any 1 out of 2) *(CO3, LL4)* **10 M**

1. What is NDA? Give its significance and describe process for NDA submission in USA and INDIA.

2. Summarize about

    1. Clinical research / BE studies, Clinical Research Protocols

    2. Explain role & responsibilities of Regulatory Affair Expert.

QII Short Answers Question (Answer any 2 out of 3) *(CO4, LL4)* **10 M**

1. Illustrate various parameters of OOS. Write in brief about documentation.

2. Summarize QMS in short

3. Explain in brief about COPP

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Subject	:	Industrial Pharmacy-II (BP702T)	**Day & Date**	:	Tuesday, 19-12-2023
Class	:	Final Year B. Pharmacy	**Semester**	:	VII
Time	:	2.30 – 4.00pm	**Max. Marks**	:	30

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Second Sessional Theory Examination 2020-2021

(ODD SEM)

Subject & Subject Code: Novel Drug Delivery System (BP 704T)
Day & Date: Monday, 14/12/2020
Class: Final Year B.Pharm **Semester:** VII
Time: 1.30 – 3.00 pm **Max. Marks**: 30

Instructions: 1. All questions are compulsory
2. Draw a well labeled diagram wherever necessary
3. Right hand side number indicates full marks

QI Multiple Choice Questions (MCQs) 10

1. The size range for nanoparticles drug delivery system is
   a. 1 – 10 nm
   b. 1 – 100 nm
   c. 1 – 1000 nm
   d. 100 – 1000 nm
2. The first report published by …….in 1902 describing targeted drug delivery system
   a. Dale E. Wurster
   b. Richard Feynman
   c. Paul Ehrlich
   d. Alexander Fleming
3. The primary route for absorption of drug through intraocular barriers
   a. Corneal route
   b. Conjunctival route
   c. Scleral route
   d. Systemic route
4. The effervescent components used to prepare floating drug delivery system
   a. Sodium Carbonate
   b. Citric acid
   c. Tartaric acid
   d. All of the above
5. The vesicular drug delivery system made up of nonionic surfactant is known as
   a. Liposome
   b. Niosomes
   c. Nanoparticles
   d. Monoclonal antibodies
6. The polar phosphate group linked with hydrophobic tail by a bridge of in phospholipid moiety
   a. Fatty acid chain
   b. Choline
   c. Ethanolamine
   d. Glycerol backbone

7. Solvent present in inflatable chamber that gasifies at body temperature is
    a. Volatile oil
    b. Liquid ether
    c. Silicon oil
    d. Acetone
8. Which is not a type of Static intraocular barrier
    a. Choroid
    b. Cornea
    c. Sclera
    d. Retina
9. The limit for high density of Gastroretentive drug delivery system is
    a. 2.5-3.0 gm/ml
    b. 1.5-2.0 gm/ml
    c. 0.5-1.0 gm/ml
    d. 3.0-3.5 gm/ml
10. The rate controlling membrane in occusert is prepare by
    a. Hydroxy propyl methyl cellulose
    b. Ethylene Vinyl Acetate
    c. Cellulose acetate phthalate
    d. Gelatin

QII Long Answers (Answer any 1 out of 2) **10**

1. Discuss in detail about intraoccular barriers, pre-corneal constraint and explain about design of occusert.

2. Describe in detail about carriers for targeted drug delivery system and give mechanism of liposome formation.

QIII Short Answers (Answer any 2 out of 3) **10**

1. Explain in brief about copper bearing intrauterine drug delivery system.

2. Discuss in brief about method of nanoparticle preparation.

3. Illustrate in brief about ligands for targeted drug delivery system.

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Mapping of Course Outcome with Second Sessional Exam

Course Outcome	Question	Marks
CO 7041: Outline and discuss the basic components and formulation approaches for Novel Drug Delivery System viz CDDS, TDDS, GRDDS, Nasopulmonary and IUD - **Level 2 (Comprehension)**	Q.1 – 4,7,9 Q 3 – 1	08
CO 7044: Demonstrate molecular aspect of targeted drug delivery system and discuss about liposome, niosome and nanoparticle – **Level 3 & 2 (Application & Comprehension)**	Q 1 – 1,2,5,6 Q 2 - 2 Q 3 – 2,3	24
CO 7045: Extrapolate significance of intra ocular barriers in absorption of drug in eye, design and development of novel ocular formulations – ocuserts - **Level 2 & 3 (Comprehension & Application)**	Q.1 – 3,8,10 Q 2 - 1	13

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Second Sessional Theory Examination 2020-2021

(ODD SEM)

Subject & Subject Code: Novel Drug Delivery System (BP 704T)
Day & Date: Monday, 14/12/2020
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Time: 1.30 – 3.00 pm **Max. Marks**: 30

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   b. Niosomes
   c. Nanoparticles
   d. Monoclonal antibodies
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   a. Fatty acid chain
   b. Choline
   c. Ethanolamine
   d. Glycerol backbone

7. Solvent present in inflatable chamber that gasifies at body temperature is
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    b. Liquid ether
    c. Silicon oil
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    b. Cornea
    c. Sclera
    d. Retina
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    a. 2.5-3.0 gm/ml
    b. 1.5-2.0 gm/ml
    c. 0.5-1.0 gm/ml
    d. 3.0-3.5 gm/ml
10. The rate controlling membrane in occusert is prepare by
    a. Hydroxy propyl methyl cellulose
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    c. Cellulose acetate phthalate
    d. Gelatin

QII Long Answers (Answer any 1 out of 2) **10**

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Second Sessional Theory Examination-(ODD SEM) 2023-2024

Subject	:	Novel Drug Delivery Systems (BP704T)	**Day & Date**	:	Thursday, 21/12/2023		
Class	:	Final Year B.Pharm	**Semester**	:	**VIII**	***Write Your Seat No. Here***	
Time	:	2.30 pm – 4.00 pm	**Max. Marks**	:	30		

Instructions: *1. All questions are compulsory* *2. Draw a well labeled diagram wherever necessary* *3. Right hand side number indicates full marks* *4. Do not write/tick on the question paper*

QI	**Objective Type Questions (5 x 2) = 5 x 2 = 10 (Answer all the questions)**	**10 M**
1.	Give the mechanism of drug absorption for pulmonary drug delivery system. ***(LL3, CO3)***	
2.	Explain in brief about the novel ophthalmic insert - occusert. ***(LL2, CO3)***	
3.	Name the polymer used in formulation of :- i) Intra-uterine devices ***(LL1, CO3)*** ii) Liposome ***(LL1, CO4)***	
4.	Explain in detail about the **carriers** used in targeted drug delivery system ***(LL2, CO4)***	
5.	Describe about active targeting approach at molecular level ***(LL3, CO4)***	
QII	**Long Answers Question (Answer any 1 out of 2)**	**10 M**
1.	Differentiate between nasal and pulmonary system and explain the formulation of nasal system or dry powder inhaler ***(LL4, CO3)***	
2.	Elucidate in detail about different design approaches of floating type gastroretentive drug delivery system. ***(LL5, CO3)***	
Q.III	**Short Answers Question (Answer any 2 out of 3) -**	**10M**
1.	Describe about the principle involved in formulation of liposome ***(LL3, CO4)***	
2.	Illustrate in brief about passive targeting method through PEGylation **or** Write a note on Monoclonal antibodies ***(LL3, CO4)***	
3.	Describe in brief about Niosome **or** Nanopaticle ***(LL2, CO4)***	

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Second Sessional Theory Examination-(ODD SEM) 2023-2024

Subject	:	Novel Drug Delivery Systems (BP704T)	**Day & Date**	:	Thursday, 21/12/2023		
Class	:	Final Year B.Pharm	**Semester**	:	**VIII**	***Write Your Seat No. Here***	
Time	:	2.30 pm – 4.00 pm	**Max. Marks**	:	30		

Instructions: *1. All questions are compulsory* *2. Draw a well labeled diagram wherever necessary* *3. Right hand side number indicates full marks* *4. Do not write/ tick on the question paper*

QI	**Objective Type Questions (5 x 2) = 5 x 2 = 10 (Answer all the questions)**	**10 M**
1.	Give the mechanism of drug absorption for pulmonary drug delivery system. ***(LL3, CO3)***	
2.	Explain in brief about the novel ophthalmic insert - occusert. ***(LL2, CO3)***	
3.	Name the polymer used in formulation of :- i) Intra-uterine devices ***(LL1, CO3)*** ii) Liposome ***(LL1, CO4)***	
4.	Explain in detail about the **carriers** used in targeted drug delivery system ***(LL2, CO4)***	
5.	Describe about active targeting approach at molecular level ***(LL3, CO4)***	
QII	**Long Answers Question (Answer any 1 out of 2)**	**10 M**
1.	Differentiate between nasal and pulmonary system and explain the formulation of nasal system or dry powder inhaler ***(LL4, CO3)***	
2.	Elucidate in detail about different design approaches of floating type gastroretentive drug delivery system. ***(LL5, CO3)***	
Q.III	**Short Answers Question (Answer any 2 out of 3) -**	**10M**
1.	Describe about the principle involved in formulation of liposome ***(LL3, CO4)***	
2.	Illustrate in brief about passive targeting method through PEGylation **or** Write a note on Monoclonal antibodies ***(LL3, CO4)***	
3.	Describe in brief about Niosome **or** Nanopaticle ***(LL2, CO4)***	

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Second Sessional Theory Examination 2020-2021

(Odd SEM)

Subject & Subject Code: Pharmacy Practice BP703T

Day & Date: Thursday 12/12/2020 **Class: F.Y.B.Pharma**

Semester: VII **Time: 1.30 P.M TO 3.00 P.M** **Max. Marks: 30**

Instructions: 1. All questions are compulsory
2. Draw a well labeled diagram wherever necessary
3. Right hand side number indicates full marks

QI Multiple Choice Questions (MCQs) **10**

1. This is a very crucial step of patient counseling to get Knowledge about his or her health problems and medications
A. Introduction to patient
B. Assessing the patient's condition
C. Opening of session
D. Closing of discussion

2. _____ is in house training programs usually start after deputation of staff to their working department location only.
A. OJT
B. New Hire Training
C. Continuous Education Programme
D. None of above

3. hs^a is abbreviation used during prescribed of medication is indicate
A. Immediate at once
B. Every other day
C. At the bed time
D. None of Above

4. Duration of long budget preparation is
A. 2 years
B. 5-10 years
C. 3-6 years
D. 15 years

5. To recognize untreated health problems that could be improved or resolved with appropriate medication therapy is important function of
A. Clinical pharmacist
B. Nursing staff
C. Dispensing pharmacist
D. Physician

6. Fallowing is example for over the counter OTC drugs
A. Itraconazole
B. Rantac
C. Corex
D. Itch guard

7. ROL= (a × n) + B.S is formula used for calculating
Maximum stock level
Reorder level
Zero order level
Minimum order level

8. The storage of pharmaceutical product at cool temperature need to store at_____temperature
A. 2-8^{o}C
B. 8-25^{o}C
C. 30-40^{o}C
D. 40^{o}C

9. This category consist of investigational use drugs, which have passed through the preliminary research stage
Class A
Class B
Class C
Class D

10. A biochemical test result means that the substance or condition being tested for was found is known as
A. Inconclusive test
B. A negative test
C. A positive test
D. None of above

QII Long Answers (Answer any 1 out of 2) 10

1. Explain the concept of clinical pharmacy, give functions and responsibilities of clinical pharmacist add a note on medication chart review.

2. Explain in detail about principle, procedure for purchase and inventory control. Add a short note on methods used for the analysis of the drug expenditure.

QIII Short Answers (Answer any 2 out of 3) 10

1. Explain in brief Internal and external training program carried out in hospitals

2. Illustrate in brief about clinical laboratory tests and their interpretation of results

3. Elucidate about over the counter (OTC) sales

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Second Sessional Theory Examination-(ODD SEM) 2023-2024

Subject	:	Pharmacy Practice (BP703T)	**Day & Date**	:	Wed, 20/12/2023	
Class	:	Final Year B. Pharmacy	**Semester**	:	VII	***Write Your Seat No. Here***
Time	:	2.30 pm – 4:00 pm	**Max. Marks**	:	30	

Instructions: *1. All questions are compulsory 2. Draw a well-labeled diagram wherever necessary 3. Right-hand side number indicates full marks 4. Do not write/tick on the question paper*

Q. I: Objective-type questions (solve all questions)		**10 M**
1	**Give the list of members of the Pharmacy Therapeutic Committee (*CO3, LL2)***	
2	**Give the information about the green color pages of CIMS (*CO3, LL4*)**	
3	**Give the full form of abbreviations: O.D., A.S., A.U, and DISC (*CO4, LL3*)**	
4	**Give the normal range value of blood potassium, BUN, and blood glucose along with unit (*CO4, LL3*)**	
5a.	**What is the formula for calculating reorder level inventory (ROL)? (*CO3, LL2*) (1 mark)**	
5b.	**What is MCV and MCHC (*CO4, LL3*) (1 mark)**	
Q. II: Long Answers Questions (Answer any 1 out of 2)		**10 M**
1. Define clinical pharmacy, give the function of a clinical pharmacist, and explain with suitable example pharmacist intervention (*CO3, LL5)*		
2. What is the investigational use of drugs? Give its principle. Explain in detail about the classification of Investigational drugs *(CO3, LL6)*		
Q. III: Short Answers Questions (Answer any 2 out of 3)		**10 M**
1. Add a brief note on over-the-counter medications (*CO4, LL4)*		
2. Explain in detail about various steps involved in the patient counseling *(CO4, LL4)*		
3. Explain in detail about blood chemistry test *(CO4, LL3)*		

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Second Sessional Theory Examination-(ODD SEM) 2023-2024

Subject	:	Pharmacy Practice (BP703T)	**Day & Date**	:	Wed, 20/12/2023	
Class	:	Final Year B. Pharmacy	**Semester**	:	VII	***Write Your Seat No. Here***
Time	:	2.30 pm – 4:00 pm	**Max. Marks**	:	30	

Instructions: *1. All questions are compulsory 2. Draw a well-labeled diagram wherever necessary 3. Right-hand side number indicates full marks 4. Do not write/tick on the question paper*

Q. I: Objective-type questions (solve all questions)		**10 M**
1	**Give the list of members of the Pharmacy Therapeutic Committee (*CO3, LL2)***	
2	**Give the information about the green color pages of CIMS (*CO3, LL4*)**	
3	**Give the full form of abbreviations: O.D., A.S., A.U, and DISC (*CO4, LL3*)**	
4	**Give the normal range value of blood potassium, BUN, and blood glucose along with unit (*CO4, LL3*)**	
5a.	**What is the formula for calculating reorder level inventory (ROL)? (*CO3, LL2*) (1 mark)**	
5b.	**What is MCV and MCHC (*CO4, LL3*) (1 mark)**	
Q. II: Long Answers Questions (Answer any 1 out of 2)		**10 M**
1. Define clinical pharmacy, give the function of a clinical pharmacist, and explain with suitable example pharmacist intervention (*CO3, LL5)*		
2. What is the investigational use of drugs? Give its principle. Explain in detail about the classification of Investigational drugs *(CO3, LL6)*		
Q. III: Short Answers Questions (Answer any 2 out of 3)		**10 M**
1. Add a brief note on over-the-counter medications (*CO4, LL4)*		
2. Explain in detail about various steps involved in the patient counseling *(CO4, LL4)*		
3. Explain in detail about blood chemistry test *(CO4, LL3)*		