

First Sessional Theory Examination 2018-2019

Subject: Pharmaceutical Microbiology (BP303T)

Day & Date: Thursday, 04th October 2018

Class: S. Y. B. Pharm

Time: 10:30 am-12:00pm.

Semester: III

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. It is the minimum length of time whereby all microorganism present in the liquid culture medium will be killed at given temperature?

- A. TDT B. TDP C. D-Value D. Z. Value

2. It is an agent used to prevent infection by inhibiting the growth of bacteria in wounds or tissues?

- A. Disinfectant B. Antiseptic C. Antiinflammatory D. Anti-infective

3. Which of the following is example of acid fast organism

- A. Mycobacterium tuberculosis B. E. coli
C. Salmonella typhi D. Bacillus subtilis

4. A three dimensional structure is commonly observed by

- A. TEM B. SEM C. CM D. All of the above

5. The Gram positive bacteria contains _____

- A. Lipopolysaccharides B. Peptidoglycan C. Chitin D. Cholesterol

6. Which part of some animal viruses is derived from the host cell membrane?

- A. DNA core B. Capsid C. Envelope D. Inclusion body

7. The time period in between each disinfectant dilution with bacterial suspension & sampling for Kelsey-Sykes test is _____

- A. 8 Min B. 10 Min C. 15 Min D. 18 Min

8. Isolation of pure culture can be done by

- a. Spread plate method b. Pour plate method
c. Streak plate method d. All of the above

9. Growth range of the psychrophile is _____

- A. -40 to +20°C B. +20 to +40°C
C. +40 to +80°C D. None of the above

10. Which of the following media will be used to distinguish bacteria from one another

- A. Selective Media B. Differential media
C. Enriched media D. All of the above

QII Long Answers (Answer any 1 out of 2)

10

1. Describe Gaseous sterilization with respect to mode of action, method & application.
2. Describe Radiation Sterilization with respect to mode of action, method & application.

QIII Short Answers (Answer any 2 out of 3)

10

1. Explain in short Bacterial growth curve
2. Write a note on replication of viruses
3. Draw a neat labelled diagram of **(Any Two)**
 - a) Gas-pack anaerobic chamber
 - b) Bacterial Flagella
 - c) Sexual reproduction of fungi

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2. Describe Radiation Sterilization with respect to mode of action, method & application.

QIII Short Answers (Answer any 2 out of 3)

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 - b) Bacterial Flagella
 - c) Sexual reproduction of fungi



**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 2019-2020

Subject: Pharmaceutical Microbiology (BP303T)

Day & Date: Saturday, 28th September 2019

Class: S. Y. B. Pharm

Semester: III

Time: 1:30pm-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. It is the minimum length of time whereby all microorganism present in the liquid culture medium will be killed at given temperature?
 A. TDT B. TDP C. D-Value D. Z. Value
2. ----- virus assembles in the cytoplasm.
 A. ssDNA viruses B. dsDNA viruses
 C. RNA viruses D. Double-stranded DNA with RNA intermediate
3. Which of the following media will be used to distinguish bacteria from one another
A. Selective Media B. Differential media C. Enriched media D. All of the above
4. Acid fast bacteria are stained with
A. Nigrosin B. Carbol fuchsin C. Malachite green D. Crystal violet
5. Cell wall of Gram positive bacteria contains
A. Peptidoglycan 10-20%, Teichoic acid, lipoprotein, Protien and lipids
B. Peptidoglycan 60-80%, Teichoic acid, lipoteichoic acid, Protien and lipids 20%
 C. Peptidoglycan 60-80%, Teichoic acid, lipoteichoic acid, Protien and lipids 2%
D. Peptidoglycan 20-30%, Teichoic acid, Liopolysaccharides, Protien and lipids
6. The media containing sugar and gelatine are exposed to 100^o C for 20 minutes on three successive days is known as
 A. Intermittent sterilization B. Pasteurization C. Boiling D. Disinfection
7. Viral growth can not be detected by----?
A. Cytopathic effect B. Metabolic inhibition C. Light microscopy D. Immunofluoresence
8. The influenza and mumps viruses can be cultivated in-----?
A. Allantoic Cavity B. Amniotic cavity. C. chorioallantoic membrane D. Both allantoic & amniotic cavity
9. What is the main component of fungal cell wall
A. Peptidoglycan B. Lipopolysaccharides C. Chitin D. Protein
10. Name biological indicator used in the Moist Heat Sterilization
I. *Bacillus subtilis* II. *Bacillus stearothermophilus* III. *B. titani* IV. *Clostridium sporogenes*
A. Only II B. Only I C. Both II and IV D. Both I and III

QII Long Answers (Answer any 1 out of 2)

10

1. Discuss Radiation sterilization with respect to principle, method & application.
2. Discuss Gaseous Sterilization using ethylene oxide with respect to principle, method & application.

QIII Short Answers (Answer any 2 out of 3)

10

1. Enlist techniques used for cultivation of anaerobic bacteria. Explain Gas pack chamber & writes tube method.
2. Explain replication of viruses.
3. Describe ultra structure of bacteria or bacterial growth curve.

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First Sessional Theory Examination 2020-2021
(Odd SEM)

Subject & Subject Code: Pharmaceutical Microbiology (BP303T)

Day & Date: Thursday, 22nd October 2020

Class: S. Y. B. Pharm

Semester: III

Time: 10.30am to 12.00pm

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. Media that provide nutrient that enhances the growth and predominance of particular type of bacterium but do not enhance (may inhibit) other organisms that may be present called as
 - a) Differential media
 - b) Enrichment media
 - c) Selective media
 - d) Assay media
2. Acid fast bacteria are stained with
 - a) Nigrosin
 - b) Carbol fuschin
 - c) Malachite Green
 - d) Crystal violet
3. Retroviruses contains an enzyme known as----?
 - a) Neuroamidase
 - b) DNA polymerase
 - c) Reverse transcriptase
 - d) RNA synthetase
4. Name biological indicator used in the Moist Heat Sterilization
 - i) Clostridium sporogenes
 - ii) Bacillus stearothermophilus
 - iii) B. Titani
 - iv) Bacillus subtilis
 - a) Only i
 - b) Only iv
 - c) Both i and ii
 - d) Both iii and ii
5. Select the reagents used for Gram's staining
 - a) Crystal violet, Grams iodine, alcohol or acetone, and safranin
 - b) Crystal violet, Grams iodine, acid alcohol, and methylene blue
 - c) Crystal violet, tannic acid, alcohol, and congo red
 - d) Crystal violet, Grams iodine, negrosin, and safranin
6. -----prevents accidental entry of liquid ethylene oxide?
 - a) Expansion chamber
 - b) Vacuum pump
 - c) HEPA filter
 - d) Baffled inlet
7. A three dimensional structure is commonly observed by _____ microscope.
 - a) TEM
 - b) SEM
 - c) CM
 - d) All of the above



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8. This phase of bacterial growth curve is represented by a straight line, and the population is at its metabolic peak.
a) Lag Phase b) Log Phase c) Stationary Phase d) Decline Phase
9. The fungal cell wall is made up of _____
a) Techoic acid b) Chitin c) Peptidoglycan d) Lipopolycasccharides
10. Isolation of pure culture can be done by
a) Spread plate method b) Pour plate method
c) Streak plate method d) All of the above

QII Long Answers (Answer any 1 out of 2)

10

1. Describe Moist Heat Sterilization with respect to mode of action, method & application.
2. Describe Radiation Sterilization with respect to mode of action, method & application.

QIII Short Answers (Answer any 2 out of 3)

10

1. Illustrate with diagram the ultrastructure of bacteria and bacterial cell wall.
2. Explain different methods for Cultivation of viruses
3. Elaborate on methods for cultivation of anaerobic bacteria

*****All The Best*****



First Sessional Theory Examination 2021-2022
(Odd SEM)

Subject & Subject Code: Pharmaceutical Microbiology (BP303T)

Day & Date: Wednesday, 24th November 2021

Class: S. Y. B. Pharm

Time: 10.30am to 12.00pm

Semester: III

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. Lipopolysaccharides forms the part of cell wall of _____
a) Gram +ve bacteria b) Gram - ve bacteria c) Coccus bacteria d) All of the above
2. Ability of microscope to distinctly separate, two small element in the structure of an object is called _____
a) Magnification power b) Resolving power c) Working distance d) Numerical aperture
3. If the source of energy for bacteria is from chemical reaction they are Said to be _____
a) Phototrophs b) Chemotrophs c) Autotrophs d) Lithotroph
4. The media containing sugar and gelatin are exposed to 1000 C for 20 minutes on three successive days is known as
a) Tyndallisation b) Pasteurization c) Boiling d) Sterilization by dry heat
5. A three dimensional structure is commonly observed by _____ microscope.
a) TEM b) SEM c) CM d) All of the above
6. -----prevents accidental entry of liquid ethylene oxide?
a) Expansion chamber b) Vacuum pump c) HEPA filter d) Baffled inlet
7. Select the reagents used for Acid fast staining
a) Carbol fuchsin, acid alcohol, and Methylene blue b) Crystal violet, acid alcohol, and Methylene blue
c) Carbol fuchsin, alcohol, and Crystal violet d) Methylene blue, Alcohol, and safranin
8. Mesophiles are growing within a temperature range of _____
a) 0-15 °C b) 20-40 °C c) 40-45 °C d) 45-70 °C
9. It is the minimum length of time whereby all microorganism present in the liquid culture medium will be killed at given temperature?
a) TDP b) TDT c) D-value d) Z- value
10. Which of the following Sterilization method is also called as cold sterilization?
a) Gaseous Sterilization b) Radiation sterilization
c) Filtration Sterilization d) Chemical Sterilization

QII Long Answers (Answer any 1 out of 2)

10

1. Describe Gaseous sterilization with respect to mode of action, method & application.
2. Describe Radiation Sterilization with respect to mode of action, method & application.

QIII Short Answers (Answer any 2 out of 3)

10

1. Explain with neat-labeled diagram bacterial growth curve
2. Explain different methods used for preservation of culture
3. Elaborate on methods for cultivation of anaerobic bacteria



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First Sessional Theory Examination-(ODD SEM) 2022-2023

Subject :	Pharmaceutical Microbiology (BP303T)	Day & Date :	Thurs, 10/11/2022
Class :	Second Year B. Pharmacy	Semester :	III
Time :	10:30 am – 12:00 pm	Max. Marks :	30

Write Your Seat No. Here

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 Multiple Choice Questions (MCQs)

10 M

1.	The bacterial cells are at their metabolic peak during _____ phase.						
A.	Lag	B.	Log	C.	Stationary	D.	Decline
2.	<i>Bacillus</i> and <i>Clostridium</i> are _____ forming bacteria.						
A.	Capsule	B.	Spore	C.	Acid	D.	All of the above
3.	Acid fast bacteria retains _____						
A.	Crystal violet	B.	Methylene blue	C.	Nigrosin	D.	Carbol fuschin
4.	The bacteria that have flagella all over their body are called as _____.						
A.	Lophotrichous	B.	Peritrichous	C.	Amphitrichous	D.	Polar
5.	A three dimensional structure is commonly observed by _____ microscope						
A.	TEM	B.	SEM	C.	Fluorescence	D.	None of the above
6.	_____ is biological indicator used in the Moist Heat Sterilization						
A.	<i>B. subtilis</i>	B.	<i>B. Titani</i>	C.	<i>B. stearothermophilus</i>	D.	All of the above
7.	Radiation dose is measured in _____						
A.	Curie	B.	microwatt/cm	C.	mg/ml	D.	microwatt/mm
8.	Which of the following is called as intermittent sterilization						
A.	Autoclave	B.	Pasteurization	C.	Incineration	D.	Tyndallization
9.	Time required at fixed temperature to 90% of viable microorganism is called as _____.						
A.	D- value	B.	Z- value	C.	F- value	D.	P- value
10.	Royce sachet is chemical indicator used for _____ sterilization.						
A.	Ethylene oxide	B.	Radiation	C.	Autoclave	D.	Hot air oven

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

10 M

1.	Discuss gaseous sterilization with respect to mode of action, method & application.
2.	Discuss radiation Sterilization with respect to mode of action, method & application.

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

10 M

1.	Draw neat labelled diagram of bacterial growth curve and gas pack anaerobic chamber
2.	Define bacteria. Classify bacteria on the basis of shape, temperature & oxygen require. Differentiate between Gram positive & Gram negative bacteria.
3.	Illustrate principle and working of electron microscope



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

Subject :	Pharmaceutical Microbiology (BP303T)	Day & Date :	Wed, 01/11/2023
Class :	Second Year B. Pharmacy	Semester :	III
Time :	2:30 pm – 4:00 pm	Max. Marks :	30
			Write Your Seat No. Here <input type="text"/>

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 (Each question carry 2 Marks)		10 M
1.	Enlist any two example of Gram-negative organisms. (CO1, LL3)	
2.	Classify bacteria based on shape. (CO1, LL2)	
3.	Define D-value. (CO2, LL2)	
4.	Enlist the biological indicator for Dry heat and Moist heat sterilization (CO2, LL3)	
5.	Answer the following a) Enlist preservation methods for bacterial culture (CO1, LL2) b) Write in short principle of dry heat sterilization. (CO2, LL2)	
QII	Long Answers Question (Answer any 1 out of 2)	10 M
1.	Discuss gaseous sterilization with respect to principle, method and applications (CO2, LL3)	
2.	Define sterilization, classify methods of sterilization and explain moist heat sterilization (CO2, LL3)	
QIII	Short Answers Question (Answer any 2 out of 3)	10 M
1.	Compare and contrast Gram positive and Gram negative bacterial cell wall (CO1, LL3)	
2.	Explain bacterial growth curve. (CO1, LL3)	
3.	Draw a neat labelled diagram of the following (CO1, LL3) a) Gaspack anaerobic chamber b) Bacterial flagella	

First Sessional Theory Examination 2018-2019

Subject: Pharmaceutical Engineering (BP 304T)

Day & Date: Friday, 05/10/2018

Class: S. Y. B. Pharmacy

Semester: III

Time: 10.30 to 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. Which are the modes observed in a ball mill
A. Attrition and cutting B. Compression and impact
C. Cutting and compression D. Impact and attrition
2. Which equipment is used for sieve analysis?
A. Alpine airjet B. Cyclone separator
C. Rotex screen D. Shaking screen
3. Separation of liquid by distillation based on one of the following principles?
A. Boiling point B. Miscibility C. Vapour pressure D. Viscosity
4. The sterile product cannot be obtained by one of the following mills.
A. Colloidal mill B. Fluid energy mill C. Cutter mill D. Roller mill
5. Absolute alcohol is prepared by one of the following methods.
A. Azeotropic distillation B. Simple distillation
C. Steam distillation D. Vaccum distillation
6. Which type of equipment gives porous on evaporation?
A. Film evaporator B. Multiple film evaporator
C. Open pan evaporator D. Vaccum evaporator
7. How many liquids are used in differential manometer?
A. Four B. One
C. Three D. Two
8. Calendria consist of a number of:
A. Baffles B. Jackets C. Outlets D. Tubular surfaces
9. Water for injection is prepared using one of the following distillation methods?
A. Flash B. Fractional C. Steam D. Vaccum
10. Which one of the screens is used for size separation of big and heavy particles?
A. Bar screens B. Bolting cloth sieves
C. Herringbone screens D. woven wire screens

QII Long Answers (Answer any 1 out of 2)

10

1. Describe in detail Bernoulli's Theorem of flow of fluids
2. Describe in detail FBD

QIII Short Answers (Answer any 2 out of 3)

10

1. Write principle, construction, working of Fluid Energy Mill
2. Explain in detail principle, construction, working, of Flash distillation
3. Write principle, construction, working of Climbing film evaporator

First Sessional Theory Examination 2018-2019

Subject: Pharmaceutical Engineering (BP 304T)

Day & Date: Friday, 05/10/2018

Class: S. Y. B. Pharmacy

Semester: III

Time: 10.30 to 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)

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 - D. Two
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 - D. Vaccum
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 - B. Bolting cloth sieves
 - C. Herringbone screens
 - D. woven wire screens

QII Long Answers (Answer any 1 out of 2)

10

1. Describe in detail Bernoulli's Theorem of flow of fluids
2. Describe in detail FBD

QIII Short Answers (Answer any 2 out of 3)

10

1. Write principle, construction, working of Fluid Energy Mill
2. Explain in detail principle, construction, working, of Flash distillation
3. Write principle, construction, working of Climbing film evaporator



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First Sessional Theory Examination 2019-2020

Subject: Pharmaceutical Engineering (BP 304T)

Day & Date: Monday, 30/09/2019

Class: S. Y. B. Pharmacy

Semester: III

Time: -1.30 pm to 03.00 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

- The flow is said to be Laminar When
 - Reynolds number < 4000
 - Reynolds number > 4000
 - Reynolds number lies between 2100 to 4000
 - Reynolds number < 2100
- Molecular distillation can also be called as
 - Equilibrium distillation
 - Short path distillation
 - Evaporative distillation
 - Both b and c
- A body that have constant emissivity or absorptivity at all wavelengths is called as
 - Black body
 - White body
 - Grey body
 - None of the above.
- Mesh Size denotes the number of openings in a
 - Square inch
 - Linear inch
 - Square mm
 - Linear mm
- Evaporation occurs only
 - after boiling
 - at the surface of a liquid
 - after extreme cooling
 - if boiling occurs at atmospheric pressure
- The following substances can be separated by distillation
 - Salt and water
 - Methanol and water
 - Sand and water
 - None of the above
- According to kirchhoff's law
 - Emissive power depends on temperature
 - Emissive power and absorptivity is constant for all bodies
 - Ratio of emissive power to absorptive power for all bodies is same and is equal to emissive power of a perfectly black body
 - Radiant heat is proportional to fourth power absolute temperature
- Bound water (moisture) exerts an equilibrium vapour pressure
 - Equal to the pure water at the same temperature
 - Less than the pure water at the same temperature
 - Greater than the pure water at the same temperature
 - None of the above
- Which of the following devices are used for measuring the rate of flow of fluid
 - Rotameter
 - Simple manometer
 - Orifice meter
 - Both a and c
- Following Equipments are used for size separation except:
 - Sieve shakers
 - Cyclone separators
 - Fluid energy mill
 - Bag filters

QII Long Answers (Answer any 1 out of 2)

10

- Explain the Bernoulli's Theorem in detail along with its applications
- What is size reduction? Explain in details the objectives, mechanisms, and various factors affecting the size reduction.

QIII Short Answers (Answer any 2 out of 3)

10

- What is Simple distillation? Explain the Principle, construction, Working and applications of simple distillation.
- Explain the construction, principle, working, advantages and limitations of Freeze dryers.
- What is evaporation? How it differs from other heat processes? Explain the applications and factors influencing the evaporation.

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Best of Luck



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First Sessional Theory Examination 2020-2021
(Odd SEM)

Subject & Subject Code: Pharmaceutical Engineering BP 304 T

Day & Date: Friday, 23/10/2020

Class: S. Y. B. Pharm

Semester: IIIrd

Time: 10.30 am to 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. Which of the following devices are used for measuring the rate of flow of fluid
 - a. Rotameter
 - b. Simple manometer
 - c. Orifice meter
 - d. Both a and c

2. Which are the modes observed in a ball mill for size reduction?
 - a. Attrition and Cutting
 - b. Compression and impact
 - c. Cutting and compression
 - d. Impact and attrition

3. Which of the following size separation equipment's separate the particles using centrifugal force
 - a. Cyclone Separator
 - b. Sieve shaker
 - c. Air separator
 - d. Both a and c

4. Which of the following is not a method of heat transfer?
 - a. Radiation
 - b. Conduction
 - c. Convection
 - d. Insulation

5. Rate of evaporation is _____
 - a. Directly proportional to temperature of liquid
 - b. Inversely proportional to temperature of liquid
 - c. Independent of temperature of liquid
 - d. None of the above



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6. Which of the following is not a step in the process of distillation?
 - a. Condensation
 - b. Heating
 - c. Precipitation
 - d. Vaporization

7. Which one of the following dryers is known as lyophiliser?
 - a. Fluidized bed dryer
 - b. Freeze dryer
 - c. Spray dryer
 - d. Vacuum dryer

8. Bound water (moisture) exerts an equilibrium vapour pressure
 - a. Equal to the pure water at the same temperature
 - b. Less than the pure water at the same temperature
 - c. Greater than the pure water at the same temperature
 - d. None of the above

9. How many liquids are used in differential manometer?
 - a. 4
 - b. 1
 - c. 3
 - d. 2

10. Fourier's law is applicable to one of the following types of heat flow.
 - a. Conduction
 - b. convection
 - c. Emission
 - d. Radiation

QII Long Answers (Answer any 1 out of 2)

10

1. Define Size Reduction; enlist the mechanisms of size reduction with example. Write a brief note on- Hammer mill.
2. Describe the Principle, construction, working, application, advantages and disadvantages of multiple effect evaporator with diagram.

QIII Short Answers (Answer any 2 out of 3)

10

1. Explain the working of Mechanical Sieve shaker for size separation in details.
2. Write a brief note on –Fractional distillation
3. Draw well labelled diagram of Rotatory drum dryer, Explain the construction and working for the same.



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First Sessional Theory Examination 2021-2022
(Odd SEM)

Subject & Subject Code: Pharmaceutical Engineering BP 304 T

Day & Date: Thursday, 25/11/2021

Class: S. Y. B. Pharm

Time: 10.30 am to 12.00 pm

Semester: III

Max. Marks: 30

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

QI Multiple Choice Questions (MCQs) 10 M

- According to Rittingers law, Energy required is proportional to.....
 - Energy Consumed
 - Surface area created
 - Final Volume
 - Initial feed
- Fourier's law is applicable to one of the following types of heat flow.
 - Conduction
 - Convection
 - Emission
 - Radiation
- How does heat energy reach the Earth from the Sun?
 - Radiation
 - Conduction
 - Convection
 - Insulation
- Which are the following force used in cyclone separator for size reduction of particles
 - Adhesive Force
 - Centrifugal Force
 - Cohesive Force
 - Shearing Force
- The process of heat transfer from one particle of the body to another without actual motion of the particle is called ...
 - Radiation
 - Conduction
 - Convection
 - None of these
- Size separation is not based on one of the following properties
 - Particle Density
 - Particle Shape
 - Particle Size
 - Particle texture
- A ball mill uses ____
 - Impact
 - Attrition
 - Impact & Attrition
 - None of the mentioned
- What is the source of heat in most of the evaporators?
 - Coal
 - Hot Water
 - Oil bath
 - Steam
- Which type of liquid evaporates first in distillation?
 - Immiscible Liquid
 - Less Volatile Liquid
 - More Volatile Liquid
 - Non Volatile Liquid
- Which of the following is not a step in the process of distillation?
 - Condensation
 - Heating
 - Precipitation
 - Vaporization

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

- Define Size Reduction; enlist and explain the mechanisms of size reduction with example. Write a brief note on laws governing for size reduction.
- Discuss the mechanism of Heat transfer in brief with suitable example including Fourier's law. Write the applications of Heat transfer.

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

- Explain the working of Sieve shaker equipment for size separation in details.
- Write a brief note on — Steam jacketed kettle (evaporating pan)
- Draw well labelled diagram of Simple distillation, Explain the construction and working for the same.



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First Sessional Theory Examination-(ODD SEM) 2022-2023

Subject	Pharmaceutical Engineering (BP 304 T)	Day & Date	Friday, 11/11/2022
Class	Second Year B. Pharmacy	Semester	III
Time	10:30 am – 12:00 pm	Max. Marks	30
			Write Your Seat No. Here <div style="border: 1px solid black; width: 100px; height: 20px; margin: 5px auto;"></div>

Instructions:	1. All questions are compulsory 3. Right hand side number indicates full marks	2. Draw a well labeled diagram wherever necessary 4. Do not write/tick on the question paper
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QI Multiple Choice Questions (MCQs)		10 M
1.	According to Kick's law, Energy required is proportional to.....	
A. Energy consumed B. Surface area created C. Particle Size D. Initial feed		
2. is applicable to one of the conduction types of heat flow.	
A. Rittinger'sw B. Fourier's law C. Kick's law D. Bond's law		
3.	Heat energy reach the Earth from the Sun is called as	
A. Conduction B. Convection C. Radiation D. Insulation		
4.	Which are the following force used in Air separator for size reduction of particles	
A. Adhesive Force B. Centrifugal Force C. Cohesive Force D. Shearing Force		
5.	The process of heat transfer by actual mixing is called as ----	
A. Radiation B. Conduction C. Convection D. None of these		
6.	A Fluid energy mill uses _____	
A. Impact B. Attrition C. Impact & Attrition D. Cutting		
7.	Following are the principles of Size separation except -----	
A. Agitation B. Cutting C. Brushing D. Centrifugal force		
8.	Following are the steps involved in Distillation except	
A. Vaporization B. Precipitation C. Heating D. Condensation		
9. type of distillation used to reduce the boiling point of liquid	
A. Fractional B. Simple C. Steam D. Vacuum		
10.	Two neck flask is called as	
A. Claisen Flask B. Volumetric Flask C. Condenser D. Florentine receiver		

QII	Long Answers Question (Answer any 1 out of 2)	10 M
1.	Write a brief note on Fourier's law of conduction and mechanism of Heat transfer with examples	
2.	a. What is Size reduction? Explain the mechanism involved in it with example b. Discuss the various law's governing on Size reduction	
QIII	Short Answers Question (Answer any 2 out of 3)	10 M
1.	Draw a well labelled diagram of Simple distillation, Explain the construction and working for the same	
2.	Write the construction and working of Multiple effect Evaporator	
3.	How to measure the particle size by the Sieving method?	



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Mapping of Course Outcome with Second Sessional Theory Examination (2022-2023)

Subject: Pharmaceutical Engineering

Course Outcome	Question	Marks
Discuss various laws, theories and mechanisms involved in different unit processes - (<i>Level 2</i>)	Q.1 – 1,2,3,4,5	25
	Q 2 – 1,2	
Explain the engineering principle, construction, and working of various equipment involved in various unit processes in pharma industries - (<i>Level 2</i>)	Q.1 – 6,7,8,9,10	20
	Q 3 – 1,2,3	



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

Subject	: Pharmaceutical Engineering (BP 304 T)	Day & Date	: Thursday, 02/11/2023	
Class	: Second Year B. Pharmacy	Semester	: III	<i>Write Your Seat</i>
Time	: 02.30 – 04.00 pm	Max. Marks	: 30	<i>No. Here</i> <input type="text"/>

Instructions:	<ol style="list-style-type: none">1. All questions are compulsory2. Draw a well labeled diagram wherever necessary3. Right hand side number indicates full marks4. Do not write/tick on the question paper
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QI	Objective Type Questions (5 x 2) = 5 x 2 = 10 (Answer all the questions)	10 M
1.	Enlist the mechanism involved in size separation (<i>LL2, CO1</i>)	
2.	Write any four applications of Heat Transfer (<i>LL2, CO1</i>)	
3.	a. Enlist the grades of Powder (<i>LL1, CO1</i>) b. Define Distillation (<i>LL2, CO2</i>)	
4.	Draw a neat labelled diagram of Evaporating Pan (<i>LL2, CO2</i>)	
5.	Why Ball mill is operating at medium speed? (<i>LL2, CO2</i>)	
QII	Long Answers Question (Answer any 1 out of 2)	10 M
1.	What is Fourier's law of conduction? explain the mechanism of Heat transfer with examples (<i>LL2, CO1</i>)	
2.	a. Define Comminution and Explain the mechanism involved in it with example (<i>LL2, CO1</i>) b. Write a brief note on - Bernoulli's theorem (<i>LL2, CO1</i>)	
Q.III	Short Answers Question (Answer any 2 out of 3)	10 M
1.	Draw a well labelled diagram of Simple distillation, Explain the construction and working for the same (<i>LL2, CO2</i>)	
2.	Write the construction and working of Horizontal tube evaporator (<i>LL2, CO2</i>)	
3.	Describe one industrial method for size separation of powder and its applications (<i>LL2, CO2</i>)	



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

Subject: Pharmaceutical Engineering

Course Outcome	Question	Marks
Discuss various laws, theories and mechanisms involved in different unit processes - (<i>Level 2</i>)	Q.1 – 1,2,3-a	15
	Q. 2 – 1,2	
Explain the engineering principle, construction, and working of various equipment involved in various unit processes in pharma industries - (<i>Level 2</i>)	Q.1 – 3-b, 4,5	15
	Q 3– 1,2,3	

First Sessional Theory Examination 2018-2019

Subject: Pharm. Organic Chemistry II

Class: S.Y.B.Pharm.

Time: 10.30- 12.00 PM

Day & Date: Monday, 1/10/2018

Semester: III

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 amino (-NH₂) group is
 a. Activating and meta directing b. deactivating and meta directing
 c. Activating and ortho, para directing d. All of these
2. The acidity of phenol is _____ than ethanol
a. less b. more
c. equal d. none of these
3. The basicity of Aniline is _____ than methyl amine
a. less b. more
c. equal d. none of these
4. In chlorination of benzene, FeCl₃ is used to generate:
a. Cl₂ b. Cl⁺
c. HCl d. none of these
5. Which of the following agent is used to react benzene with conc. HNO₃ for nitration
a. Con. HCl. b. Con. H₂SO₄
c. UV light d. Lindlar's catalyst
6. The carbon atoms in Benzene are
a. SP³ hybridized b. SP² hybridized
c. SP hybridized d. All of these
7. Which of the following compound has most acidic proton
a. CH₃OH b. CH₃CH₂OH
c. Phenol d. 4-Methyl Phenol
8. Which of the following is used to make benzene react with acetyl chloride to give acetophenone
a. Platinum (Pt) catalyst b. Anhydrous AlCl₃
c. UV light d. Anhydrous Al₂O₃
9. Which of the following is least basic
a. Aniline b. CH₃-NH₂
c. p-Nitro aniline d. CH₃CH₂-NH₂
10. The phenolic -OH group is
a. Activating and meta directing b. deactivating and meta directing
c. Activating and ortho, para directing d. All of these

QII Long Answers (Answer any 1 out of 2)

10

1. Explain the Kekule' structure of Benzene. Explain the resonance and molecular orbital picture of benzene.
2. Explain the Acidity of Phenols. Explain the effect of substituent on acidity of phenols. OR
Explain the Basicity of Amines. Explain the effect of substituent on basicity of amines.

QIII Short Answers (Answer any 2 out of 3)

10

1. Write a note on Aromaticity. Explain rules for aromaticity.
2. Write a note on Electrophilic aromatic substitution. Give one example.
3. Give the structure and uses of aryl diazonium salts OR Give the qualitative tests for phenols.



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First Sessional Theory Examination 2019-2020

Subject: Pharmaceutical Organic Chemistry II (BP 301T)

Day & Date: Thursday 26/09/2019 **Class:** S.Y. B. Pharm

Semester: III

Time: 1:30 pm to 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. With respect to the electrophilic aromatic substitution of benzene which of the following is not true?

- a) A non-aromatic intermediate is formed b) Benzene acts as an electrophile
c) A proton is lost in the final step d) Resonance forms are important

2. Phenol gives following reactions except?

- a) Kolbe reaction b) Reimer-Teimann reaction
c) Hofmann reaction d) Libermann Nitroso reaction

3. When considering electrophilic aromatic substitution reactions electron withdrawing substituent (e.g. nitro) is described as-

- a) Ortho/Para directing and activating b) Ortho/Para directing and deactivating
c) Meta directing and activating d) Meta directing and deactivating

4. Nitration can be carried out -----

- a) conc. H_2SO_4 b) Conc. HNO_3 c) Mixture of conc. H_2SO_4 and Conc. HNO_3 d) conc. HCl

5. Aromatic amines are in nature

- a) acidic b) basic c) neutral d) all of the above

6. Electron withdrawing group acidity of phenols

- a) increases b) decreases c) both d) none of the above

7. Sodium phenoxide reacts with CO_2 at 120-140°C under 5 bar pressure, reaction is called-

- a) Perkin reaction b) Wurtz reaction c) Birch reduction d) Kolbe reaction

8. What is the commercial method of preparation of phenol?

- a) Dows process b) From diazonium salt
c) By decarboxylation of salicylic acid d) Hock method

9. Aromatic amines are than aliphatic amines

- a) more basic b) less basic c) neutral d) less acidic

10. Following are the example of electrophilic substitution reaction except

- a) Sulphonation b) Nitrosation c) Bromination d) Electrolysis

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

10

1. What is electrophilic aromatic substitution reaction? Explain in detail about Friedel Craft's Alkylation & Friedel Craft's Acylation? Enlist the limitations of Friedel Craft's reactions.
2. Discuss in detail about the acidity of phenols and basicity of aromatic amines and the effects of substituents on acidity of phenols as well as on basicity of aromatic amines.

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

10

1. Explain in detail about the structural elucidation of benzene?
2. Describe the qualitative tests for phenol?
3. Write down the structure and uses of α naphthol & cresols?



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First Sessional Theory Examination 2020-2021
(Odd SEM)

Subject & Subject Code:

Day & Date:

Class:

Semester:

Time:

Max. Marks:

- 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. Benzene is aromatic in nature because
a) It is cyclic b) Its planar c) It follows Huckel's rule d) All of the above
2. Saponification is hydrolysis
a) By base b) In digestive tracts of human beings c) By acids d) By salts
3. Rancidity of lipid foodstuff is due to
a) Hydrogenation of unsaturated fatty acids b) reduction of fatty acids
c) Oxidation of fatty acids d) dehydrogenation of saturated fatty acids
4. Hardening of oil
a) Crosslinking of chain b) Reduction c) Hydrolysis d) all of the above
5. Benzoyl chloride is prepared from benzoic acid by which of the following
a) Cl_2, hv b) SO_2, Cl_2 c) SOCl_2 d) $\text{Cl}_2, \text{H}_2\text{O}$
6. Phenols can be prepared by
a) From cumene b) From aryl diazoium salt c) d) All of the above
7. The reactive group/s present in Benzoic acids is/are
a) $-\text{COOH}$ b) Benzene ring c) both a & b d) None of the above
8. Cresols are derivatives of
a) Benzoic acid b) Phenol c) Aromatic amines d) All of the above
9. The &chemical groups are present in Fats and fatty acid
a) Acid & acid b) Ester & Ester c) Ester & Acid d) Acid & acid
10. Formylation of phenol can be done by
a) Perkin reaction b) Wurtz reaction c) Riemer Tiemann reaction d) Kolbe reaction

QII Long Answers (Answer any 1 out of 2)

10

1. Discuss about the acidity of benzoic acids and basicity of aromatic amines?
Describe the effect of substituents on acidity of benzoic acid and basicity of amine?
2. Explain the effect of directive groups (Electron donating & Electron withdrawing groups) towards the electrophilic substitution reactions of benzene?

QIII Short Answers (Answer any 2 out of 3)

10

1. Define acid value? Give its significance and method of determination?
2. Write down the synthetic and analytical evidences for structural elucidation of Benzene
3. Explain principal, significance and method of determination iodine number?



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First Sessional Theory Examination 2021-2022

(EVEN SEM)

Subject: Pharmaceutical Organic Chemistry II (BP301T) **Day & Date:** Monday 22/11/2021

Class: Second Year B. Pharm.

Semester: III

Time: 10:30 am – 12:00 pm

Max. Marks: 30

*Instructions: 1. All questions are compulsory
2. Right hand side number indicates full marks*

- Q. I. Solve the following Multiple Choice Questions (MCQs)** **10** **CO**
1. Benzene reacts with chlorine in the presence of iron catalyst to produce **CO1**
a) Benzene hexachloride b) Benzyl chloride c) Chlorobenzene d) Benzoyl chloride
2. With respect to electrophilic aromatic substitution Electron donating groups are **CO1**
a) ortho director b) meta director c) para director d) o & p director
3. Which of the following is not a characteristic property of arenes? **CO1**
a) Delocalisation of π -electrons b) Resonance
c) Greater stability d) Electrophilic additions
4. Which of the following statements is true for benzene? **CO1**
a) Benzene easily undergoes addition due to unsaturation
b) π -electrons are delocalised in the benzene ring
c) Three isomeric forms are formed on monosubstitution of benzene
d) Two types of C-C bonds are present in benzene
5. Which of the following compounds is predicted to undergo electrophilic aromatic nitration the slowest? **CO1**
a) Benzonitrile b) methoxybenzene c) aniline d) benzene
6. Electrophilic substitution on naphthalene occurs preferentially at **CO2**
a) 2 carbons b) 1 carbon c) 9 carbon d) 10 carbon
7. Benzene diazonium chloride when reacts with hypophosphorus acid produces **CO2**
a) Benzene b) Phenyl phosphate c) Phenol d) Phenyl isocyanide
8. When Phenol is treated with Excess Bromine Water it gives ____ **CO2**
a) m-bromophenol b) o- and p-bromophenol
c) 2,4-dibromophenol d) 2,4,6-tribromophenol
9. Carboxylic acid reacts with ammonia to form ammonium salts which on heating produces **CO2**
a) CO₂ b) Alkane c) Ester d) Amide
10. Benzenediazonium chloride on reaction with phenol in weakly basic medium gives **CO2**
a) diphenyl ether b) p-hydroxyazobenzene c) chlorobenzene d) Benzene
- Q. II. Solve the following (any ONE)** **10**
1. Describe the mechanism of electrophilic aromatic substitution with reference to nitration. Discuss about the effect of substituent on reactivity and orientation in monosubstituted Benzene. **CO1**
2. Explain the Aromatic character of Benzene. Explain the different evidence in the derivation of structure of benzene. **CO1**
- Q. III. Solve any TWO questions from the following.** **10**
1. Write the preparation and synthetic utility of diazonium salts. **CO2**
2. Write the preparation and reactions of benzoic acid. **CO2**
3. Discuss effect of substituents on acidity of phenols. **CO2**



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First Sessional Theory Examination-(ODD SEM) 2022-2023

Subject	: POC-II (BP301T)	Day & Date	: Mon, 07/11/2022
Class	: Second Year B. Pharmacy	Semester	: III Write Your Seat No. Here
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 4. Do not write/tick on the question paper

QI Multiple Choice Questions (MCQs)		10 M
1.	DDT used for (LL2, CO1)	
A. Insecticide B. Pesticides C. Both a & b D. None of the above		
2.	Chloro (Cl) group is (LL2, CO1)	
A. <i>o,p</i> -director B. <i>m</i> -director C. <i>o</i> -director D. <i>p</i> -director		
3.	Catalyst used in Friedal-crafts alkylation (LL2, CO1)	
A. H ₂ SO ₄ B. AlCl ₃ C. NaCl D. HCl		
4.	Molecule must have ____ π electrons to be aromatic compound (LL2, CO1)	
A. 2n+2 B. 4n+2 C. 6n+2 D. 8n+2		
5.	In 1H NMR spectroscopy, aromatic protons appear at ppm (LL2, CO1)	
A. 1-3 ppm B. 4-5 ppm C. 6.5-8 ppm D. 10.5-12 ppm		
6.	EDGs basicity of amine (L3, CO2)	
A. Decrease B. Increase C. Partially increase and Partially decrease D. No effect		
7.	Phenols can be prepared by (L3, CO2)	
A. From cumene B. From aryl diazoium salt C. From chlorobenzene. D. All of the above		
8.	The reactive group/s present in Aniline is/are (L3, CO2)	
A. -NH ₂ B. Benzene C. Bothe a & b D. None of the above		
9.	Identifications test/s for phenol is/are (L3, CO2)	
A. FeCl ₃ Test B. Phthalein dye test C. Libermann nitroso test D. All of the above		
10.	The& chemical groups are present in Fats and fatty acid (L3, CO2)	
A. Ester & Ester B. Ester & Acid C. Acid and Acid D. All of the above		

QII	Long Answers Question (Answer any 1 out of 2)	10 M
1.	What are electrophilic substitution reactions of benzene? Write short note on directive effect of EDG & EWG? (LL2, CO1)	
2.	Give the reactions of Benzoic acid? Explain the effect of EDG and EWG to the acidity of benzoic acid? (LL3, CO2)	
QIII	Short Answers Question (Answer any 2 out of 3)	10 M
1.	Explain the aromaticity in benzene? (LL2, CO1)	
2.	Give the synthetic applications of Aryl diazonium salt? (LL3, CO2)	
3.	Write the chemical reactions of fatty acids? (LL2, CO1) (LL3, CO2)	



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First Sessional Theory Examination-(ODD SEM) 2022-2023

Subject	: POC-II (BP301T)	Day & Date	: Mon, 07/11/2022
Class	: Second Year B. Pharmacy	Semester	: III
Time	: 10:30 am – 12:00 pm	Max. Marks	: 30
			Write Your Seat No. Here <div style="border: 1px solid black; width: 100px; height: 20px; margin: 5px auto;"></div>

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 Multiple Choice Questions (MCQs)		10 M
1.	DDT used for (LL2, CO1)	
A. Insecticide B. Pesticides C. Both a & b D. None of the above		
2.	Chloro (Cl) group is (LL2, CO1)	
A. <i>o,p</i> -director B. <i>m</i> -director C. <i>o</i> -director D. <i>p</i> -director		
3.	Catalyst used in Friedal-crafts alkylation (LL2, CO1)	
A. H ₂ SO ₄ B. AlCl ₃ C. NaCl D. HCl		
4.	Molecule must have ____ π electrons to be aromatic compound (LL2, CO1)	
A. 2n+2 B. 4n+2 C. 6n+2 D. 8n+2		
5.	In 1H NMR spectroscopy, aromatic protons appear at ppm (LL2, CO1)	
A. 1-3 ppm B. 4-5 ppm C. 6.5-8 ppm D. 10.5-12 ppm		
6.	EDGs basicity of amine (L3, CO2)	
A. Decrease B. Increase C. Partially increase and Partially decrease D. No effect		
7.	Phenols can be prepared by (L3, CO2)	
A. From cumene B. From aryl diazoium salt C. From chlorobenzene. D. All of the above		
8.	The reactive group/s present in Aniline is/are (L3, CO2)	
A. -NH ₂ B. Benzene C. Bothe a & b D. None of the above		
9.	Identifications test/s for phenol is/are (L3, CO2)	
A. FeCl ₃ Test B. Phthalein dye test C. Libermann nitroso test D. All of the above		
10.	The& chemical groups are present in Fats and fatty acid (L3, CO2)	
A. Ester & Ester B. Ester & Acid C. Acid and Acid D. All of the above		

QII	Long Answers Question (Answer any 1 out of 2)	10 M
1.	What are electrophilic substitution reactions of benzene? Write short note on directive effect of EDG & EWG? (LL2, CO1)	
2.	Give the reactions of Benzoic acid? Explain the effect of EDG and EWG to the acidity of benzoic acid? (LL3, CO2)	
QIII	Short Answers Question (Answer any 2 out of 3)	10 M
1.	Explain the aromaticity in benzene? (LL2, CO1)	
2.	Give the synthetic applications of Aryl diazonium salt? (LL3, CO2)	
3.	Write the chemical reactions of fatty acids? (LL2, CO1) (LL3, CO2)	



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

Subject :	POC-II (BP301T)	Day & Date :	Monday 30/10/2023	
Class :	Second Year B. Pharmacy	Semester :	III	Write Your Seat No. Here <input type="text"/>
Time :	2.30 pm to 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 (2 x 5)		10 M
1.	Write down the structure and uses of DDT? (LL2, CO1)	
2.	Write in short about rules for aromaticity? (LL2, CO1)	
3.	Enlist the limitations of Freidel Craft's Reactions? (LL2, CO1)	
4.	Enlist the reactions of benzoic acid? (L3, CO2)	
5.	Write a short note on basicity of amine? (L3, CO2)	

QII	Long Answers Question (Answer any 1 out of 2)	10 M
1.	What are electrophilic substitution reactions of benzene? Write short note on directive effect of EDG & EWG?	
2.	Give the reactions of Phenol? Explain the effect of EDG and EWG to the acidity of Phenol?	

QIII	Short Answers Question (Answer any 2 out of 3)	10 M
1.	Explain the various synthetic, analytical and other evidences for structural elucidation of benzene? (LL2, CO1)	
2.	Give the synthetic applications of Aryl diazonium salt? (L32, CO2)	
3.	Write down the chemical reactions of fatty acids? (LL2, CO1) (L32, CO2)	

First Sessional Theory Examination 2018-2019

Subject: Physical Pharmaceutics-I (BP 302T)
Class: S. Y. B. Pharmacy
Time: 10.30 to 12.00 pm

Day & Date: Wednesday, 03/10/2018
Semester: III
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. Joule Thomson effect describes gases'
A. Contraction **B. Sudden Expansion** C. Expansion D. Relaxion
2. Methanol and water are
A. Miscible B. Non Miscible
C. Forms Saturated Solution D. Forms Supersaturated Solution
3. Pressure that vapors apply on surface of liquid at equilibrium is called...
A. Torr **B. Vapor Pressure** C. Liquid Pressure D. Condensation
4. The process in which the solid changes directly into vapors without changing in liquid state is called....
A. Condensation B. Evaporation C Boiling **D. Sublimation**
5. Refractive index is ration between speed of light in air or vacuum and
A A speed of sound in a medium **B. A speed of light in a medium**
C. Can be A or B D. None of the above
6. Amount of energy required to change liquid to gas and vice versa without any change in temperature is termed as
A. Latent heat of Fusion **B. Latent heat of Vaporisation**
C. Heat Capacity D. Specific heat of Capacity
7. Solutions which shows positive or negative deviation from Raoult's law are called
A. Ideal Solution B. True Solutions
C. Non-ideal solutions D. Homogeneous solution
8. Kerosene is a non polar solvent, which solute will dissolve in it?
A. Hexane B. Sodium carbonate C. Ethanol D. Potassium Chloride
9. Polymorphism is important in the formulation of _____.
A. Ointments **B. Suppositories** C. Capsules D. Solutions
10. Polyoxyethylene Sorbitan Monooleate is also known as.....
A. Tween 20 **B. Tween 80** C. Span 20 D. Span 80

QII Long Answers (Answer any 1 out of 2)

10

1. Define solubility & discuss various factors affecting solubility of solids in liquids.
2. Discuss Crystalline & amorphous solids. Add a note on polymorphism.

QIII Short Answers (Answer any 2 out of 3)

10

1. Write a detail note on Liquid crystalline state & Glassy state.
2. Explain about solute-solvent interaction and What is Nernst Distribution law, its limitation & application?
3. Define surface tension & interfacial tension. Explain any TWO methods for determination of surface tension & interfacial tension.

First Sessional Theory Examination 2018-2019

Subject: Physical Pharmaceutics-I (BP 302T)
Class: S. Y. B. Pharmacy
Time: 10.30 to 12.00 pm

Day & Date: Wednesday, 03/10/2018
Semester: III
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. Joule Thomson effect describes gases'
A. Contraction B. Sudden Expansion C. Expansion D. Relaxion
2. Methanol and water are
A. Miscible B. Non Miscible
C. Forms Saturated Solution D. Forms Supersaturated Solution
3. Pressure that vapors apply on surface of liquid at equilibrium is called...
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9. Polymorphism is important in the formulation of _____.
A. Ointments B. Suppositories C. Capsules D. Solutions
10. Polyoxyethylene Sorbitan Monooleate is also known as.....
A. Tween 20 B. Tween 80 C. Span 20 D. Span 80

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

1. Define solubility & discuss various factors affecting solubility of solids in liquids.
2. Discuss Crystalline & amorphous solids. Add a note on polymorphism.

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

1. Write a detail note on Liquid crystalline state & Glassy state.
2. Explain about solute-solvent interaction and What is Nernst Distribution law, its limitation & application?
3. Define surface tension & interfacial tension. Explain any TWO methods for determination of surface tension & interfacial tension.



**Shri. Vile Parle Kelavani Mandal's
Institute of Pharmacy, Dhule**

Roll No.

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

First Sessional Theory Examination 2019-2020

Subject: Physical Pharmaceutics-I (BP 302T)

Day & Date: Friday, 27/09/2019

Class: S. Y. B. Pharmacy

Semester: III

Time: 01.30 to 03.00 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. Mole fraction of solute is the ratio of
 - A. The number of moles of solute
 - B. The total number of moles of solute and Solvent
 - C. The number of moles of solute and the number of moles of solute & solvent
 - D. None of these
2. According to USP, "sparingly soluble" means the parts of solvent required for one part of solute is
 - A. Less than 1
 - B. 10-30
 - C. 30-100
 - D. 100-1000
3. Refractive index is ration between speed of light in air or vacuum and
 - A speed of sound in a medium
 - B. A speed of light in a medium
 - C. Can be A or B
 - D. None of the above
4. Solubility curve is a curve drawn between
 - A. Solubility & Pressure
 - B. Solubility & Temperature
 - C. Solubility & Mole fraction
 - D. None of the above
5. Liquid is
 - A. A state of matter with a definite shape & volume
 - B. A state of matter with a definite shape, but a volume that can change
 - C. A state of matter with a definite volume, but can change shape
 - D. A state of matter that does not have a fixed shape or volume.
6. The mechanism of polar solvents mainly depends on
 - A. High Dielectric Constant
 - B. Hydrogen bond formation
 - C. Dipole interaction
 - D. All of the above
7. Dielectric constant of a solvent is a measure of
 - A. Ionization
 - B. Polarity
 - C. Conductivity
 - D. Viscosity
8. The substance which rotates plane of polarization of light towards left or anti-clockwise directions are called...
 - A. Dextrorotatory
 - B. Levorotatory
 - C. Conformation
 - D. Observed rotation
9. The relationship between pH, pKa and extent of ionization is described by
 - A. Fick's law
 - B. Snell's law
 - C. Henderson Hasselbatch Equation
 - D. Michaelis-Menten Equation
10. One gram molecule of gas at STP occupies 22.4 L. This fact is derived using
 - A. Avagadro's law
 - B. Boyles law
 - C. Charles law
 - D. Dalton's law of partial pressure

QII Long Answers (Answer any 1 out of 2)

10

1. Explain the term solubility & expression of it. State Raoult's law and deviation of it with suitable examples.
2. Explain in detail solid states of matter.

QIII Short Answers (Answer any 2 out of 3)

10

1. Write a detail note on Liquid crystalline state & eutectic mixtures.
2. What is Nernst Distribution law, its limitation & application?
3. Explain Principle, Construction & working of a Polarimeter.



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First Sessional Theory Examination 2020-2021
(Odd SEM)

Subject: Physical Pharmaceutics-I (BP302T) **Day & Date:** Wed, 21/10/2020

Class : Second Year B. Pharmacy **Semester:** III

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 M

1. Which component of aerosol system is responsible for expelling the content
 - A. Container
 - B. Propellant
 - C. Actuator
 - D. Drug Product

2. The mechanism of polar solvents mainly depends on
 - A. High Dielectric constant
 - B. Hydrogen Bond Formation
 - C. Dipole Interaction
 - D. All of the above

3. The process in which the absorbate is attached to the adsorbent by primary chemical bonds are called
 - A. Physisorption
 - B. Chemisorption
 - C. Absorption
 - D. Spreading coefficient

4. pH of the solution depends on
 - A. Henderson Hasselbalch equation
 - B. Henry's law
 - C. Charle's law
 - D. Dalton's law

5. The surfactants which have both polar & non polar groups are called
 - A. Anionic Surfactant
 - B. Cationic Surfactant
 - C. Amphiphiles
 - D. Ionic Surfactant



6. The ring used in Du Nouy tensiometer is made up of.....
 - A. Platinum
 - B. Iridium
 - C. Both A & B
 - D. None of the above

7. A Unit cell having dimension: $a \neq b \neq c$ and $\alpha \neq \beta \neq \gamma$ is known as
 - A. Monoclinic
 - B. Orthorhombic
 - C. Rhombohedral
 - D. Triclinic

8. Identify the law: $V \propto n$ (T & P are constant)
 - A. Boyle's law
 - B. Charles law
 - C. Avagadro's law
 - D. Henry's law

9. Which of the following is not a system of measure of solubility
 - A. Mass per volume
 - B. Molarity
 - C. Parts Per Million
 - D. Enthalpy

10. Which of the following is a type of Thermotropic liquid crystals
 - A. Smectic
 - B. Nematic
 - C. Cholestric
 - D. All of the above

QII Long Answers (Answer any 1 out of 2)

10 M

1. Explain the concept of Solubility & its expressions. Write a detail note on partition coefficient, its limitations and applications in pharmacy.
2. What do you mean by solid crystalline state? Classify it & add a note on Crystals & crystal system with suitable examples.

QIII Short Answers (Answer any 2 out of 3)

10 M

1. Explain in details the methods for achieving liquefaction of gases.
2. Explain the concept of adsorption at Solid-gas interface.
3. Write a detail note on HLB?



First Sessional Theory Examination 2021-2022 (Odd SEM)
Subject & Subject Code: Physical Pharmaceutics-I (BP302T)
Day & Date: Tuesday 23/11/2021 Semester: III
Class: S.Y.B Pharm Max. Marks: 30
Time: 10.30 AM to 12.00 noon

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

- In the..... state, the molecules are mobile in two directions.
a) Nematic b) Smectic c) Gases d) Cholesteric
- For the Monoclinic crystal system, which of the following is not TRUE?
a) $a = b = c$ b) $\alpha = \beta = \gamma = 90^\circ$ c) $a \neq b \neq c$ d) None of these
- A gas law giving the relationship between volume & Temp. is obtained from...
a) Daltons Law b) Boyles Law c) Charles Law d) Grahams Law
- Which of the following are called Supercooled liquids ...
a) Amorphous Solid b) Crystalline Solids c) Polymorphs d) Molecular solids
- L-glucose solution rotates plane-polarized light in one of the following ways.?
a) Clockwise b) Anticlockwise c) Away from the normal d) Near to the normal
- According to USP, a drug is said to be Slightly soluble meansparts of solvent are required to solubilize
a) 10-30 b) 100-1000 c) 30-100 d) 1-10
- The process in which the solid changes directly into vapors without changing in the liquid state is called....
a) Condensation b) Evaporation c) Sublimation d) Boiling
- Solubility of gases..... with a rise in temperature.
a) Increases b) Decreases c) Constant d) None of these
- High permeability & Low Solubility is associated with BCS.....
a) Class 1 b) Class 2 c) Class 3 d) Class 4
- If the added substance is soluble in both components in a binary solution. Then what is the effect of the added substance on CST (Critical Solution Temperature)?
a) Decreased Upper CST & Increased Miscibility c) Both a and b
b) Increased Upper CST & Decreased Miscibility d) Remains same

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

- Describe in brief the ideal and real solution with a Suitable example and explain Raoult's law and its deviations.
- Explain the term Solubility, Solutions. Discuss the effect of temperature, solvents, pH, and Particle Size on the solubility of solids in liquids with suitable examples.

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

- What is Polymorphism? Discuss the various application of polymorphism in Pharmacy?
- Explain in detail optical rotation & How is it determined?
- Explain the process for the Liquefaction of gases?

First Sessional Theory Examination-(ODD SEM) 2022-2023

Subject	: Physical Pharmaceutics-I (BP302T)	Day & Date	: Wed, 09/11/2022
Class	: Second Year B. Pharmacy	Semester	: III
Time	: 10:30 am – 12:00 pm	Max. Marks	: 30
		<i>Write Your Seat No. Here</i>	
		<div style="border: 1px solid black; width: 50px; height: 20px; display: inline-block;"></div>	

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

10 M

1. _____ is temperature above which all the components of mixture are miscible in all proportions
 - a. UCST
 - b. LCST
 - c. Both a & b
 - d. None of the above
2. Number of Moles of solute per kilogram of solvent is called.....
 - a. Molarity
 - b. Molality
 - c. Normality
 - d. Formality
3. Process in which solubility of drug can be enhance using semi polar solvent is called....
 - a. Complexation
 - b. Eutectic mixture
 - c. Cosolvency
 - d. Use of buffers
4.states that in a very dilute solution at constant temperature, the concentration of dissolved gas is proportional to the partial pressure of the gas above the solution at equilibrium
 - a. Hildebrand
 - b. Nessler's
 - c. Le chatelier's
 - d. Henry's
5. Drug is said to be..... when more than 10,000 parts of solvent required to dissolve one part of solute.
 - a. Practically insoluble
 - b. Slightly soluble
 - c. Freely soluble
 - d. Very soluble
6. A gas law giving the relationship between volume & pressure is obtained from....
 - a. Daltons law
 - b. Boyles Law
 - c. Charles law
 - d. Grahams law
7. The ability of an element to exist in more than one form is known as
 - a. Polymorphism
 - b. Allotropy
 - c. Pseudopolymorphism
 - d. Crystallinity
8. Liquid crystals resulting from the action of certain solvents on solids are known as....
 - a. Thermotropic
 - b. Lyotropic
 - c. Nematic
 - d. Smectic
9. Methods for characterization of amorphous solids is.....
 - a. Gas-Liquid Displacement method
 - b. Viscosity Method
 - c. X Ray Diffraction
 - d. Capillary Method
10. Refractive index of Water at 25 °C is.....
 - a. 1.46
 - b. 1.40
 - c. 1.36
 - d. 1.33

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

10 M

1. Define solubility & discuss various factors affecting solubility of solids in liquids
2. A. What is Raoult's law. Give its derivation and limitations.
B. What is partition coefficient? What are its limitation & application?

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

10 M

1. Explain the principle and working of Polarimeter.
2. What do you mean by solid crystalline state?
3. What is eutectic mixture? Explain it with help of suitable example.

Mapping of Course Outcome with First Sessional Theory Examination

(2022-2023)

Course Outcomes	Questions	Marks
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CO 302.1:	Q.I- 1, 2, 3, 4, 5	25
	Q.II- 1, 2	
CO 302.2:	Q.I- 6, 7, 8, 9, 10	20

First Sessional Theory Examination-(ODD SEM) 2022-2023

Subject	: Physical Pharmaceutics-I (BP302T)	Day & Date	: Wed, 09/11/2022
Class	: Second Year B. Pharmacy	Semester	: III
Time	: 10:30 am – 12:00 pm	Max. Marks	: 30
		Write Your Seat No. Here	
		<div style="border: 1px solid black; width: 80px; height: 25px; margin: 0 auto;"></div>	

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

10 M

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 - a. UCST
 - b. LCST
 - c. Both a & b
 - d. None of the above
2. Number of Moles of solute per kilogram of solvent is called.....
 - a. Molarity
 - b. Molality
 - c. Normality
 - d. Formality
3. Process in which solubility of drug can be enhance using semi polar solvent is called....
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 - b. Eutectic mixture
 - c. Cosolvency
 - d. Use of buffers
4.states that in a very dilute solution at constant temperature, the concentration of dissolved gas is proportional to the partial pressure of the gas above the solution at equilibrium
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 - c. Le chatelier's
 - d. Henry's
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 - c. X Ray Diffraction
 - d. Capillary Method
10. Refractive index of Water at 25 °C is.....
 - a. 1.46
 - b. 1.40
 - c. 1.36
 - d. 1.33

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

10 M

1. Define solubility & discuss various factors affecting solubility of solids in liquids
2. A. What is Raoult's law. Give its derivation and limitations.
B. What is partition coefficient? What are its limitation & application?

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

10 M

1. Explain the principle and working of Polarimeter.
2. What do you mean by solid crystalline state?
3. What is eutectic mixture? Explain it with help of suitable example.

Mapping of Course Outcome with First Sessional Theory Examination

(2022-2023)

Course Outcomes	Questions	Marks
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CO 302.1:	Q.I- 1, 2, 3, 4, 5	25
	Q.II- 1, 2	
CO 302.2:	Q.I- 6, 7, 8, 9, 10	20



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

Subject :	Physical Pharmaceutics-I (BP302T)	Day & Date :	Tuesday, 31/10/2023
Class :	Second Year B. Pharmacy	Semester :	IV
Time :	02:30 pm – 04:00 pm	Max. Marks :	30
		Write Your Seat No. Here <input type="text"/>	

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.	What is effect of third component on UCST on phenol water system. (LL2, CO1)	
2.	Draw a typical diagram of Abbe's refractometer? (LL3, CO2)	
3.	Define Molarity and polymorphism (LL1, CO1 & CO2)	
4.	What are liquid crystals and classify it? (LL3, CO2)	
5.	Differentiate between ideal gas and real gas. (LL3, CO2)	
QII	Long Answers Question (Answer any 1 out of 2)	10 M
1.	Explain the solute-solvent interaction in solubility of drugs. (LL3, CO1)	
2.	What is Raoult's law? Give its derivation and limitations. (LL4, CO1)	
Q.III	Short Answers Question (Answer any 2 out of 3)	10M
1.	Explain Lindes process of liquification of gases. (LL2, CO2)	
2.	Explain Bravis Lattice system of crystal systems. (LL3, CO2)	
3.	Explain the principle and working of Polarimeter. (LL3, CO2)	



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**Mapping of Course Outcome with First Sessional Theory Examination
(2022-2023)**

Course Outcomes	Questions	Marks
CO 403.1	Q.I- 1, 2	24
	Q.II- 1, 2	
CO 403.2:	Q.I- 3, 4, 5	21
	Q.III- 1, 2, 3	

Mr. Abhijeet A Aher

Dr. Kiran Aher

Mr. Mrugendra Potdar



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

Subject :	Physical Pharmaceutics-I (BP302T)	Day & Date :	Tuesday, 31/10/2023
Class :	Second Year B. Pharmacy	Semester :	IV
Time :	02:30 pm – 04:00 pm	Max. Marks :	30

Write Your Seat No. Here

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.	What is effect of third component on UCST on phenol water system. (LL2, CO1)	
2.	Draw a typical diagram of Abbe's refractometer? (LL3, CO2)	
3.	Define Molarity and polymorphism (LL1, CO1 & CO2)	
4.	What are liquid crystals and classify it? (LL3, CO2)	
5.	Differentiate between ideal gas and real gas. (LL3, CO2)	
QII	Long Answers Question (Answer any 1 out of 2)	10 M
1.	Explain the solute-solvent interaction in solubility of drugs. (LL3, CO1)	
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Q.III	Short Answers Question (Answer any 2 out of 3)	10M
1.	Explain Lindes process of liquification of gases. (LL2, CO2)	
2.	Explain Bravis Lattice system of crystal systems. (LL3, CO2)	
3.	Explain the principle and working of Polarimeter. (LL3, CO2)	



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**Mapping of Course Outcome with First Sessional Theory Examination
(2022-2023)**

Course Outcomes	Questions	Marks
CO 403.1	Q.I- 1, 2	24
	Q.II- 1, 2	
CO 403.2:	Q.I- 3, 4, 5	21
	Q.III- 1, 2, 3	

Mr. Abhijeet A Aher

Dr. Kiran Aher

Mr. Mrugendra Potdar



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Second Sessional Theory Examination 2020-2021
(Odd SEM)

Subject & Subject Code: POC-II (BP301T)

Day & Date: Thu, 10/12/2020

Class: SY B Pharm

Semester: III

Time: 11.00 am to 12.30 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. Select the incorrect option
 - a) The aromatic hydrocarbon has a pleasant aroma (smell)
 - b) Some of the aromatic compounds are ring-shaped
 - c) Aromatic hydrocarbon can be either mono or polycyclic
 - d) Benzene is the simplest hydrocarbon
2. Which among these is the simplest example for polycyclic aromatic hydrocarbon?
 - a) Benzacephenanthrylene
 - b) Naphthalene
 - c) Pyrene
 - d) Dibenz-anthracene
3. The main sources of these PAHs are
 - a) Petroleum
 - b) Biogas and petroleum
 - c) Petroleum and coal tar
 - d) Natural gas
4. Anthracene is isomeric with
 - a) Naphthalene
 - b) Phenanthrene
 - c) Naphthacene
 - d) All of the above
5. Naphthalene is used to make
 - a) Mothballs
 - b) Carbonated beverages
 - c) Cookies
 - d) Stainless steel
6. Identify the incorrect statement regarding cycloalkanes.
 - a) These have sp^3 hybridized carbon
 - b) These have tetrahedral bond angles
 - c) Stability of the cycloalkanes varies directly with their respective size
 - d) These undergo nucleophilic substitution reactions
7. Cycloalkanes have the same melting and boiling points as their corresponding alkanes.
 - a) True
 - b) False
8. Identify the compound with the highest ring strain.
 - a) Cyclomethane
 - b) Cyclopropane
 - c) Cyclobutane
 - d) Cyclopentane
9. Cycloalkanes are associated with the general formula called _____
 - a) C_nH_{2n+2}
 - b) $C_nH_{2(n+2)}$
 - c) C_nH_{2n+1-r}
 - d) $C_nH_{2(n+1-r)}$
10. Cycloalkene exhibits aromatic character.
 - a) True
 - b) False

QII Long Answers (Answer any 1 out of 2)

10

1. Discuss the synthetic reactions of anthracene & phenanthrene?
2. Explain synthesis & reactions of cyclopropane and cyclobutane?



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QIII Short Answers (Answer any 2 out of 3)

10

1. Enlist the limitations of Bayer's Strain theory & Write in short about Sachse Mohr's theory?
2. Enlist the reactions of naphthalene & phenantherene?
3. Write short note on
 - a) Sachse Mohr's theory
 - b) structure & medicinal uses of diphenyl methane & naphthalene



Second Sessional Theory Examination 2020-2021
(Odd SEM)

Subject : Physical Pharmaceutics-I (BP302T)	Day & Date : Fri, 11/12/2020
Class : Second Year B. Pharmacy	Semester : III
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

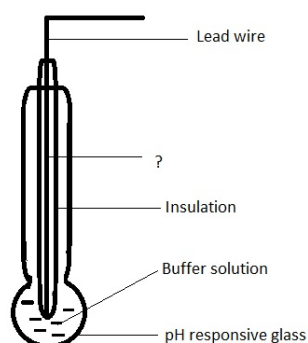
QI Multiple Choice Questions (MCQs)

10 M

1. What is a dipole?
 - A. Dipole means non polarity of atoms of the molecule
 - B. Dipole is formed in polar covalent molecules where one atom is positively charged and one is negatively charged.
 - C. Dipoles are formed irrespective of polarity of covalent bonds
 - D. Dipole means dissolution of molecule in polar solvents
2. Optical rotation is a property of which of the following
 - A. Saturated Compounds
 - B. Mineral acids
 - C. Chiral Compounds
 - D. Symmetric carbon compounds
3. The rotary power of a solution is express as
 - A. Specific rotation
 - B. Angular rotation
 - C. Angular velocity
 - D. Specific velocity
4. Which of the following is a metal complex
 - A. Inclusion Complex
 - B. Quinhydrone complex
 - C. Aromatic complex
 - D. All of the above
5. Protein binding can be studied by one of the following methods
 - A. Dialysis
 - B. Ultrafiltration
 - C. Both A & B
 - D. None of the above



6. B- cyclodextrin forms one of the following type of complex with the drug molecule
- A. Layer type
 - B. Clathrate type
 - C. Monomolecular inclusion type
 - D. Channel Lattice type
7. Which one of the following is the correct order of the drugs binding to various plasma protein?
- A. Albumin > alpha-1 acid glycoprotein > globulins > lipoproteins
 - B. Albumin > globulins > lipoproteins > alpha-1 acid glycoprotein
 - C. Albumin > alpha-1 acid glycoprotein > lipoproteins > globulins
 - D. Albumin > lipoproteins > globulins > alpha-1 acid glycoprotein
8. A buffer solution comprises which of the following?
- A. A weak acid in solution
 - B. A strong acid in solution
 - C. A weak base in solution
 - D. A weak acid and its conjugate base in solution
9. The buffers present in the blood contain
- A. HCO_3^-
 - B. Hemoglobin
 - C. H_2PO_4^-
 - D. All of above
10. Given below is the diagram of glass electrode. Identify the unmarked component.



- A. Platinum leads
- B. Silver wire coated with silver chloride
- C. Copper wire
- D. Platinum reference electrode



QII Long Answers (Answer any 1 out of 2)

10 M

1. Define the term complexes & classify it. What are different methods of analysis of complexes?
2. What is optical rotation & its applications in pharmacy? Explain the method to determine it.

QIII Short Answers (Answer any 2 out of 3)

10 M

1. Explain Inclusion complexes in detail.
2. What are Buffered Isotonic solutions? Discuss buffers in Pharmaceutical Systems & Biological Systems.
3. Write a note on
 - A. Buffer Capacity
 - B. pH Meter





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Second Sessional Theory Examination 2019-2020

Subject: Pharmaceutical Microbiology (BP303T)
Class: S. Y. B. Pharm
Time: 1:30 pm-03:00pm.

Day & Date: Friday, 8th November 2019
Semester: III
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. Total aerobic microbial count present in test substances is determined as per I.P. by the following method except.

- A. Membrane filtration
B. Total Plate count
C. Most Probable Number
D. Turbidimetric method

2. DOP test is used for validation of

- A. Membrane filter
B. HEPA filter
C. Aseptic room
D. Autoclave

3. Vitamin B12 assay is carried out by _____

- A. Turbidity method
B. Cylinder plate method
C. Both
D. None of these

4. Disaggregation of cells in cell culture method cannot done by _____

- A. Mechanical Method
B. Enzymatic Method
C. Chelating Agent
D. Chopping

5. _____ is used as inactivator for Phenolics & Parahydroxy benzoates

- A. Lecithin
B. Polysorbate 80
C. SLS
D. Sodium thiosulphate

6. Coagulase test can be carried out for detection of _____ in pharmaceutical product.

- A. S. aureus
B. E. coli
C. Salmonella typhi
D. P. aeruginosa

7. 'H' stand in HEPA filter _____ %

- A. High
B. Heavy
C. Hot
D. Hold

8. Which of the following method is not used for determination of total aerobic count?

- A. Membrane Filtration
B. Total plate count
C. MPN
D. Biochemical test

9. Presence of microorganism using membrane filtration in parenteral formulation is determine by _____

- A. Clarity test
B. Pyrogen test
C. Sterility test
D. MPN

10. Air velocity inside the aseptic room is _____

- A. 100± 10ft/min
B. 200± 10ft/min
C. 100± 20ft/min
D. 200± 20ft/min

QII Long Answers (Answer any 1 out of 2)

10

1. Enlist cell culture techniques. Explain procedure for cell culture & write its applications.
2. Draw a neat labeled diagram of aseptic area. Write in detail about designing of aseptic area.

QIII Short Answers (Answer any 2 out of 3)

10

1. Explain factors affecting microbial spoilage.
2. Draw the flow chart indicating determination of Salmonella in pharmaceutical products.
3. Explain microbiological assay of vitamin B12

***** Best of Luck*****



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**Second Sessional Theory Examination 2021-2022
(Odd SEM)**

Subject & Subject Code: Pharmaceutical Microbiology (BP303T)

Day & Date: Wednesday, 19th January 2022

Class: S. Y. B. Pharm

Time: 10.30 am to 12.00pm

Semester: III

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

- Test microorganism used for microbiological assay of Vitamin B12 is _____.
A. Lactobacillus leichmannii B. Lactobacillus casei
C. Lactobacillus viridescens D. Lactobacillus plantarum
- The lowest concentration of antimicrobial compound found to inhibit the growth of test microorganism is called as _____.
A. LD₅₀ B. MIC C. TCID₅₀ D. EID₅₀
- The time period in between each disinfectant dilution with bacterial suspension & sampling for Kelsey-Sykes test is _____.
A. 8 Min B. 10 Min C. 15 Min D. 18 Min
- _____ is used to evaluate efficiency of HEPA filter.
A. Dioctylphthalate Test B. Rodec Plate Test
C. Swab rinse Test D. Centrifugal Air sampling test
- Phenol coefficient indicates the _____ of Disinfectant.
A. Quantity B. Purity C. Activity D. Efficiency
- The growth of animal cells in vitro in a suitable culture medium is called _____.
A. Gene expression B. Transgenesis C. Plant tissue culture D. Animal cell culture
- Microbial Limit Test is performed for _____.
A. Estimation of Total viable count B. Detection of specific microbial species
C. Estimation of anaerobic bacteria D. Both A & B
- Pyrogens in the parenteral preparation is detected by _____.
A. Coagulase test B. Indole test C. LAL test D. Sterility test
- Which of the following is most commonly used serum in cell culture media _____?
A. Fetal Bovine Serum B. Human Serum C. Chicken Serum D. None of the above
- Black or Green colonies on Wilson Blair's agar indicates presence of _____.
A. *E. coli* B. *Salmonella* C. *Pseudomonas* D. *S. aureus*

QII Long Answers (Answer any 1 out of 2)

10

- Draw a neat labelled diagram of Aseptic area. Discuss the designing of Aseptic area.
- Classify Clean room. Explain air supply in the clean room and its validation, elaborate on different airflow pattern.

QIII Short Answers (Answer any 2 out of 3)

10

- Draw the flow chart of procedure for detection of E.coli in pharmaceuticals.
- What are preservatives? Explain preservative efficacy test.
- Illustrate applications of cell culture technique.

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**Mapping of Course Outcome with Second Sessional Exam (Academic Year
2021-2022)**

Subject: Pharmaceutical Microbiology(BP303T)

Course Outcome	Question	Marks
CO 3033: Describe disinfectant with evaluation and factor influencing its action. Outline and discuss aseptic area, test for sterility, sources of contamination and its prevention. Describe microbiological assay, standardization and assessment of antibiotics, vitamins and amino acid - (Level 4 Analysis)	Q 1 – 1,2,3,4,5	25
	Q 2 – 1,2	
CO 3034: Discuss types, assessment & factors affecting microbial spoilage. Explain preservation of pharmaceutical products & their microbial stability. Outline animal cell culture techniques with its application - (Level 4 Analysis)	Q.1 – 6,7,8,9,10	20
	Q 3 – 1,2,3	

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Second Sessional Theory Examination-(ODD SEM) 2022-2023

Subject : Pharmaceutical Microbiology (BP303T)	Day & Date : Wednesday, 04/01/2023	Write Your Seat No. Here <input type="text"/>
Class : Second Year B. Pharmacy	Semester : III	
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: Multiple Choice Questions (MCQs)				10 M
1.	Phenol co-efficient test is suitable for _____ disinfectant (CO3, LL1)			
	A. Water Miscible	B. Water immiscible	C. Both A & B	D. None of the above
2.	Pyrogen in parenteral is detected by _____ test. (CO3, LL4)			
	A. LAL	B. Bacterial endotoxin	C. Both A & B	D. None of the above
3.	Which of the following is example of Quaternary ammonium compound (CO3, LL4)			
	A. Cresol	B. Iodine	C. Benzalkonium chloride	D. Chlorhexidine
4.	Which of the following organism is used for performing assay of Vitamin B12 (CO3, LL4)			
	A. <i>Poterochromonas stipitata</i>	B. <i>Lactobacillus casei</i>	C. <i>Lactobacillus viridescens</i>	D. None of the above
5.	Assessment of new antibiotic is done by _____ (CO3, LL4)			
	A. MPN	B. MIC	C. Limit test	D. All of the above
6.	Which of the following culture is used for the production of primary and secondary metabolites? (CO5, LL4)			
	A. Callus culture	B. Cell suspension culture	C. Protoplast culture	D. Somatic hybrid
7.	Greenish colonies on cetrimide agar media is produce by _____ (CO4, LL4)			
	A. <i>E. coli</i>	B. <i>Staphylococcus</i>	C. <i>Salmonella</i>	D. <i>Pseudomonas aeruginosa</i>
8.	Which of the following is not air sampling method for testing quality of air in aseptic room? (CO4, LL4)			
	A. Electronic counter	B. Settle plate	C. Liquid impinger	D. swab rinse test
9.	_____ media used in sterility testing supports growth of aerobic fungi (CO4, LL1)			
	A. Fluid thioiglycolate	B. Alternative fluid thioiglycolate	C. Soybean casein Digest medium	D. None of the above
10.	Total aerobic microbial count in the pharmaceutical substances is determined by following method except _____ (CO4, LL4)			
	A. Membrane filtration	B. MPN	C. Total plate count	D. Turbidimetric method

Q. II: Long Answers Questions (Answer any 1 out of 2)				10 M
1.	Illustrate with well labeled diagram designing of aseptic area. Describe the construction of aseptic area. (CO3, LL4)			
2.	Enlist factors affecting disinfectants. Explain phenol coefficient & Kelsey Sykes test for evaluation of disinfectants. (CO3, LL4)			

Q. III: Short Answers Questions (Answer any 2 out of 3)				10 M
1.	What are preservatives? Illustrate preservative efficacy test. (CO4, LL4)			
2.	Write applications of animal cell culture. (CO4, LL4)			
3.	Explain different factors affecting microbial spoilage (CO4, LL4)			

Prepared By

Checked By

Verified By



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Mapping of Course Outcome with Second Sessional Theory Examination (2022-2023)

Subject: Pharmaceutical Microbiology (BP 303T)

Course Outcomes		Question	Marks
C303.3	Describe disinfectants with evaluation and factors influencing its action. Outline & discuss Aseptic area, test for sterility, sources of contamination & its prevention. Describe microbiological assay, Standardization & assessment of antibiotics, vitamins & amino acid - (Level 4)	Q. 1 1,2,3,4,5 Q. 2 1,2	20
C303.4	Discuss types, assessment & factors affecting microbial spoilage. Explain preservation of pharmaceutical products & their microbial stability. Outline animal cell culture techniques with its application - (Level 4)	Q. 1 6,7,8,9,10 Q. 3 1,2,3	25

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

Subject :	Pharmaceutical Microbiology (BP303T)	Day & Date :	Wed 20/12/2023
Class :	Second Year B. Pharmacy	Semester :	III
Time :	2:30 pm –4:00 pm	Max. Marks :	30
			Write Your Seat No. Here <input type="text"/>

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 (Each question carry 2 Marks) **10 M**

1.	Enlist tests for evaluation of disinfectants. (CO3, LL3)
2.	Write the full form of HEPA. What is the efficiency of HEPA filter? (CO3, LL2)
3.	Enlist types of microbial spoilage. (CO4, LL2)
4.	Enlist any four applications of animal cell culture (CO4, LL3)
5.	Answer the following a) Name the microorganism used to perform assay of vitamin B ₁₂ (CO3, LL2) b) Enlist ideal properties of preservatives. (CO4, LL2)

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

1.	Discuss sources of contamination and their prevention in pharmaceuticals. (CO3, LL3)
2.	Outline and discuss design and construction of Aseptic area. (CO3, LL4)

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

1.	Enlist types of animal cell culture. Explain steps involved in process of animal cell culture. (CO4, LL3)
2.	Write a note on preservative efficacy test (CO4, LL3)
3.	Explain factors affecting microbial spoilage (CO4, LL3)



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

Subject :	Pharmaceutical Microbiology (BP303T)	Day & Date :	Wed 20/12/2023
Class :	Second Year B. Pharmacy	Semester :	III
Time :	2:30 pm –4:00 pm	Max. Marks :	30
			<i>Write Your Seat No. Here</i> <input type="text"/>

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 (Each question carry 2 Marks) **10 M**

1.	Enlist tests for evaluation of disinfectants. (CO3, LL3)
2.	Write the full form of HEPA. What is the efficiency of HEPA filter? (CO3, LL2)
3.	Enlist types of microbial spoilage. (CO4, LL2)
4.	Enlist any four applications of animal cell culture (CO4, LL3)
5.	Answer the following a) Name the microorganism used to perform assay of vitamin B ₁₂ (CO3, LL2) b) Enlist ideal properties of preservatives. (CO4, LL2)

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

1.	Discuss sources of contamination and their prevention in pharmaceuticals. (CO3, LL3)
2.	Outline and discuss design and construction of Aseptic area. (CO3, LL4)

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

1.	Enlist types of animal cell culture. Explain steps involved in process of animal cell culture. (CO4, LL3)
2.	Write a note on preservative efficacy test (CO4, LL3)
3.	Explain factors affecting microbial spoilage (CO4, LL3)

Second Sessional Theory Examination 2018-2019

Subject: Pharmaceutical Microbiology (BP303T) Day & Date: Monday, 19th November 2018
Class: S. Y. B. Pharm Semester: III
Time: 10:30 am-12:00pm. 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 method is not used for determination of total aerobic count?
A. Membrane Filtration B. Total plate count
C. MPN ✓D. Biochemical test
2. Why Preservatives are added to pharmaceutical product
i. To protect drug from microbial attack ii. To enhance activity & efficacy of drug
iii. To stabilize product iv. To increase shelf life of product
A. Only i & iii B. i, ii & iii C. i, iii & iv ✓D. all of the above
3. Which of the following organism is not used for preservative efficacy test?
A. S. aureus ATCC 6538 B. E. coli ATCC 8739
✓C. Salmonella typhi ATCC 1034 D. P. aeruginosa ATCC 927
4. Estimation of pyrogens is done by
A. LAL test B. Microscopically
C. Instrumental method D. None of the above
5. Test microorganism used for microbiological assay of Vitamin B12 is
✓A. Lactobacillus leichamannii B. Lactobacillus casei
C. Lactobacillus viridescens D. Lactobacillus plantarum
6. The air filtered through HEPA filter is claimed to be _____% free from microorganism
A. 96.97% B. 100% ✓C. 99.97% D. 98.97%
7. Diffusion of antibiotics takes place in _____
A. Turbidity method ✓B. Cylinder plate method
C. Both D. None of these
8. DOP test is used for validation of
A. Membrane filter ✓B. HEPA filter
C. Aseptic room D. Autoclave
9. Coagulase test can be carried out for detection of _____ in pharmaceutical product.
✓A. S. aureus B. E. coli
C. Salmonella typhi D. P. aeruginosa
10. Which of the following is not ideal property of preservative
A. It should be effective B. It should be stable
C. It should be compatible with drug ✓D. It should be insoluble

QII Long Answers (Answer any 1 out of 2)

10

1. Enlist cell culture techniques. Explain procedure for cell culture & write its applications.
2. Draw neat labelled diagram of aseptic area. Classify clean area & Enlist sources of contamination with its method of prevention.

QIII Short Answers (Answer any 2 out of 3)

10

1. Explain in short laminar air flow equipment
2. Draw the flow chart indicating determination of E.coli in pharmaceutical products.
3. Explain principle & method for different microbiological assay

Second Sessional Theory Examination 2018-2019

Subject: Pharmaceutical Engineering (BP 304T)

Day & Date: Wednesday, 21/11/2018

Class: S. Y. B. Pharmacy

Semester: III

Time: 10.30 am to 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. Which of the following arrangements involved in a static mixer?
a) Shell and blade are stationary b) Shell and blade rotate
 c) Shell is stationary and blade rotates d) Shell rotates and blade is stationary
2. In which type of mixer, the trough is stationary?
a) Barrel mixer b) Double cone blender c) Ribbon mixer d) Zigzag mixer
3. When paddle is used for mixing of liquids, the flow pattern of a fluid is:
a) Axial and tangial b) Axial or tangial
 c) Radial and tangential d) Radial or tangial
4. Who has proposed that the filtration process is similar to the streamline flow of a liquid under pressure through capillaries?
a) Carman b) Darcy c) Kazeny d) Poiseulli
5. Filter aids are mainly used when:
a) Liquid is required as product b) Filter medium is not available
c) Solid and liquid are required as products d) Solids are required as product
6. Which one of the following is NOT a mechanism of filtration?
a) Entanglement b) Impact c) Impingement d) Straining
7. Centrifugal effect counter-acts one of the following forces.
 a) Brownian forces b) Cohesive forces c) Electrostatic forces d) Gravitational forces
8. Centrifugation is useful in one of the following types of dispersions.
a) Coarse dispersions b) Colloidal dispersion
c) Molecular dispersions d) Multi-size dispersions
9. The velocity of centrifuge commonly expressed in terms of the following units.
a) Diameter of the rotation b) Meter per second square
c) Meter square per second d) Revolution per minute
10. Which metal makes the steel corrosion resistant?
 a) Chromium and nickel b) Copper and selenium
c) Tantalum and molybdenum d) Titanium and niobium

QII Long Answers (Answer any 1 out of 2)

10

1. Describe construction and working of leaf filters.
2. Describe the turbine mixer with flow pattern.

QIII Short Answers (Answer any 2 out of 3)

10

1. Describe in detail construction and working of Silveson emulsifier with the help of a neat diagram.
2. Describe the construction and working of a centrifuge and working of a centrifuge used for the separation of slurry containing high percentage of solids
3. What is corrosion? Name the various types of corrosion. How can corrosion be prevented?



Second Sessional Practical Examination 2019-2020

Subject: Pharmaceutical Engineering (BP308P)
Semester: IIIrd

Class: S. Y. B. Pharm
Max. Marks: 40 Marks

DATE- 23/10/2019	BATCH: A-1	TIME: 10 am to 2.0 pm
QI. Synopsis (Each carry equal marks) 10 marks 1. What is filter aid? Give the ideal characteristics and suitable examples of filter aid. 2. What is Crystallization? Enlist three different steps of crystallization. 3. What is centrifugation? Enlist objectives and applications of centrifugation. 4. Give Principle of working of colloid mill. 5. Explain in brief three different mechanisms of solid-solid mixing.		
QII. Major Experiments 15 marks Aim- To determine the radiation constant of unpainted glass.		
QIII. Minor Experiments 10 marks Aim- To observe the effect of various factors on the nature of crystal growth of supersaturated solution of given sample by various method.		
QIV Viva Voce 05 marks		
DATE- 31/10/2019	BATCH: A-2	TIME: 10 am to 2.0 pm
QI. Synopsis (Each carry equal marks) 10 marks 1. What are the different mechanisms of solid and liquid mixing? 2. Give the principle of working of planetary mixer. 3. What is centrifugation? Enlist its objectives and applications. 4. What is filter media? Enlist its ideal characteristics and materials used for it. 5. What is filtration? What are different factors affecting filtration.		
QII. Major Experiments 15 marks Aim- To determine the radiation constant of unpainted glass.		
QIII. Minor Experiments 10 marks Aim- To observe the effect of various factors on the nature of crystal growth of supersaturated solution of given sample by various method.		
QIV Viva Voce 05 marks		
DATE- 01/11/2019	BATCH: A-3	TIME: 10 am to 2.0 pm
QI. Synopsis (Each carry equal marks) 10 marks 1. What is i. filtration, ii. Filter medium, and filtrate 2. What is the effect of following components on filtration: i. area of filter medium, ii. Area of filter cake, iii. Pressure drop, iv. Viscosity, 3. What is mixing? Give its objectives and applications. 4. Draw neat labelled diagram of planetary mixer. 5. Define crystallization and Centrifugation.		
QII. Major Experiments 15 marks Aim- To determine the radiation constant of unpainted glass.		

QIII. Minor Experiments	10 marks
Aim- To observe the effect of various factors on the nature of crystal growth of supersaturated solution of given sample by various method.	
QIV Viva Voce	05 marks

DATE- 02/11/2019	BATCH: B1	TIME: 10 am to 2.0 pm
QI. Synopsis	(Solve any 5 each carry 2 M)	10 marks
<ol style="list-style-type: none"> 1. Draw a neat labelled diagram of sigma blade mixture 2. Enlist the mechanism of filtration 3. Describe in short working of leaf filter 4. Describe the construction of spray dryer 5. Define the following terms <ol style="list-style-type: none"> a. Equilibrium moisture content b. Bound moisture 6. Enlist the factor influencing filtration process describe any one factor 		
QII. Major Experiments		15 marks
Aim- To determine the radiation constant of unpainted glass with differential surface area (Odd Number)		
Aim - To prepare lactose granule and determine the particle size distribution before and after size reduction using ball mill (Even Number)		
QIII. Minor Experiments		10 marks
Aim- To study the crystal behavior of given sample		
Odd Number – Sodium Acetate		
Even Number – Potassium Chloride		
QIV Viva Voce		05 marks

Date : 31/10/2019	Batch :B2	TIME: 10 am to 2.0 pm
QI. Synopsis	(Solve any 5 each carry 2 M)	10 marks
<ol style="list-style-type: none"> 1. Describe Filter aid with examples 2. Draw a neat labelled diagram of Ribbon Blender 3. Describe in short working of Fluidized Bed Dryer 4. Describe the Mechanism of liquid mixing 5. Postulate Equation for radiation constant of glass using Stefan Boltzmann Law. 6. Draw Neat Labelled Diagram of Leaf Filter 		
QII. Major Experiments		15 marks
Aim- To determine the radiation constant of unpainted glass with differential surface area		
QIII. Minor Experiments		10 marks
Aim- To study the crystal behavior of given sample		
Odd Number – Potassium Chloride		
Even Number – Sodium Acetate		
QIV Viva Voce		05 marks

*M.P.E.
Anandh P. 10/10/2019*

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Shri. Vile Parle Kelavani Mandal's
Institute of Pharmacy, Dhule

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

Second Sessional Theory Examination 2019-2020

Subject: Pharmaceutical Engineering (BP 304T)

Day & Date: Saturday, 09/11/2019

Class: S. Y. B. Pharmacy

Semester: III

Time: 1.30 pm to 03.00 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. **Silverson mixer is used for the preparation of:**
a) Elixir b) Emulsion c) Mouth wash d) Syrup
2. **Galvanic corrosion is observed, when external electric current in solution is passed between one of the following combinations.**
a) Gold and platinum b) Iron and hydrogen
c) Iron and iron d) Zinc and Copper.
3. **Which one of the following is NOT a mechanism of filtration?**
a) Entanglement b) Impact c) Impingement d) Straining
4. **The velocity of centrifuge commonly expressed in terms of the following units.**
a) Diameter of the rotation b) Meter per second square
c) Meter square per second d) Revolution per minute
5. **Water attack test is performed on glass in order to find the limits of one of the following**
a) Acid liberated b) Alkali liberated c) Conductivity d) Metal ions
6. **Convective mixing is also termed as:**
a) Diffusive mixing b) Macro-mixing c) Micro-mixing d) Shear mixing
7. **The efficiency of filtration increases if:**
a) Compressibility of solids is high b) Filter aid is added to the slurry
c) Filter medium is used d) Size distribution of solids is wide in slurry
8. **Conical disc centrifuge works on one of the following mechanisms of separation.**
a) Clarification b) Filtration c) Gravity separation d) Sedimentation
9. **Ability of a metal surface to withstand repeated cycles of corrosion is known as:**
a) Cavitation erosion b) Corrosion fatigue
c) Erosion d) Stress of corrosion cracking
10. **Which one of the following mechanisms is involved in case of metafilter?**
a) Cake filtration b) Depth filtration c) Surface filtration d) Zig-zag filtration

QII Long Answers (Answer any 1 out of 2)

10

1. Enlist the factors influencing the rate of filtration Explain construction, working and application of plate and frame filter press.
2. What is centrifugation? Explain in detail sedimentation centrifuges (Non-perforated basket and super centrifuge).

QIII Short Answers (Answer any 2 out of 3)

10

1. Enlist the equipment used for solid mixing in pharmaceutical industry. Explain construction and working of sigma blade mixture
2. Explain in detail various devices used for liquid mixing
3. What is corrosion? Explain various theories of corrosion.

---***---

Best of Luck



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Second Sessional Theory Examination 2019-2020

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Day & Date: Saturday, 09/11/2019

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Semester: III

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- Instructions:**
1. All questions are compulsory
 2. Draw a well labeled diagram wherever necessary
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QIII Short Answers (Answer any 2 out of 3)

10

1. Enlist the equipment used for solid mixing in pharmaceutical industry. Explain construction and working of sigma blade mixture
2. Explain in detail various devices used for liquid mixing
3. What is corrosion? Explain various theories of corrosion.



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Second Sessional Theory Examination 2020-2021
(Odd SEM)

Subject & Subject Code: Pharmaceutical Engineering BP 304T

Day & Date: Monday, 14/12/2020

Class: S. Y. B. Pharm

Semester: IIIrd

Time: 10.30 am to 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. Factors affecting during materials selected for Pharmaceutical plant construction
 - a. Physical factor
 - b. Chemical factor
 - c. Economical factor
 - d. All of the above

2. is a inorganic nonmetals used as a material to construct pharmaceutical equipment
 - a. Glass
 - b. Plastic
 - c. Rubber
 - d. Lead

3. Which filter is made up of polypropylene?
 - a. Cartridge filter
 - b. Leaf filter
 - c. Membrane filter
 - d. Rotary drum filter

4. Which of the following is an effective way of purifying liquids containing suspensions?
 - a. Crystallization
 - b. Decanting
 - c. Centrifuging
 - d. Separating Funnel

5. Centrifugation is useful in one of the following types of dispersions.
 - a. Coarse dispersions
 - b. Colloidal dispersion
 - c. Molecular dispersions
 - d. None of the above



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6. The ideal particle is in shape for the purpose of uniform mixing
 - a. Irregular
 - b. Triangular
 - c. Spherical
 - d. None Of Above

7. Silverson mixer is used for the preparation of
 - a. Mouth wash
 - b. Elixir
 - c. Emulsion
 - d. Syrup

8. Which of these NOT a mechanism for liquid mixing?
 - a. Bulk transport mixing
 - b. Shear mixing
 - c. Turbulent mixing
 - d. Laminar mixing

9. Membrane filters are made up of using

 - a. Cellulose Acetate
 - b. Cellulose Nitrate
 - c. Mixed Cellulose Esters
 - d. All Of The Above

10. Type-1 glass is a

 - a. Treated soda lime glass
 - b. soda lime glass
 - c. Borosilicate glass
 - d. Non parenteral glass

QII Long Answers (Answer any 1 out of 2)

10

1. Define corrosion; Discuss in detail types of corrosion and different control methods with suitable examples.
2. Enlist and explain the various factors affecting on rate of filtration, describe the Principle, construction, working, application, advantages and disadvantages of Rotary drum filter with diagram.

QIII Short Answers (Answer any 2 out of 3)

10

1. Explain factors influencing the selection of materials for construction of pharmaceutical equipment.
2. How to work a perforated basket centrifuge?
3. Comment on- Double cone blender equipment used for solid Mixing



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Mapping of Course Outcome with First Sessional Exam

Course Outcome	Question	Marks
CO 3043: Demonstrate and analyze the performance of equipment's used in different unit operations. (level 3 and 4)	Q.1 -3,4,5,7,8,9	16
	Q 3 - 2,3	
CO3044: Summarize and analyze various factors affecting different unit processes. (Level 3 and 4)	Q 1 - 1,6	12
	Q 2 - 2	
	Q.3 -	
CO 3045: Discuss the factors affecting during the selection of material and various preventive methods used for corrosion control for pharmaceutical industries (Level 2)	Q.1 - 2,10	17
	Q. 2 - 1	
	Q. 3 - 1	



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Second Sessional Theory Examination 2021-2022
(Odd SEM)

Subject & Subject Code: Pharmaceutical Engineering BP 304 T

Day & Date: Thursday, 20/01/2022

Class: S. Y. B. Pharm

Time: 10.30 am to 12.00 pm

Semester: III

Max. Marks: 30

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

QI Multiple Choice Questions (MCQs)

10 M

- Silverson mixer is used for the preparation of:
a) Elixir b) Emulsion c) Mouth wash d) Syrup
- The mechanism of mixing in sigma blade is:
a) Convective mixing b) Diffusive mixing c) Shearing d) Tumbling
- Which is the filter made of polypropylene?
a) Cartridge filter b) Leaf filter c) Membrane filter d) Rotary drum filter
- Which of the following does not influence filtration?
a) Temperature b) Density c) Viscosity d) pH
- Centrifugation is useful in one of the following types of dispersions.
a) Coarse dispersions b) Colloidal dispersion c) Molecular dispersions d) Multi-size dispersions
- Rubber contains one of the following chemical units?
a) Amino acid b) Glycosidal c) Isoprene d) Sugar
- Factors affecting during materials selected for Pharmaceutical plant construction
a) Physical factor b) Chemical factor c) Economical factor d) All of the above
- is a inorganic nonmetals used as a material to construct pharmaceutical equipment
a) Glass b) Plastic c) Rubber d) Lead
- Corrosion of metals involves
a) Physical reactions b) Chemical reactions c) Both d) None
- Ability of a metal surface to withstand repeated cycles of corrosion is known as:
a) Cavitation erosion b) Corrosion fatigue c) Erosion d) Stress of corrosion cracking

QII Long Answers (Answer any 1 out of 2)

10 M

- Define corrosion; Discuss in detail types of corrosion and different control methods with suitable examples
- Explain various Factors affecting during selection of materials for Pharmaceutical plant construction

QIII Short Answers (Answer any 2 out of 3)

10 M

- Describe in detail the working of Double cone blender with the help of a neat diagram for mixing
- Explain any five factors affecting on the Rate of filtration
- Classify industrial centrifuges. Write construction and working of a perforated basket centrifuge.



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Second Sessional Theory Examination-(ODD SEM) 2022-2023

Subject :	Pharmaceutical Engineering (BP304T)	Day & Date :	Thurs, 05/01/2023
Class :	Second Year B. Pharmacy	Semester :	III
Time :	02:30 pm – 04:00 pm	Max. Marks :	30

Write Your Seat No. Here

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 Multiple Choice Questions (MCQs)

10 M

- Which is the filter is made of polypropylene?**
 - Leaf filter
 - Meta filter
 - Cartridge filter
 - Drum filter
- Centrifugation is useful in one of the following type of dispersions.**
 - Coarse
 - Colloidal
 - Molecular
 - Multi-size
- In dispensing, Which one of the following term is NOT used for mixing?**
 - Sizing
 - Spatulation
 - Trituration
 - Tumbling
- What is the shape of mixing element present in zig-zag mixer?**
 - Cube shape
 - Double cone shape
 - Sigma shape
 - V - shape
- Filtration is also known as Clarification, when slurry contains not exceeding ... % w/v solids**
 - 0.01
 - 0.1
 - 1.0
 - 10.0
- Followings are the ferrous metals used to construct Pharmaceutical equipment except**
 - Cast Iron
 - Steel Carbon
 - Stainless steel
 - Rubber
- Copper - Tin alloys is nothing but**
 - Brasses
 - Bronzes
 - Titanium
 - Platinum
- Treated soda lime glass is a**
 - Type - 1 Glass
 - Type - 2 Glass
 - Type - 3 Glass
 - Non Parental Glass
- Selective corrosion that occurs in the grain boundaries in a metal/alloy is called as ...**
 - Inter-granular corrosion
 - Pitting corrosion
 - Crevice corrosion
 - Corrosion fatigue
- Dezincification is a example of type of corrosion**
 - Genral
 - Biological
 - Localized
 - Structural

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

10 M

- Explain in details- Factors affecting on selection of material to construct the pharmaceutical equipment
- What is corrosion? Discuss in various types of corrosion and methods to control with suitable examples

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

10 M

- Enlist the mechanism of Mixing and Describe the working of Silverson mixer
- What is Filtration? Write a brief note on – Rotary Drum Filter
- Write construction, working and applications of Perforated Basket Centrifuge



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Mapping of Course Outcome with Second Sessional Theory Examination (2022-2023)

Subject: Pharmaceutical Engineering

Course Outcome	Question	Marks
C304.3 Demonstrate and analyze the performance of equipments and summarize various factors affecting different unit operations - (Level 3 and 4)	Q.1 – 1,2,3,4,5	20
	Q 3 – 1,2,3	
C304.4 Discuss the factors affecting during the selection of material and various preventive methods used for corrosion control for pharmaceutical industries - (Level 2)	Q.1 – 6,7,8,9,10	25
	Q 2 – 1,2	



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

Subject	: Pharmaceutical Engineering (BP 304 T)	Day & Date	: Thursday, 21/12/2023	
Class	: Second Year B. Pharmacy	Semester	: III	<i>Write Your Seat No.</i>
Time	: 10.30 am – 12.00 pm	Max. Marks	: 30	<i>Here</i> <input type="text"/>

Instructions:	<ol style="list-style-type: none">1. All questions are compulsory2. Draw a well labeled diagram wherever necessary3. Right hand side number indicates full marks4. Do not write/tick on the question paper
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QI	Objective Type Questions (5 x 2) = 5 x 2 = 10 (Answer all the questions)	10 M
1.	Define Filtration, Enlist the factors affecting on Rate of Filtration (<i>LL3, CO3</i>)	
2.	Enlist the mechanism of Mixing (<i>LL3, CO3</i>)	
3.	a. Plot Drying curve (<i>LL4, CO3</i>) b. Write the Advantages of Plastic (<i>LL2, CO4</i>)	
4.	Write the classification of Material used to construct Pharmaceutical equipment. (<i>LL2, CO4</i>)	
5.	Enlist the methods of prevention of corrosion (<i>LL2, CO4</i>)	
QII	Long Answers Question (Answer any 1 out of 2)	10 M
1.	Discuss the various Factors affecting the selection of materials to construct the pharmaceutical equipment (<i>LL2, CO4</i>)	
2.	a. Define Corrosion, discuss the various types of corrosion (<i>LL2, CO4</i>) b. Write a brief note on the metal used as material to construct the pharmaceutical equipment (<i>LL2, CO4</i>)	
Q.III	Short Answers Question (Answer any 2 out of 3)	10 M
1.	Draw a well-labelled diagram of a Fluidized Bed Dryer, Explain the construction and working for the same. (<i>LL3, CO3</i>)	
2.	Write the construction and working of the Rotary Drum Filter. (<i>LL3, CO3</i>)	
3.	Define Centrifugation, Write a brief note on Perforated Basket centrifuge (<i>LL3, CO4</i>)	

Prepared By

Checked By

Verified By



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

Subject: Pharmaceutical Engineering

Course Outcome	Question	Marks
C304.3 Demonstrate and analyze the performance of equipments and summarize various factors affecting different unit operations - (Level 3 and 4)	Q.1 – 1,2,3-a	15
	Q 3 – 1,2,3	
C304.4 Discuss the factors affecting during the selection of material and various preventive methods used for corrosion control for pharmaceutical industries - (Level 2)	Q.1 – 3-b, 4,5	15
	Q 2 – 1,2	

Prepared By

Checked By

Verified By



Second Sessional Practical Examination 2021-22

Subject: Pharmaceutical Organic Chemistry II (BP305P)

Date: 10-01-2022

Class: Second Year B. Pharm. **Semester:** III

Marks: 40

Q.1. Synopsis10M

1. Explain the reaction and mechanism involved in the synthesis of Acetanilide from aniline.2M
2. Explain the reaction and mechanism involved in the synthesis of dibenzalacetone from benzaldehyde3M
3. Determine the theoretical yield of salicylic acid from 2 g of methyl salicylate.2M
4. Explain the principle involved in the determination of saponification value with reaction. .3M

Q.2. Experiment.25M

Major experiment:15M

Aim: To synthesize 1-phenylazo-2-naphthol from aniline

Reaction

Mechanism

Calculations

Results

Minor experiment:10M

Aim: To Determine the Acid value of the given oil sample

Reaction

Observations

Calculations

Result

Q.3. Viva05M

1. What is diazotization reaction01M
2. What is the principle involved in determination of acid value?02M
3. Define Acid value and saponification value.2M

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Second Sessional Theory Examination 2018-2019

Subject:	Pharmaceutical Organic Chemistry II	Day & Date: Friday/ 16/11/2018
Class:	S.Y. B.Pharm.	Semester: III
Time:	10.30 am to 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. PAH stands for
 - a. Polyaromatic hydrocarbon
 - b. Polyaromatic halide
 - c. Polyamines as Histamines
 - d. None of these
2. PAHs are
 - a. Polar
 - b. Non-polar
 - c. charged
 - d. acidic
3. In naphthalene, an activating group at position 1 directs an incoming electrophile preferentially to position
 - a. 4
 - b. 2
 - c. 3
 - d. No reaction
4. Naphthalene on oxidation with CrO_3 in the presence of acetic acid gives
 - a. Phthalic anhydride
 - b. Benzene
 - c. 1,4-Naphthaquinone
 - d. 1-Nitro naphthalene
5. The common name for cyclopropane is
 - a. Triethylene
 - b. Trimethylene
 - c. tetramethylene
 - d. none of these
6. The acidity of aromatic acid is due its ability to
 - a. donate proton
 - b. accept proton
 - c. both of these
 - d. none of these
7. The acidity of aromatic acids is ----- aliphatic carboxylic acids
 - a. less than
 - b. more than
 - c. equal to
 - d. both a and b
8. Naphthalene is ----- aromatic than benzene
 - a. less
 - b. more
 - c. equally
 - d. both a and b
9. Anthracene is
 - a. monocyclic
 - b. bicyclic
 - c. tricyclic
 - d. tetracyclic
10. The bond angle in cyclobutane is
 - a. 60°
 - b. 90°
 - c. 109.28°
 - d. 120°

QII Long Answers (Answer any 1 out of 2)

10

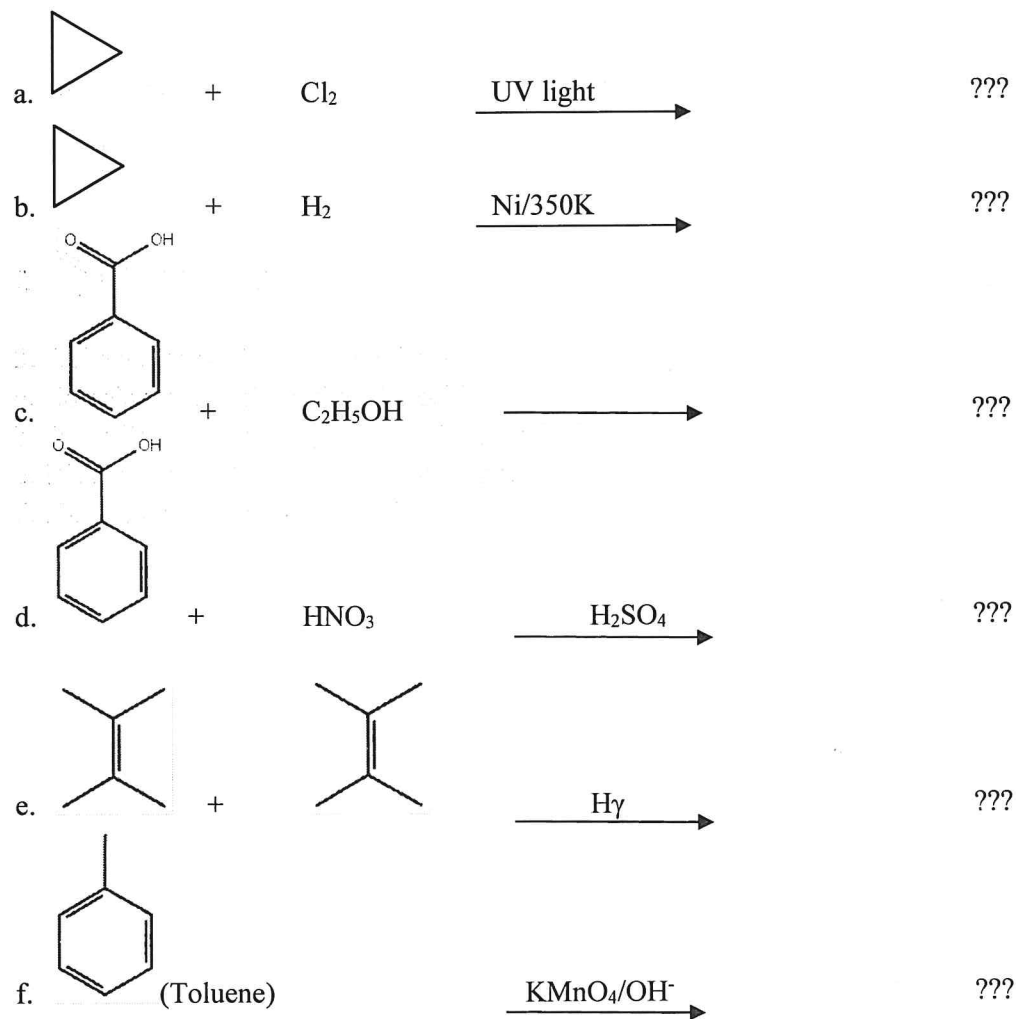
1. Write a note on Baeyer's strain theory. Give its advantages and limitations.
2. Write a note on acidity of aromatic carboxylic acids. Comment on the effect of substituents on the acidity of carboxylic acids.

QIII Short Answers (Answer any 2 out of 3)

10

1. Write a note on methods of preparation of Naphthalene OR Methods of preparation of aromatic carboxylic acids.

2. What happens when (Any 5)



3. Write a note on following methods of preparation (any two) of

- Kolbe's reaction for carboxylic acid
- Fruend's Reactions (α,ω dihalide) for cycloalkane,
- Dieckmann Cyclization for cycloalkane,
- Haworth's synthesis of Naphthalene



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Second Sessional Theory Examination 2019-2020

Subject: POC II (BP301T)

Day & Date: 06/11/2019 WEDNESDAY

Class: S.Y B.Pharm

Semester: IIIrd semester

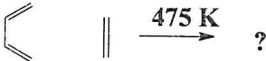



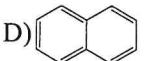
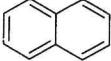

Time: 1:30pm to 3:00pm

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. Fats and oils are esters of _____.
A) Acetic acid and alcohols B) Faty acid & alcohol C) Carboxylic acid and alcohol D) None of the above
2. Banana bond is property of
A) Cyclopropane B) Cyclobutane C) Cyclopentane D) Cyclohexane
3. Identify the main product

A)  B)  C)  D) 
4. All the carbon atom in anthracene are _____.
A) SP hybridized B) SP² hybridized C) SP³ hybridized D) None of the above
- 5)  $\xrightarrow{??}$ 
A) KMNO₄ B) Pt C) Pt/H₂ D) None of the above
6. Rancidity of lipid food stuff is due to
A) Hydrogenation of unsaturated fatty acids
B) reduction of fatty acids
C) oxidation of fatty acids
D) dehydrogenation of saturated fatty acids
7. RM value is the no of mililitere of 0.1 N KOH is required to neutralize soluble volatile fatty acids derived from _____ gm of fat.
A) 2 B) 3 C) 1 D) 5
8. Number of milligrams of KOH required to neutralize free fatty acid present in 1 gm of fat is called
A) Iodine Value B) Ester Value C) Acid value D) Saponification value
9. Electrophilic substitution reaction on naphthalene occurs preffentially at _____.
A) C2 Position B) C1 Position C) C6 Position D) C9 Position
10. Saponification is hydrolysis
A) By alkali B) In digestive tracts of human beings C) By acids D) By salts

QII Long Answers (Answer any 1 out of 2)

10

1. What are Polyaromaic Hydrocarbons (PAHs)? Discuss their method of preparations?
2. What are cycloalkanes? Discuss in detail about synthesis and reactions of cyclopropane & cyclobutane?

QIII Short Answers (Answer any 2 out of 3)

10

1. What are fatty acids? Explain in detail the different chemical reactions of fatty acids.
2. Explain Bayer's strain theory? Write down its limitations?
3. Write the structure and uses of Diphenyl methane and Anthracene.



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Second Sessional Theory Examination-(ODD SEM) 2022-2023

Subject : Pha'cal Organic Chemistry-II (BP301T)	Day & Date : Mon, 02/01/2023
Class : Second Year B. Pharmacy	Semester : III
Time : 2:30 PM to 4:00 PM	Max. Marks : 30
<i>Write Your Seat No. Here</i>	
<div style="border: 1px solid black; width: 100px; height: 20px; margin: 0 auto;"></div>	

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: Multiple Choice Questions (MCQs)				10 M
1.	The hydrolytic decomposition of oils can be determined by _____. (CO3, LL3)			
	A. iodine value	B. acetyl value	C. R. M. value	D. acid value
2.	The iodine value more than 130 corresponds to _____. (CO3, LL3)			
	A. drying oils	B. non-drying oils	C. semi-drying oils	D. all of the above
3.	Diphenylmethane is an example of _____ types of polynuclear aromatic hydrocarbons (CO3, LL3)			
	A. polyphenyl	B. isolated	C. condensed	D. both A and B
4.	Sulphonation of naphthalene at 40 °C gives _____ substituted product. (CO3, LL3)			
	A. α	B. β	C. 2 nd	D. all of the above
5.	Identify the most stable structure of phenanthrene as per Fries rule. (CO3, LL3)			
	A.	B.	C.	D.
6.	Which one of the following cycloalkanes is most reactive? (CO4, LL3, LL4)			
	A. Cyclopentane	B. Cyclobutane	C. Cyclopropane	D. Cyclohexane
7.	Identify the product, when cyclopropane is reacted with chlorine under dark condition? (CO4, LL3, LL4)			
	A. 1-Chloropropane	B. Propane	C. 1,2-Dichloropropane	D. 1,3-Dichloropropane
8.	Identify the correct IUPAC name for (CO4, LL3, LL4)			
	A. 1-Butylcyclopropane	B. 1-Cyclopropylbutane	C. 1-Butyloxirane	D. Cycloheptane
9.	Banana bond is present in (CO4, LL3, LL4)			
	A. Cyclopropane	B. Cyclobutane	C. Cyclopentane	D. Cyclohexane
10.	Geometric isomerism can exist in (CO4, LL3, LL4)			
	A. Alkane	B. Alkenes	C. Cycloalkanes	D. both b & c

Q. II: Long Answers Questions (Answer any 1 out of 2)				10 M
1. Write any three synthesis and chemical reactions of naphthalene and diphenylmethane (CO3, LL3)				
2. Write any four general methods for the preparation of cycloalkanes and explain the ring opening reactions of cyclopropanes (CO4, LL3, LL4)				

Q. III: Short Answers Questions (Answer any 2 out of 3)				10 M
1. Define and write the significance of acid and Reichert-Meissl value (CO3, LL3)				
2. Discuss the applications and limitations of Bayer's strain theory (CO4, LL3, LL4)				
3. Write a brief note on (a): Iodine value (CO3, LL3) (b) Sachse-Mohr theory (CO4, LL3, LL4)				

Prepared By

Checked By

Verified By



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

Subject : Pharmaceutical Organic Chemistry-II (BP301T)	Day & Date : Mon, 18/12/2023	
Class : Second Year B. Pharmacy	Semester : III	<i>Write Your Seat No. Here</i> <input type="text"/>
Time : 2:30 PM to 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: Multiple Choice Questions (MCQs)		10 M
1. Write down the structure and uses of triphenyl methane (CO3, LL3) 2. What do you mean by rancidity of oils (CO3, LL3) 3. Enlist the reactions of anthracene (CO3, LL3) 4. Write short note on Coulson Moffitt's modification? (CO4, LL3, LL4) 5. Enlist the different conformations of cyclohexane (CO4, LL3, LL4)		
Q. II: Long Answers Questions (Answer any 1 out of 2)		10 M
1. Explain the synthesis and reactions of phenanthrene (CO3, LL3) 2. Explain the synthesis and reactions of cyclopropane (CO4, LL3, LL4)		
Q. III: Short Answers Questions (Answer any 2 out of 3)		10 M
1. Write the principle, significance and method of determination of saponification value (CO3, LL3) 2. Discuss the Bayer's strain theory (CO4, LL3, LL4) 3. Write a brief note on (a): Drying of oils (CO3, LL3) (b) Sachse-Mohr theory (CO4, LL3, LL4)		

**Shri. Vile Parle Kelavani Mandal's
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Survey No. 499/1, Plot No.3, Behind Gurudwara, Mumbai Agra Highway

Second Sessional Theory Examination 2018-2019

Subject: Physical Pharmaceutics-I (BP 302T)

Day & Date: Saturday, 17/11/2018

Class: S. Y. B. Pharmacy

Semester: III

Time: 10.30 to 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 M

- Ethylene diamine tetraacetic acid (EDTA) is an example of ligand type
A. Unidentate B. Bidentate C. Tetridentate D. Hexadentate
- In the pH titration curves of glycine-cupric complex, sudden increase in the pH is observed. It indicates that:
A. Complex is dissociated
B. Lower complex turns to higher complex
C. H⁺ ions stopped reacting with (OH⁻) ions
D. (OH⁻) ions is not participated in the complex formation
- What is the nature of drug, which mostly binds to the human serum albumin
A. Basic B. Acidic C. Neutral D. Non-ionic
- Desferoxamine belongs to a category of:
A. Chelate B. Ligand
C. Organic molecular Complex D. Occlusion complex
- The phenomenon of concentration of molecules of a gas or liquid at a solid surface is called:
A. Absorption B. Adsorption C. Catalysis D. None of these
- What is a pH of the solution of 0.1M HCl?
A. 0.1 B. 1.0 C. 7.0 D. 13.0
- When CO₂ is dissolved in water, what is the nature of the solution?
A. Acidic B. Basic C. Neutral D. Unrelated
- If an animal cell is placed in HYPERTONIC solution, what happens to the cell?
A. Cell swells and bursts B. Shrinks from water loss
C. Nothing happens D. Solute moves in and out
- Which one of following has acidic pH?
A. Blood B. Intestinal fluids C. Orange Juice D. Saliva.
- Freundlich adsorption isotherm is NOT applicable at:
A. 273 Kelvin B. Room temperature C. Low pressure D. High pressure

QII Long Answers (Answer any 1 out of 2)

10 M

- Explain in detail Freundlich and Langmuir's adsorption Isotherm.
- What are Organic molecular complexes? Classify it & Describe the nature of interactions with suitable examples of each type

QIII Short Answers (Answer any 2 out of 3)

10 M

- Define adsorption Isotherm. Draw various types of adsorption isotherms and explain their behavior.
- Classify complexes and discuss their pharmaceutical applications.
- Describe the principle and experimental procedure for pH determination by any one method.



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Second Sessional Theory Examination 2019-2020

Subject: Physical Pharmaceutics-I (BP 302T)

Day & Date: Thursday, 07/11/2019

Class: S. Y. B. Pharmacy

Semester: III

Time: 01.30 to 03.00 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 M

1. The solution having an osmotic pressure greater than that of 0.9% w/v sodium chloride is called
A. Isotonic solution B. Hypotonic solution
C. Hypertonic solution. D. Isoosmotic solution
2. Maximum buffer capacity occur when
A. $\text{pH} = \text{pKa}$ B. $\text{pH} > \text{pKa}$ C. $\text{pH} < \text{pKa}$ D. All of the above
3. A solution which maintains the isotonicity & pH as that of body fluids are known as
A. Buffer Action B. Buffer
C. Buffered Isotonic solution D. None of the above
4. Protein binding within the body commonly involves one of the following types of protein
A. Albumin B. Globulins C. Both A and B D. Neither A nor B
5. One of the following method is not a method of complex analysis
A. Solubility Method B. Distribution Method
C. Viscometer Method D. pH Titration Method
6. Which of the following is not a type of Organic molecular complexes?
A. Olefin Type B. Drug Caffeine Type
C. Quinhydrone type D. Polymer complexes
7. Lecithin is a type of.
A. Anionic surfactants B. Cationic surfactants
C. Amphiphilic surfactant D. Non ionic surfactants
8. Surfactants with HLB value more than 16 indicates
A. Wetting agents B. Solubilizing agents
C. Detergents D. Spreading agents
9. What is surface tension value of Water at 20°C?
A. 0 dyne/cm B. 65 dyne/cm C. 72.8 dyne/cm D. 100 dyne/cm
10. The unit of surface free energy is expressed as
A. cm^2 B. ergs C. dynes/cm D. None of the above

QII Long Answers (Answer any 1 out of 2)

1x10=10 M

1. Explain in detail Freundlich and Langmuir adsorption isotherms.
2. What are the applications of Complexation and protein binding in pharmacy? What are the methods of analysis for determining Drug-protein binding?

QIII Short Answers (Answer any 2 out of 3)

2x5=10 M

1. What are applications of buffers in pharmaceutical and biological systems?
2. Explain Inclusion complexes in detail.
3. Write a short note on (Any 02)
A. Capillary rise method.
B. HLB Scale.
C. Pressure difference across curved interfaces.



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Second Sessional Theory Examination 2021-2022
(Odd SEM)

Subject & Subject Code: Physical Pharmaceutics-I(BP302T)

Day & Date: Tuesday 18 /01/2022

Semester: IIIrd

Class: S.Y.B Pharm

Max. Marks: 30

Time: 10.30AM to12.00PM

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 method is used for Both surface and Interfacial tension determination?
 - A. Capillary rise method
 - B. Du-Nuoy tensiometer or Ring Detachment
 - C. Drop Method by using Stalagnometer
 - D. None of the above
2. The degree of adsorption of a gas by a solid depends on:
 - A. *Nature of adsorbate* and the *partial pressure* of the gas.
 - B. *Nature of adsorbent* and its *surface area*.
 - C. Temperature
 - D. All of them
3. HLB value of an antifoaming agent is
 - A. 2-3
 - B. 7-9
 - C. 8-16
 - D. 3-6
4. Drug-Protein bindingthe drug molecules
 - A. Activates
 - B. Inactivate
 - C. Does not affect
 - D. Initially activates followed by inactivating
5. B- cyclodextrin forms one of the following type of complex with the drug molecule
 - A. Layer type
 - B. Clathrate type
 - C. Monomolecular inclusion type
 - D. Channel Lattice type



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6. Shrinking of blood cells takes place in solution.
- A. Hypotonic
 - B. Hypertonic
 - C. Isotonic
 - D. None of these
7. Buffer solutions are the solutions or substances which resist the change in on the addition of a small amount of acid or alkali.
- A. pH
 - B. pKa
 - C. Pressure
 - D. Heat
8. combination of and its conjugate base (salt form) acts as buffer.
- A. Weak base
 - B. Weak acid
 - C. Strong base
 - D. All of these
9. The class I method of adjusting the tonicity of solutions is the method.
- | | |
|-------------------------------|------------------|
| A) Partition Coefficient | B) Cryoscopic |
| C) Sodium Chloride Equivalent | D) Melting point |
- A. Only A
 - B. A and D
 - C. B and C
 - D. A, C and D
10. Buffer capacity of a solution is a measure of itsresistance to change in pH on the addition of a small amount of acid or alkali.
- A. Nature
 - B. Valency
 - C. Magnitude
 - D. Amplitude

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

10

1. What are organic molecular complexes? Classify it & Describe the nature of interactions with suitable examples of each type.
2. Describe in brief Surface & Interfacial Tension & Explain the methods for measuring Surface & Interfacial tensions.

QIII Short Answers (Answer any 2 out of 3)

10

1. What are Buffered Isotonic solutions? Discuss buffers in Pharmaceutical Systems & Biological Systems.
2. Describe the principle and experimental procedure for pH determination by any one method.
3. What is tonicity and describe the method used to adjust tonicity?



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Second Sessional Theory Examination-(ODD SEM) 2022-2023

Subject	Physical Pharmaceutics-I (BP302T)	Day & Date	Tue, 03/01/2023
Class	Second Year B. Pharmacy	Semester	III
Time	02:30 pm – 04:00 pm	Max. Marks	30

Write Your Seat No.
Here

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 Multiple Choice Questions (MCQs)

10 M

1. **Molecules and ions that are adsorbed at interface are termed as...**
 - a. Surfactants
 - b. Adsorbate
 - c. Micelle
 - d. None of the above
2. **Surfactants with HLB value more than 13-15 indicates**
 - a. Wetting agents
 - b. Detergents
 - c. Solubilizing agents
 - d. Spreading agents
3. **.....is a process where adsorbate is attached to adsorbent by chemical bonds.**
 - a. Physical adsorption
 - b. Chemical Absorption
 - c. Chemisorption
 - d. Desorption
4. **The unit of surface free energy is expressed as.....**
 - a. cm²
 - b. N/m²
 - c. dynes/cm
 - d. ergs
5. Freundlich and Langmuir are isotherms
 - a. Type I
 - b. Type-II
 - c. Type-III
 - d. Type IV
6. **Which of the following is a type of metal complexes?**
 - a. Olefin Type
 - b. Drug Caffeine Type
 - c. Quinhydrone type
 - d. Polymer complexes
7. **Montomorillorite forms type of complexes with hydrocarbons and glycols.**
 - a. Clathrates
 - b. Layer
 - c. Channel Lattice
 - d. Monomolecular
8. **Cyclodextrin containing 7 glucopyranose units are called as cyclodextrins**
 - a. alpha
 - b. beta
 - c. gamma
 - d. delta
9. **The pH of pharmaceutical buffer system can be calculated by.....**
 - a. pH partition theory
 - b. Henderson-Hasselbalch equation
 - c. Michalis Menten Equations
 - d. Noyes whitney law
10. **The solution having an osmotic pressure lower than that of 0.9% w/v NaCl is called...**
 - a. Isotonic solution
 - b. Hypotonic solution
 - c. Hypertonic solution
 - d. Isoosmotic solution

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

10 M

1.
 - a. Explain the concept of HLB & its importance in pharmacy.
 - b. Define and classify surfactants. Explain the concept of micellar solubilisation.
2. Explain in detail Freundlich and Langmuir adsorption isotherms

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

10 M

1. What are different types of complexes? Explain metal complexes in detail.
2. Derive an equation for drawing the Scatchard plot for drug-protein binding studies
3. What are Buffered Isotonic solutions? Explain in detail.

Mr. Abhjeet Aher
Prepared By

Dr. Kiran Aher
Checked By

Mr. Mrugendra Potdar
Approved By



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Mapping of Course Outcome with Second Sessional Theory Examination

(2022-2023)

Course Outcomes	Questions	Marks
CO 302.3:	Q.I- 1, 2, 3, 4, 5	25
	Q.II- 1, 2	
CO 302.4:	Q.I- 6, 7, 8, 9, 10	20
	Q. III- 1, 2, 3	

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

Subject :	Physical Pharmaceutics-I (BP302T)	Day & Date :	Tuesday, 19/12/2023	
Class :	Second Year B. Pharmacy	Semester :	IV	Write Your Seat No. Here
Time :	02:30 pm – 04:00 pm	Max. Marks :	30	<input type="text"/>
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. Why interfacial tension is less than surface tension? (LL3, CO3)
2. Differentiate between physisorption and chemisorption. (LL3, CO3)
3. Define a) Surface Tension (LL1, CO3)
b) Buffers (LL1, CO4)
4. Draw a typical diagram of Dynamic dialysis process? (LL3, CO4)
5. What are pharmaceutical applications of complexation? (LL2, CO4)

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

1. Explain in detail Freundlich and Langmuir adsorption isotherms. (CO3, LL2)
2. a) What is capillary rise method for determining surface tension of liquids? (LL3, CO3)
b) Explain the concept of HLB & its importance in pharmacy. (LL3, CO3)

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

1. What are complex compounds? Classify it and explain organic molecular complexes in detail. (LL3, CO4)
2. Describe in detail solubility method for analysis of complex. (LL3, CO4)
3. Explain the concept of tonicity and its importance. (LL2, CO4)



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

Course Outcomes	Questions	Marks
CO 302.3	Q.I- 1, 2, 3a	25
	Q.II- 1, 2	
CO 302.4	Q.I- 3b, 4, 5	20
	Q.III- 1, 2, 3	

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Second Sessional Theory Examination 2020-2021
(Odd SEM)

Subject & Subject Code: Pharmaceutical Microbiology (BP303T)

Day & Date: Saturday, 12th December 2020

Class: S. Y. B. Pharm

Semester: III

Time: 10.30 am to 12.00pm

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. Test microorganism used for microbiological assay of Vitamin B12 is _____.
A. Lactobacillus leichamannii B. Lactobacillus casei
C. Lactobacillus viridescens D. Lactobacillus plantarum
2. Which of the following media is used for sterility test?
A. Fluid thioglycollate media B. Alternative Fluid thioglycollate media
C. Soyabean casein digest medium D. All of the above
3. In which test the disinfectant is challenged by three successive additions of a bacterial suspension during the course of the test?.
A. Phenol Coefficient test B. Kelsey-Syke's test
C. Ditch plate D. None of the above
4. Dioctylphthalate smoke is used to evaluate efficiency of _____.
A. HEPA filter B. Membrane filter
C. Porcelain filter D) Pre-filter
5. _____ is the characteristic of unidirectional airflow pattern.
A. Uniform air velocity along parallel flow line
B. Number of air changes per hour (≤ 20 air change/hour)
C. Filtered air mixes with & dilute the contaminated air
D. Background area is ventilated
6. As per clean room classification, Grade B area contains Not More Than _____ viable microorganisms/m³ of air.
A. 100 B. 1000 C. 10 D. 200
7. MPN stands for _____.
A. Most Possible Number B. Most Probable Number
C. Most Preferable Number D. Most Progressive Number
8. Coagulase test can be carried out for detection of _____ in pharmaceutical product.
A. *S. aureus* B. *E. coli* C. *Salmonella typhi* D. *P. aeruginosa*



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9. Which of the following is most commonly used serum in cell culture media _____?
 A. Fetal Bovine Serum B. Human Serum
 C. Chicken Serum D. None of the above
10. Which of the following is not a mechanical method of tissue disaggregation?
 A. Sieving B. Syringing C. Vigorous pipetting d) Trypsinization

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

1. Explain procedure for cell culture & Enlist applications of cell culture technique.
2. With neat labelled diagram discuss in details Design of Aseptic area

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

1. Enlist different test for evaluation of disinfectant and Explain Phenol Coefficient of disinfectant test in detail.
2. Write a note on Assessment of new Antibiotics (Minimum Inhibitory Concentration).
3. Elaborate on factors affecting microbial spoilage.

*****All The Best*****



Mapping of Course Outcome with Second Sessional Exam

Course Outcome	Question	Marks
CO 3033: Explain viruses & fungi with respect to Morphological characteristics, Cultivation and reproduction. Classify disinfectants, explain mode of action, factors influencing, evaluation of disinfectant and test for sterility - (Level 2 Comprehension & Level 3 Application)	Q.1 – 2,3	7
	Q 3 – 1	
CO 3034: Outline & discuss Aseptic area and Laminar air flow. Identify & explain sources of contamination & its prevention. Describe microbiological assay, Standardization & assessment of antibiotics, vitamins & amino acid - (Level 2 Comprehension, Level 3 Application & Level 4 Analysis)	Q 1 – 1,4,5,6	19
	Q 2 – 2	
	Q 3 – 2	
CO 3035: Discuss types, assessment & factors affecting microbial spoilage. Explain preservation of pharmaceutical products & their microbial stability. Outline animal cell culture techniques with its application - (Level 2 Comprehension & Level 4 Analysis)	Q.1 – 7,8,9,10	19
	Q 2 - 1	
	Q 3 - 3	

Improvement Sessional Theory Examination 2018-2019

Subject: Pharmaceutical Microbiology (BP303T)

Day & Date: Wednesday, 28th November 2018

Class: S. Y. B. Pharm

Semester: III

Time: 10:30 am-12:00pm.

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. 'H' stand in HEPA filter _____ %
A. High B. Heavy C. Hot D. Hold
2. Best suitable media for isolation of *Candida albicans* is _____
A. Sabouraud dextrose agar B. Nutrient agar
C. TSI agar D. MacConkey agar
3. Bismuth sulphite medium is used for the growth of _____
A. *Pseudomonas aeruginosa* B. *Salmonella typhi*
C. *Shigella dysenteriae* D. *E. coli*
4. PVC is used as _____ in aseptic room.
A. Non-flexing material B. Flexing material
C. Both D. None of these
5. LAL test is done for _____
A. Oral formulation B. Parenteral formulation
C. Liposomes D. Solid formulation
6. The media containing sugar and gelatin are exposed to 100^o C for 20 minutes on three successive days is known as
A) Tyndallization B) Pasteurization C) Boiling D) Disinfection
7. Isolation of pure culture can be done by
a. Spread plate method b. Pour plate method
c. Streak plate method d. All of the above
8. The influenza and mumps viruses can be cultivated in-----?
a) Allantoic Cavity b) Amniotic cavity
c) chorioallantoic membrane d) Both allantoic and amniotic cavity
9. It is an agent used to prevent infection by inhibiting the growth of bacteria in wounds or tissues?
A. Disinfectant B. Antiseptic C. Antiinflammatory D. Anti-infective
10. _____ cells are pluripotent cells isolated from inner cells mass of early embryos.
A. Retroviral B. Blood
C. Embryonic stem D. Fibroblast

QII Long Answers (Answer any 1 out of 2)

10

1. Discuss moist heat sterilization with respect to principle, method & application.
2. Write in detail about cultivation of viruses.

QIII Short Answers (Answer any 2 out of 3)

10

1. Write a note on Phenol coefficient of disinfectant.
2. Draw the flow chart indicating determination of *Staphylococcus aureus* in pharmaceutical products.
3. Draw neat labelled diagram of (any two)
a) Bacterial Growth curve
b) Design of Aseptic area
c) Bacterial Flagella

Improvement Sessional Theory Examination 2018-2019

Subject: Pharmaceutical Engineering (BP 304T)

Day & Date: Friday, 30/11/2018

Class: S. Y. B. Pharmacy

Semester: III

Time: 10.30 am to 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. Which type of head is measured using pitot tube?
a) Kinetic velocity b) Pressure head c) Static velocity head d) Total head
2. Which one of the following experiments is used for the study of flow of fluids?
a) Bernoullis b) orifice meter c) Reynolds d) Stokes
3. In which equipment, the feed material is suspended within high velocity of air stream.
a) Edge runner mill b) Pebble mill c) Rotary cutter mill d) Ultra-fine grinder.
4. If a given material is fibrous in nature, which mill is preferred?
a) Ball mill b) Colloidal mill c) Fluid energy mill d) Rotary cutter mill
5. Size classification is also known in one of the following.
a) Size analysis b) Size distribution c) Size reduction d) Size separation
6. Which one of the screens is used for size separation of big and heavy particles?
a) Bar screens b) Bolting cloth sieves c) Punched plate screen d) Woven wire screen
7. In microwave oven, the heat flows in one of the following mechanisms.
a) Conduction b) Convection c) Diffusion d) Radiation
8. Heat exchangers are NOT used in one of the following unit operations
a) Crystallisation b) Drying c) Evaporation d) Size separation.
9. Which one of the following is an example of pneumatic dryer?
a) Drum dryer b) Fluidised bed dryer c) Freeze dryer d) Spray dryer
10. Which one of the following is an example of static bed dryer?
a) Drum dryer b) Fluidised bed dryer c) Tray dryer d) Spray dryer

QII Long Answers (Answer any 1 out of 2)

10

1. Write Bernoulli's Equation and Explain the symbols used therein.
2. Describe the factors that influence the selection of milling equipment for size reduction.

QIII Short Answers (Answer any 2 out of 3)

10

1. Describe construction, working, advantages and Disadvantages of fluid energy mill.
2. Describe methods of sieving with suitable example.
3. Describe principle, construction and working of forced film evaporator.

**Shri. Vile Parle Kelavani Mandal's
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Survey No. 499/1, Plot No.3, Behind Gurudwara, Mumbai Agra Highway

Improvement Sessional Theory Examination 2019-2020

Subject: Physical Pharmaceutics-I (BP 302T) **Day & Date:** Friday, 15/11/2019
Class: S. Y. B. Pharmacy **Semester:** III
Time: 01.30 to 03.00 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

11. The solution having an osmotic pressure less than that of 0.9% w/v sodium chloride is called
A. Hypotonic solution B. Isotonic solution
C. Hypertonic solution. D. Isoosmotic solution
12. When CO₂ is dissolved in water, what is the nature of the solution?
A. Basic B. Acidic C. Neutral D. Unrelated
13. The pH of pharmaceutical buffer system can be calculated by
A. pH partition theory B. Noyes whitney law
C. Henderson-Hasselbaltch equation D. Michalis Menten Equations
14. Ethylene diamine tetraacetic acid (EDTA) is an example of ligand type
A. Unidentate B. Bidentate C. Tetradentate D. Hexadentate
15. One of the following method is not a method of complex analysis
A. Solubility Method B. Distribution Method
C. Viscometer Method D. pH Titration Method
16. Which of the following is not a type of Organic molecular complexes?
A. Olefin Type B. Drug Caffeine Type
C. Quinhydrone type D. Polymer complexes
17. Lecithin is a type of.
A. Anionic surfactants B. Cationic surfactants
C. Amphiphilic surfactant D. Non ionic surfactants
18. Surfactants with HLB value more than 16 indicates
A. Solubilizing agents B. Wetting agents
C. Detergents D. Spreading agents
19. The unit of surface tension is expressed as
A. cm² B. ergs C. dynes/cm D. None of the above
20. The HLB range for Lipophilic surfactant is.....
A. 2-9 B. 9-16 C. 16-20 D. above 20

QII Long Answers (Answer any 1 out of 2)

10

3. Explain in detail Freundlich and Langmuir adsorption isotherms.
4. What are the applications of Complexation and protein binding in pharmacy? Explain Inclusion complexes in detail.

QIII Short Answers (Answer any 2 out of 3)

10

4. What are the methods of analysis for determining Drug-protein binding?
5. Explain the Capillary rise method for determining Surface tension.
6. Explain the concept of HLB & its importance.



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

Improvement Sessional Theory Examination 2019-2020

Subject: POC II

Day & Date: 14/11/19

Class: S.Y B.Pharm

Semester: IIIrd semester

Time: 10:30pm to 12:00pm

Max. Marks: 30

R.No:

- 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. Fats and oils are esters of _____.
A) Acetic acid and alcohols B) Fatty acid & alcohol C) Carboxylic acid and alcohol D) None of the above
2. KMnO_4 oxidizes naphthalene in basic media to yield _____.
A) Phthalic acid B) Phthalonic acid C) Phthalic anhydride D) Naphthoquinone
3. Nitration of benzene is carried out -----
A) conc. H_2SO_4 ii) Conc. HNO_3 C) Mixture of conc. H_2SO_4 and Conc. HNO_3 D) conc. HCl
4. All the carbon atom in anthracene are _____.
A) sp hybridized B) sp^2 hybridized C) sp^3 hybridized D) None of the above
5. Phenol is derivative of _____.
A) Alkanes B) Alkynes C) Benzene D) Amine
6. When Naphthalene reflux with sodium in presence of _____ gives tetralin.
A) $\text{C}_{15}\text{H}_{11}\text{OH}$ B) $\text{C}_2\text{H}_5\text{OH}$ C) H_2 D) HCl
7. RM value is the no of millilitere of 0.1 N KOH is required to neutralize soluble volatile fatty acids derived from _____ gm of fat.
A) 2 B) 3 C) 1 D) 5
8. Molecular formula of Anthracene is _____.
A) $\text{C}_{14}\text{H}_{10}$ B) C_{14}H_9 C) $\text{C}_{13}\text{H}_{10}$ D) $\text{C}_{10}\text{H}_{14}$
9. Electrophilic substitution reaction on naphthalene occurs preffentially at _____.
A) C2 Position B) C1 Position C) C6 Position D) C9 Position
10. Saponification is hydrolysis
i) By alkali ii) In digestive tracts of human beings iii) By acids iv) By salts

QII Long Answers (Answer any 1 out of 2)

10

1. Give the methods of preparation & reaction of Anthracene.
2. A) Write a note on i) Acid value ii) Saponification value.
B) Describe the drying of oil and rancidity of oil.

QIII Short Answers (Answer any 2 out of 3)

10

1. What are fatty acids? Explain in detail the different chemical reactions of fatty acids.
2. How will you synthesize Naphthalene
3. Write the structure and uses of Diphenyl Methane and Anthracene.



**Shri. Vile Parle Kelavani Mandal's
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Survey No. 499/1, Plot No.3, Behind Gurudwara, Mumbai Agra Highway

Improvement Sessional Theory Examination 2019-2020

Subject: Pharmaceutical Microbiology (BP303T)
Class: S. Y. B. Pharm
Time: 1:30 pm - 3:00pm.

Day & Date: Friday, 15th November 2019
Semester: III
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 microorganisms are used in the phenol coefficient of disinfectant test.
A. Pseudomonas aureginosa & Salmonella typhi
B. Salmonella typhi & Staphylococcus aureus
C. Streptococcus pyogenes & Salmonella typhi
D. Staphylococcus aureus & Pseudomonas aureginosa
2. Incubation temperature range used for the growth of bacteria in sterility test as per I.P is _____
A. 20-250C B. 25-300C C. 30-350C D. 35-400C
3. Bismuth sulphite medium is used for the growth of _____
A. Pseudomonas aeruginosa B. Salmonella typhi C. Shigella dysenteriae D. E. coli
4. _____ cells are pluripotent cells isolated from inner cells mass of early embryos.
A. Retroviral B. Blood C. Embryonic stem D. Fibroblast
5. Enzymatic disaggregation of cell is done by using _____.
A. Trypsin B. Collagenase C. Both A & B D. None of the above
6. Most important surface active disinfectants are _____
A. Anionic B. Cationic C. Non ionic D. Amphoteric
7. Diffusion of antibiotics takes place in _____
A. Turbidity method B. Cylinder plate method C. Both D. None of these
8. DOP test is used for validation of _____
A. Membrane filter B. HEPA filter C. Aseptic room D. Autoclave
9. Best suitable media for isolation of Candida albicans is _____
A. Sabouraud dextrose agar B. Nutrient agar C. TSI agar D. MacConkey agar
10. Which of the following is not ideal property of preservative
A. It should be effective B. It should be stable
C. It should be compatible with drug D. It should be insoluble

QII Long Answers (Answer any 1 out of 2)

10

1. Define preservative. Enlist factors affecting action of preservative. Explain evaluation of microbial stability of formulation.
2. Draw a neat labeled diagram of aseptic area. Write in detail about designing of aseptic area.

QIII Short Answers (Answer any 2 out of 3)

10

1. Write a note on microbial assay.
2. Draw the flow chart indicating determination of Salmonella in pharmaceutical products.
3. Write short notes on Phenol co-efficient of disinfectant

***** Best of Luck*****



Shri. Vile Parle Kelavani Mandal's
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Survey No. 499/1, Plot No.3, Behind Gurudwara, Mumbai Agra Highway

Improvement Sessional Theory Examination 2019-2020

Subject: POC II

Day & Date: 14/11/19

Class: S.Y B.Pharm

Semester: IIIrd semester

Time: 10:30pm to 12:00pm

Max. Marks: 30

R.No:

- 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. Fats and oils are esters of _____.
A) Acetic acid and alcohols B) Fatty acid & alcohol C) Carboxylic acid and alcohol D) None of the above
2. KMnO_4 oxidizes naphthalene in basic media to yield _____.
A) Phthalic acid B) Phthalonic acid C) Phthalic anhydride D) Naphthoquinone
3. Nitration of benzene is carried out -----
A) conc. H_2SO_4 ii) Conc. HNO_3 C) Mixture of conc. H_2SO_4 and Conc. HNO_3 D) conc. HCl
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A) sp hybridized B) sp^2 hybridized C) sp^3 hybridized D) None of the above
5. Phenol is derivative of _____.
A) Alkanes B) Alkynes C) Benzene D) Amine
6. When Naphthalene reflux with sodium in presence of _____ gives tetralin.
A) $\text{C}_{15}\text{H}_{11}\text{OH}$ B) $\text{C}_2\text{H}_5\text{OH}$ C) H_2 D) HCl
7. RM value is the no of millilitere of 0.1 N KOH is required to neutralize soluble volatile fatty acids derived from _____ gm of fat.
A) 2 B) 3 C) 1 D) 5
8. Molecular formula of Anthracene is _____.
A) $\text{C}_{14}\text{H}_{10}$ B) C_{14}H_9 C) $\text{C}_{13}\text{H}_{10}$ D) $\text{C}_{10}\text{H}_{14}$
9. Electrophilic substitution reaction on naphthalene occurs preffentially at _____.
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10. Saponification is hydrolysis
i) By alkali ii) In digestive tracts of human beings iii) By acids iv) By salts

QII Long Answers (Answer any 1 out of 2)

10

1. Give the methods of preparation & reaction of Anthracene.
2. A) Write a note on i) Acid value ii) Saponification value.
B) Describe the drying of oil and rancidity of oil.

QIII Short Answers (Answer any 2 out of 3)

10

1. What are fatty acids? Explain in detail the different chemical reactions of fatty acids.
2. How will you synthesize Naphthalene
3. Write the structure and uses of Diphenyl Methane and Anthracene.



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Improvement Sessional Theory Examination 2019-2020

Subject: Pharmaceutical Microbiology (BP303T)

Day & Date: Friday, 15th November 2019

Class: S. Y. B. Pharm

Semester: III

Time: 1:30 pm - 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 microorganisms are used in the phenol coefficient of disinfectant test.
A. Pseudomonas aureginosa & Salmonella typhi
B. Salmonella typhi & Staphylococcus aureus
C. Streptococcus pyogenes & Salmonella typhi
D. Staphylococcus aureus & Pseudomonas aureginosa
2. Incubation temperature range used for the growth of bacteria in sterility test as per I.P is _____
A. 20-250C B. 25-300C C. 30-350C D. 35-400C
3. Bismuth sulphite medium is used for the growth of _____
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4. _____ cells are pluripotent cells isolated from inner cells mass of early embryos.
A. Retroviral B. Blood C. Embryonic stem D. Fibroblast
5. Enzymatic disaggregation of cell is done by using _____.
A. Trypsin B. Collagenase C. Both A & B D. None of the above
6. Most important surface active disinfectants are _____
A. Anionic B. Cationic C. Non ionic D. Amphoteric
7. Diffusion of antibiotics takes place in _____
A. Turbidity method B. Cylinder plate method C. Both D. None of these
8. DOP test is used for validation of _____
A. Membrane filter B. HEPA filter C. Aseptic room D. Autoclave
9. Best suitable media for isolation of Candida albicans is _____
A. Sabouraud dextrose agar B. Nutrient agar C. TSI agar D. MacConkey agar
10. Which of the following is not ideal property of preservative
A. It should be effective B. It should be stable
C. It should be compatible with drug D. It should be insoluble

QII Long Answers (Answer any 1 out of 2)

10

1. Define preservative. Enlist factors affecting action of preservative. Explain evaluation of microbial stability of formulation.
2. Draw a neat labeled diagram of aseptic area. Write in detail about designing of aseptic area.

QIII Short Answers (Answer any 2 out of 3)

10

1. Write a note on microbial assay.
2. Draw the flow chart indicating determination of Salmonella in pharmaceutical products.
3. Write short notes on Phenol co-efficient of disinfectant

***** Best of Luck*****



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

Remedial Sessional Theory Examination 2019-20

Subject: Physical Pharmaceutics-I (BP 302T) **Day & Date:** Saturday, 07/09/2019

Class: S.-Y. B. Pharmacy

Semester: III

Time: 10.00-11.30 am

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

11. Joule Thomson effect describes gases'
A. Contraction B. Sudden Expansion C. Expansion D. Relaxion
12. Methanol and water are
A. Miscible B. Non Miscible
C. Forms Saturated Solution D. Forms Supersaturated Solution
13. Pressure that vapors apply on surface of liquid at equilibrium is called...
A. Torr B. Vapor Pressure C. Liquid Pressure D. Condensation
14. The process in which the solid changes directly into vapors without changing in liquid state is called...
A. Condensation B. Evaporation C Boiling D. Sublimation
15. Refractive index is ration between speed of light in air or vacuum and
A A speed of sound in a medium B. A speed of light in a medium
C. Can be A or B D. None of the above
16. What is a pH of the solution of 0.1M HCl?
A.0.1 B. 1.0 C. 7.0 D. 13.0
17. When CO₂ is dissolved in water, what is the nature of the solution?
A. Acidic B. Basic C. Neutral D. Unrelated
18. If an animal cell is placed in HYPERTONIC solution, what happens to the cell?
A. Cell swells and bursts B. Shrinks from water loss
C. Nothing happens D. Solute moves in and out
19. Which one of following has acidic pH?
A. Blood B. Intestinal fluids C. Orange Juice D. Saliva.
20. Mass of solute dissolved in 100g of solution refers to.....
A. Percentage of solution B. Molarity of solution
C. Molality of solution D. None of above

QII Long Answers (Answer any 1 out of 2)

10

3. Define solubility & discuss various factors affecting solubility of solids in liquids.
4. What are Organic molecular complexes? Classify it & Describe the nature of interactions with suitable examples of each type

QIII Short Answers (Answer any 2 out of 3)

10

4. Describe the principle and experimental procedure for pH determination by any one method.
5. What is Nernst Distribution law, its limitation & application?
6. Define surface tension & interfacial tension. Explain any TWO methods for determination of surface tension & interfacial tension.



Remedial Sessional Theory Examination 2019-2020

Subject: Pharmaceutical Microbiology (BP303T) **Day & Date:** Sunday, 8/09/2019

Class: S. Y. B. Pharm

Semester: III

Time: 10:30 am-12:00pm.

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. 'H' stand in HEPA filter _____%
A. High B. Heavy C. Hot D. Hold
2. Best suitable media for isolation of *Candida albicans* is _____
A. Sabouraud dextrose agar B. Nutrient agar
C. TSI agar D. MacConkey agar
3. Bismuth sulphite medium is used for the growth of _____
A. *Pseudomonas aeruginosa* B. *Salmonella typhi* C. *Shigelladysenteriae* D. *E. coli*
4. PVC is used as _____ in aseptic room.
A. Non-flexing material B. Flexing material
C. Both D. None of these
5. LAL test is done for _____
A. Oral formulation B. Parenteral formulation
C. Liposomes D. Solid formulation
6. The media containing sugar and gelatin are exposed to 100° C for 20 minutes on three successive days is known as
A) Tyndallization B) Pasteurization C) Boiling D) Disinfection
7. Isolation of pure culture can be done by
a. Spread plate method b. Pour plate method
c. Streak plate method d. All of the above
8. The influenza and mumps viruses can be cultivated in-----?
a) Allantoic Cavity b) Amniotic cavity
c) chorioallantoic membrane d) Both allantoic and amniotic cavity
9. It is an agent used to prevent infection by inhibiting the growth of bacteria in wounds or tissues?
A. Disinfectant B. Antiseptic C. Antiinflammatory D. Anti-infective
10. _____ cells are pluripotent cells isolated from inner cells mass of early embryos.
A. Retroviral B. Blood C. Embryonic stem D. Fibroblast

QII Long Answers (Answer any 1 out of 2)

10

1. Discuss moist heat sterilization with respect to principle, method & application.
2. Discuss Gaseous Sterilization using ethylene oxide with respect to principle, method & application.

QIII Short Answers (Answer any 2 out of 3)

10

1. Write a note on Bacterial Growth curve.
2. Elaborate on cultivation of viruses.
3. Draw neat labelled diagram of (any two)
a) Anaerobic Gas pack Chamber b) Ultra Structure of bacteria
c) Bacterial Flagella