Registration no: | | | | | | | | | | |

Total Number of Pages:02 **B. PHARM**

15PH401

4th Semester Regular Examination 2016-17

Physical Pharmaceutics- II

BRANCH: Pharmacy

Time: 3 Hours

Max Marks: 100

Q. CODE: Z301

Answer Section 'A' which is compulsory and any Four from Section 'B'.

The figures in the right hand margin indicate marks.

Section A (Answer all the questions)

Q1 Answer the following questions: **(2x10)**

a) Diameter observed under microscopic method is _____diameter.
b) The instrument used to measure the particle volume is _____
c) Rheology is _____
d) Surface tension of a liquid is _____at Critical temperature.
e) Electrolytes are added to _____the zeta potential.
f) Colloidal particles are seen under _____microscope.
g) Solution of protein and starch in water are example of _____ colloids.
h) Milk is _____ emulsion.
i) What is glidant and lubricant
j) Brooke-field viscometer is an example of _____viscometer.

Q2 Answer the following questions: **(2x10)**

a) Write about fundamental properties of powder?
b) Define shape factor
c) Characterize surface and interfacial tension.
d) Explain spurs and bulges
e) What is strtactured vehicle? Describe with suitable example.
f) Describe about emulsifying agent.
g) Define stokes diameter.
h) What is CMC, describe very briefly.
i) Write about different types of isotherms
j) Mention the principle of coulter counter.

Section B (Answer any four questions)

Q3 **a)** What is micromeritics, describe briefly and mention the importance in pharmacy. **(10)**
b) Describe about Edmundson equation. **(5)**

Q4 **a)** Describe flow behavior of Newtonian and Non-Newtonian system. **(10)**
b) Write notes on thixotropy **(5)**

Q5 Write notes on
a) Specific surface **(5)**
b) Angle of repose **(5)**
C) Spreading coefficient **(5)**

Q6 **a)** Describe about various types of viscometer used to determine viscosity of Newtonian and non-Newtonian fluid. Illustrate about Cup and Bub type viscometer. **(10)**
b) Define Zeta potential, mention its importance. **(5)**

Q7 **a)** What is surfactant, classify it and mention its importance in pharmacy. **(10)**
b) Define HLB. **(5)**

Q8 **a)** Illustrate the distinguish features of flocculated and deflocculated suspension. **(10)**
b) What is Gold number? **(5)**

Q9 **a)** Describe about colloidal dispersion and illustrate the types and properties of colloids. **(10)**
b) Write about BET equation. **(5)**

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Total Number of Pages: 2 (Two) **B. PHARM**
15PH402

4th Semester Regular Examination 2016-17
PHARM. ENGINEERING – II
Time: 3 Hours
Max Marks: 100
Q.CODE: Z421

Answer Section 'A' which is compulsory and any Four from Section 'B'.
The figures in the right hand margin indicate marks.

Section A (answer all the questions)

Q1 Answer the following questions: **(2x10)**

a) The flow of the fluid is said to be laminar if Reynolds no is ---------- than 2100.
i) Less ii) Greater iii) equal iv) none

b) Which one of the following has a high tendency to absorb water?
i) Absolute alcohol ii) Borax iii) Caffeine iv) Calcium chloride

c) De naval clarifier is used for _____.
i) Centrifugation ii) Clarification iii) Filtration iv) Sedimentation.

d) Electrostatic precipitators are used to prevent which hazards?
i) Chemical ii) Dust iii) Electrical iv) Fire

e) Which metal make the steel corrosion resistant?
i) Cr+Ni ii) Cu+Se iii) Ti+Nb iv) Ta+Mo

f) Which glass container is used for the storage of light sensitive pharmaceuticals?
i) Air tight ii) Well closed iii) Amber colored iv) Unit dose

g) Which crystallizer is suitable for thermo labile substances?
i) Vacuum ii) Krystal iii) Swenson Walker iv) Agitated batch

h) Sodium chloride refers to _____ type of crystal form.
i) Hexagonal ii) Cubic iii) tetragonal iv) Monoclinic

i) For handling of compressed air _____ valves are used.
i) Glove ii) Gate iii) Plug cock iv) Diaphragm

j) Which is not a reciprocating pump? i) Piston ii) Plunger iii) Gear iv) Diaphragm

Q2 Answer the following questions: **(2x10)**

a) Write and define types of flow of fluid.
b) Define Reynolds number and write its significance.
c) Define humidity and relative Humidity.
d) What is Ostwald ripening?
e) Write the significance of solubility curve.
f) Define conveyer and give example of conveyers used for transportation of solid.
g) Define Centrifugation and write its two applications in Pharmacy.
h) Write application of humidification in pharmacy.
i) Write advantages of steel as material of construction.
j) Define the term Nucleation.

Section B (answer any four questions)

Q3	**a)**	Classify various methods of measurement of flow of fluids. Write principle, construction, working and applications of venturi meter for measurement of rate of flow of fluid.	**(10)**
	b)	Derive an equation for pressure difference for simple manometer.	**(5)**
Q4	**a)**	Define Humidification. Write applications of humidity in Pharmacy. Describe various methods for measurement of humidity.	**(10)**
	b)	Describe the mechanism and various approaches used for dehumidification.	**(5)**
Q5	**a)**	Write principle, construction, working, applications, advantages and disadvantages of screw conveyors.	**(10)**
	b)	Write note on Centrifugal pump	**(5)**
Q6	**a)**	Define crystallization. Write its application in pharmacy. Describe the construction and working principle of Krystal crystallizer.	**(10)**
	b)	Describe Mier's supersaturation theory and write its limitations.	**(5)**
Q7	**a)**	Write principle, construction, working, applications, advantages and disadvantages of perforated basket centrifuge.	**(10)**
	b)	Describe principle of centrifugation.	**(5)**
Q8	**a)**	Write a detail note on various methods used for prevention and control of corrosion.	**(10)**
	b)	Write a note on Glass as a material of construction.	**(5)**
Q9	**a)**	Define industrial hazards. How dust explosion can be control. Describe accidental records.	**(10)**
	b)	Write a note on industrial electric hazards.	**(5)**

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Total Number of Pages: 2

B. PHARM
15PH403

4th Semester Regular Examination 2016-17

BIOCHEMISTRY

BRANCH: Pharmacy
Time: 3 Hours
Max marks: 100
QUESTION CODE: Z534

Answer Part-A which is compulsory and any four from the Part-B.

The figures in the right hand margin indicate marks.

Part-A (Answer the following questions)

Q.1 **Choose the correct answer:** **2 x 10**

a) A water soluble vitamin which is a component of coenzyme A is:
A. Biotin B) Pantothenic acid C) Ascorbic acid D)Retinoic acid

Fatty acid entry into cytosol requires

b) A) Fatty acid binding protein B) Albumin
C) Fatty acid binding protein and Na^+ D) Na^+

c) Conversion of Lactate to glucose is known as
A. Glycogenolysis B. Glycogenesis C. Cori Cycle D. Glycolysis

d) α-Oxidation occurs in
A. Pyuruvic acid B. Phytanic acid C. Palmitic acid D. Arachidonic acid

e) Synthesis of Urea takes place exclusively in
A. Kidney B. Liver C. Muscle D. Urinary bladder

f) NAD+, FAD, and FMN are all cofactors for:
A. Oxidoreductases B. Transferases C. Hydrolases D. Ligases

g) A competitive inhibitor used in hypertension is:
A. Malonate B. Allopurinol C. Captopril D. Oxaloacetate

h) α-Oxidation occurs in
B. Pyuruvic acid B. Phytanic acid C. Palmitic acid D. Arachidonic acid

i) The no. of ATP produced in anaerobic phase of glycolysis is
A. 8 B. 10 C.2 D.5

j) The codon (s) that terminate(s) protein biosynthesis
a) UAA b) UAG c) UGA d) All of them

Q.2 **Answer the following** **2x10**

a) Define high energy compounds. Explain with examples.

b) What is Werneke-Karsakoff syndrome?

	c)	What is ketosis? Write down the normal ketone body level.	
	d)	What is translation?	
	e)	Write down the biological significance of ATP.	
	f)	What is Rapaport-Leubering cycle?	
	g)	Define redox potential. Write its significance.	
	h)	Differentiate between DNA and RNA.	
	i)	Define essential fatty acids. Give Examples. Mention two functions of it.	
	j)	What is Fermentation?	

Part-B (Answer any Four)

Q.3	**a)**	What is gluconeogenesis? Mention the various substrates used for it and mention the key enzyme of gluconeogenesis.	**5**
	b)	What is Glycolysis? Describe the reactions of glycolysis and mention the energetic of this pathway.	**10**
Q.4	**a)**	Discuss about competitive enzyme inhibition.	**5**
	b)	Define enzyme. Classify it with suitable examples. Describe the factors affecting the enzyme activity.	**10**
Q.5.	**a)**	What do you mean by Xenobiotics? Explain in detail Phase-II detoxification reaction.	**10**
	b)	Write notes on Transcription.	**5**
Q.6	**a)**	What are the different types of fatty acid oxidation? Describe how fatty acid entering into mitochondrial matrix.	**6**
	b)	Explain the reaction of β-oxidation of fatty acids. Mention the energy produced in β-oxidation of fatty acids.	**9**
Q.7.	**a)**	Write down the mechanism of enzyme action.	**5**
	b)	Define Coenzyme, classify it. Write down the biochemical role of PLP and Biotin.	**10**
Q.8	**a)**	Write notes on Glycogenesis.	**5**
	b)	Describe Pentose phosphate Pathway. Mention its importance.	**10**
Q.9		**Write notes on:-(Any three)**	**5x3**
	a)	Urea cycle	
	b)	ATP synthesis	
	c)	Prostaglandins	
	d)	Mechanism of transport process	
	e)	Application of Enzyme	

Registration no: | | | | | | | | | | |

Total Number of Pages: 03 **B. PHARM**

15PH404

4th Semester Regular Examination 2016-17
COMPUTER APPLICATION
BRANCH: Pharmacy
Time: 3 Hours
Max Marks: 100
Q. CODE: Z673

Answer Section 'A' which is compulsory and any Four from Section 'B'.
The figures in the right hand margin indicate marks.

Section A

Q1 Answer the following questions: **(2x10)**

a) PCI stands for ---------- in computer organization.

b) What is the 2's complement of 1010
- i. 0101
- ii. 0110
- iii. 0010
- iv. None

c) -------- is the heart of operating system.
- i. Kernel
- ii. Shell
- iii. System call
- iv. None

d) Which is not a data type in java?
- i. int
- ii. float
- iii. boolean
- iv. Long

e) Which method register a thread in a ready state?
- i. run
- ii. sleep
- iii. start
- iv. wait

f) Find out the error from the given java code:

```
Public class my class
{
Public static void main(strings args[])
{
System.out.println("Hello")
}
}
```

g) TCP belongs to which layer protocol
- i. Application layer
- ii. Transport layer
- iii. Network layer

iv. Physical layer

h) What is the full form of WWW?
i. World Wide Web
ii. World Web Wide
iii. Web Wide World
None

i) println() is used in java:
i. True
ii. False

j) The extension of java file is ------
i. .cpp
ii. .c
iii. .java
iv. .net

Q2 Answer the following questions: (2x10)

a) Explain the first generation of computer with examples.
b) How ALU is used in CPU?
c) Convert $(AB23)_{16}$ to $(\ldots.)_2$
d) What are the various application software used in system software?
e) Write a command to copy a file in linux operating system?
f) Differentiate between algorithm and flow chart in java.
g) What is a constant in java? Give one example.
h) What are the advantages of switch statement in java?
i) How ethernet is used in networking?
j) Explain the meaning of URL with example.

Section B (answer any four questions)

Q3 a) What is java? Why java is called an object oriented language justifies your answer? Write a program to enter a number using buffer reader class and display it. **(10)**
b) Write a program to find out odd and even number between 1 to 100 in java. **(5)**

Q4 a) Explain wrapper class. What is the need of wrapper class? Write a java program to find out the addition of two numbers in java. **(10)**
b) What is the difference between scanner class and Buffered Reader class? Explain with examples. **(5)**

Q5 a) What is polymorphism? Explain the difference between static and dynamic polymorphism, Give an example on method overloading and method overriding in java **(10)**
b) Write a program in java to calculate the grade of a class using switch case. **(5)**

Q6 a) What are the protocols present in network layer of TCP/IP model? Draw the architecture of TCP/IP model and explain each layer. **(10)**
b) How the application of internet used to control different types of drugs and helpful to medical treatments? **(5)**

Q7	**a)**	What is the advantage of for loop in java? Explain the different types loop in java with examples.	**(10)**
	b)	Differentiate between LAN and WAN with examples	**(5)**
Q8	**a)**	What is thread in java? Explain the life cycle of thread in java. Write a program for a thread priority.	**(10)**
	b)	What is the role of operating system in computer system? Differentiate between multiprogramming and multi threading in operating system.	**(5)**
Q9	**a)**	What is the use of presentation layer in OSI model? Draw the structure of OSI model and explain each layer.	**(10)**
	b)	Differentiate between WWW and Internet. Draw the client-server architecture in Internet technology.	**(5)**

Registration no: | | | | | | | | | | |

Total Number of Pages: 02

B.PHARM
15PH405

4th Semester Regular Examination 2016-17
ORGANIC CHEMISTRY- III
BRANCH: Pharmacy
Time: 3 Hours
Max Marks: 100
Q.CODE: Z897

Answer Part-A which is compulsory and any four from the Part-B.

The figures in the right hand margin indicate marks.

Part-A (Answer all the questions)

Q.1 **Choose the correct answer:** **(2 x 10)**

a) All the following are monosaccharides except:
A) Glucose B) Fructose C) Maltose D) Galactose

b) Sucrose is a disaccharide made up of
A) Glucose and Fructose B) Glucose and Lactose
C) Glucose and Glucose D) Glucose and Galactose

c) Carbohydrates occur naturally in:
a) A) D-form B) L-form C) Both A and B D) None of these

d) Which of the following amino acids has indole ring in its side chain?
A) Phenyl alanine B) Tyrosine C) Histidine D) Tryptophan

e) Amino acids with hydroxyl (OH) group include:
A) Serine B) Threonine C)Tyrosine D) All of the above

f) A lipid is formed by the condensation reaction between:
A) Carbon and hydrogen B) Fatty acids and alcohol
C) Fatty acids and amino acids D) Fatty acids and amines

g) Which of the following is a derived lipid:
A) Fats B)Oils C) Steroids D) Waxes

h) Carbohydrates along with fatty acids are called:
A) Simple lipids B) Glycolipids C) Waxes D) Phospholipids

i) Which of the following fatty acid is not synthesized in body:
A) Palmitic acid B) Stearic acid C) Linoleic acid D)Oleic acid

j) The minimum number of carbon in monosaccharide is
A) 1 B)2 C)3 D)4

Q.2 **Answer the followings:** **(2x10)**

a) What is hydrogenolysis?

b) Why ghee is solid and oil is liquid at room temperature?

c) Write the reaction of (4+2) cycloaddition in Diels Alder Reaction.

d) Differentiate DNA and RNA.

e) What is saponification value?

f) What is Mutarotation?

g) Give the structure and numbering of Phenothiazine.

h) Define Benzoin condensation.

i) Define Epimers with examples?

j) Write down the skeleton of D- & L- Glucose.

Part-B (Answer any Four)

Q.3	**a)**	Define and classify Carbohydrates with suitable examples.	**(5)**
	b)	Discuss the chemical properties of carbohydrates.	**(5)**
	c)	Discuss the inter-conversion of carbohydrates.	**(5)**
Q.4	**a)**	Define and classify amino acids with suitable example.	**(5)**
	b)	Write down the various methods of preparation and chemical properties of Amino acids.	**(8)**
	c)	Discus Zwitter ions with suitable examples.	**(2)**
Q.5.	**a)**	Define and classify Proteins.	**(5)**
	b)	Discuss briefly about the Purification procedure of proteins.	**(5)**
	c)	Write a short notes on Nucleic Acid.	**(5)**
Q.6	**a)**	Define and classify lipids with suitable example.	**(5)**
	b)	Describe the physical and Chemical properties lipids.	**(10)**
Q.7.	**a)**	What do you understood by pericyclic reactions write down its types with example?	**(5)**
	b)	Discuss the HOMO and LUMO concept showing in cycloaddition reaction with its orbital symmetry.	**(10)**
Q.8	**a)**	What did you understood by heterocyclic compounds and write down the name and nomenclature of five hetero cyclic compounds containing two hetero atoms?	**(5)**
	b)	Discuss the general methods of preparation of Pyrazole.	**(5)**
	c)	Discuss the chemical properties of Pyrazole.	**(5)**
Q.9		**Write short notes on any three of the following reagents with its mechanism:**	**(5X3)**

a) Reformatsky Reaction

b) Perkin Reaction

c) Oppenaur Oxidation

d) Knoevenagel Condensation

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Total Number of Pages: 03

B.PHARM
15PH406

4TH SEMESTER REGULAR EXAMINATION 2016-17
MATHEMATICS & STATISTICS

BRANCH: Pharmacy
Time: 3 Hours
Max Marks: 100
Q.CODE: Z773

Answer Section 'A' which is compulsory and any Four from Section 'B'.
The figures in the right hand margin indicate marks.

Section- A

Q1. Answer all questions : (2X10)

a) $\int_0^{\pi/2} sinxdx =$ _____(1,0,-1,2)
b) $\int_a^b e^x dx =$ _____
c) The degree of $x^2 + xy$ is _____(0,1,2,3)
d) The roots of the equation $y'' - y' - 6 = 0$ is _____
e) L$\{t\}$=_____($\frac{1}{p}, \frac{1}{p^2}, \frac{2}{p}, \frac{2}{p^2}$)
f) The Laplace Transform of $cosat$ is _____
g) The arithmetic mean of first 'n' natural numbers is_____
($\frac{n+1}{2}, \frac{n+2}{2}, \frac{n-1}{2}, \frac{n}{2}$)
h) Limits of correlation coefficient is_____
i) In_____distribution mean and variance are same.
(binomial, Poisson, normal, Chi-square)
j) In binomial distribution mean=_____ and variance=_____

Q2. Answer all questions : (2X10)

a) Evaluate : $\int \sqrt{1 - sin2x}\, dx$
b) Evaluate:$\int xe^x dx$
c) Solve:$\frac{dy}{1+y^2} = \frac{dx}{1+x^2}$
d) Define homogeneous equation.
e) What is Laplace Transforms?
f) Evaluate: L$\{e^{at}\}$
g) What is positive correlation?
h) Find the variance of 1,2,3,4,5

i) If the mean of a Poisson distribution is 4,find S.D
j) Write two properties of Normal Distribution.

Section B(Answer any four)

Q.3. a) Evaluate: $\int \frac{x^2+5x+41}{(x+3)(x-1)(2x-1)}dx$ (8+7)

b) Evaluate: $\int_0^{\pi/2} \frac{dx}{5+4cosx}dx$

Q.4.a) Solve : $\frac{dy}{dx} = \frac{x-y+1}{x+y-3}$ (8+7)

b) Solve the differential equation

$(ycosx + siny + y)dx + (sinx + xcosy + x)dy = 0$

If it is exact.

Q.5. a) Find the transform of the function (8+7)

$f(t) = 3sin4t - 2cos5t$

b) Find the inverse transform of

$\frac{p^2+2p-3}{p(p-3)(p+2)}$

Q.6. a) Compute the standard deviation from the following data (8+7)

Class(x):	0-10	10-20	20-30	30-40	40-50	50-60	60-70
Frequency:	8	12	17	14	9	7	4

b) Following are the rank obtained by 10 students in two subjects Statistics and Mathematics. To what extent the knowledge of the students in the two subject are related?

Statistics:	1	2	3	4	5	6	7	8	9	10
Mathematics:	2	4	1	5	3	9	7	10	6	8

Q.7.a) Compute the variance of Binomial Distribution. (8+7)

b) Fit a Poisson distribution to the following data and calculate the the theoretical frequencies. $(e^{-0.5} = 0.6065)$

x	0	1	2	3	4
f	123	59	14	3	1

Q.8.a) Evaluate: $\int \frac{1}{\sqrt{(x^2+2x+2)}} dx$ **(5+5+5)**

b) Solve: $x^2 y dx - (x^3 + y^3) dy = 0$

c) Find L($sin^2 2t$**)**

Q.9.a) Write short note on kurtosis. **(5+5+5)**

b) If A and B are any two events and are not disjoint, then prove that

$$P(A \cup B) = P(A) + P(B) - P(A \cap B)$$

c) In an experiment on immunization of cattle from tuberculosis the following results were obtained:

	Affected	Not affected
Inoculated	12	26
Not Inoculated	16	6

Calculate χ^2 **and discuss the effect of vaccine in controlling susceptibility to tuberculosis.(5% value of** χ^2 **for one degree of freedom=3.84)**

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Total Number of Pages: 02 **B.PHARM**
PH.4.1

4th Semester Back Examination 2016-17
PHARMACEUTICS - III (PHYSICAL PHARMACEUTICS-II)
BRANCH: PHARMACY
Time: 3 Hours
Max Marks: 70
Q.CODE: Z300

Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.

Q1 **Answer the following questions:** **(2 x 10)**

a) Define projected diameter and volume diameter.
b) What do you mean by undersize and oversize of particles?
c) Define Angle of Repose with significance.
d) What is Kinematic and Dynamic viscosity?
e) Differentiate between Newtonian flow and Non-Newtonian flow with examples.
f) What are colloids? Arrange particle size In ascending order of coarse suspension, true solution, and colloids.
g) What is gold number? Write their significance.
h) Define zero order reaction, write the unit of rate constant.
i) What is EDTA? Write Importance of EDTA.
j) Write the full form of BET. Define Shelf life of drug?

Q2 **a)** Write application of Micromeritics in pharmacy. **(5)**

b) Write Edmondson's equation. How the equation is related to particle size. **(5)**

Q3 **a)** Write the calibration procedure for Microscopic method. **(5)**

b) Write principle of coulter counter method. **(5)**

Q4 What are the different types of Non-Newtonians flow? Give their specific examples. **(10)**

Q5 **a)** Classify different types of colloids with examples. **(5)**

b) Write short notes about protective colloids. **(5)**

Q6	**a)**	Write Arrhenius equations, how it is related to stability study.	**(5)**
	b)	Write short notes on Cone and Plate method.	**(5)**
Q7	**a)**	Define order and molecularity of reaction with suitable examples.	**(5)**
	b)	Derive Langmuir equation for adsorption isotherm.	**(5)**

Q8 **Answer any two:** **(5 x 2)**

a) Bulk density, Tap density and porosity.
b) Classify differ types of complexes
c) Electrical properties of colloids
d) Sol-Gel-Sol theory.

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B.PHARM
PH.4.10

4th Semester Back Examination 2016-17

PHARMACEUTICAL CHEMISTRY-IV (ORGANIC CHEMISTRY-III)

BRANCH: Pharmacy

Time: 3 Hours
Max Marks: 70
Q.CODE: Z898
Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.

Q1 **Answer the following questions:** **(2 x 10)**

a) What is rancidity of oils?

b) Furan reacts with maleic anhydride to form adduct but pyrrole and thiophene do not. Explain why?

c) Give the structure and numbering of isoquinoline.

d) Differentiate between reducing and non-reducing sugar with suitable examples.

e) Differentiate between RNA and DNA.

f) What is Beckmann rearrangement reaction?

g) Give the mechanism of Oppenaur oxidation.

h) Discus the mechanism of mannich reaction.

i) What is peptide linkage?

j) Differentiate between starch and cellulose.

Q2 **a)** Outline the general method of preparation of pyrrole. **(5)**

b) Discuss the Chemical properties of pyrrole with suitable examples. **(5)**

Q3 **a)** What are polynuclear aromatic hydrocarbons? Discuss three method of preparation of anthracene. **(5)**

b) Outline the chemical reactions of anthracene with suitable examples. **(5)**

Q4	**a)**	Outline the general methods of preparation of amino acids.	**(5)**
	b)	Discuss the chemical reactions of amino and carboxylic acid group of amino acids.	**(5)**
Q5	**a)**	What are lipids? Differentiate between fats and oils with suitable examples.	**(5)**
	b)	Discuss Saponification and Hydrogenation of oils with suitable examples.	**(5)**
Q6		**Write short notes on:**	
	a)	Claisen condensation	**(5)**
	b)	Benzoin condensation reaction	**(5)**
Q7		Give the examples of dienes and dienophiles? Discus the mechanism of reaction and synthetic applications of Diels-Alder reaction.	**(10)**
Q8		Discus in detail classification and purification of proteins.	**(10)**

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Total Number of Pages: 02 **B.PHARM**
PH.4.3

4th Semester Back Examination 2016-17
BASIC ENGINEERING -II (UNIT OPERATIONS - II)
BRANCH: PHARMACY
Time: 3 Hours
Max Marks: 70
Q.CODE: Z420

Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.

Q1 **Answer the following questions:** **(2 x 10)**

a) What is laminar flow of fluid and what is its Reynolds number.
b) What is manometer? Write its types.
c) Define humidity and dew point.
d) What is Ostwald ripening?
e) Define crystal lattice and crystal habit.
f) Define the term Nucleation.
g) Define valve. Give examples of valves.
h) Define Centrifugation and what are its importance in Pharmacy.
i) Write advantages of glass as material of construction.
j) Define conveyer and give example of conveyers used for transportation of solid.

Q2 **a)** Write principle, construction, working and applications of orifice meter for measurement of rate of flow of fluid. **(5)**

b) Derive an equation for pressure difference for differential manometer. **(5)**

Q3 **a)** Write various approaches for achieving dehumidification. **(5)**

b) Write construction, working and uses of single stage and suction turbine pump. **(5)**

Q4 Write principle, construction, working, applications, advantages and disadvantages of belt conveyors. **(10)**

Q5 **a)** Describe the construction and working principle of agitated batch crystallizer. **(5)**

b) Describe theory and mechanism of crystallization. **(5)**

Q6 **a)** Briefly describe a note on various methods used for prevention and control of corrosion. **(5)**

b) Write a note on humidity chart. **(5)**

Q7 Write principle, construction, working, applications, advantages and disadvantages of super centrifuge. **(10)**

Q8 **Write short notes on any two:** **(5 x 2)**

a) Industrial dust hazards.
b) Gate valve.
c) Accidental records.
d) Glass as material of construction.

Registration no: | | | | | | | | | | |

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B.PHARM.
PH.4.5

4th Semester Back Examination 2016-17
BIOCHEMISTRY

BRANCH: Pharmacy
Time: 3 Hours

Max Marks: 70
QUESTION CODE: Z535
Answer Question No.1 which is compulsory and any five from the rest.

The figures in the right hand margin indicate marks.

Q1 **Answer the following:** **(2 x 10)**

a) Define Km. Write its significance.

b) Differentiate between DNA and RNA.

c) What is ketosis? Write down the normal ketone body level.

d) What is ATP-ADP cycle?

e) What is translation?

f) What is Werneke-Karsakoff syndrome?

g) What are eicosanoids? Give examples.

h) Define glycogenesis and glycogenolysis.

i) What is endpoint inhibition? Give one example.

j) Define free energy. Mention how it is related with redox potential.

Q2 Describe the reactions of Kreb's cycle. Mention the anaplerotic reaction of Kreb's cycle. **(10)**

Q3 Explain the biosynthesis of saturated fatty acids. **(10)**

Q4 Describe the HMP pathway and mention its importance. **(10)**

Q5 Define enzyme. Classify it with suitable examples. Discuss about competitive enzyme inhibition. **(10)**

Q6 **Write notes on:** **(5+5)**

a) Urea cycle b) Biochemical role of PLP

Q7 What do you mean by Xenobiotics? Explain in detail Phase-II detoxification reaction. **(10)**

Q8 **Write short notes on : (Any two)** **(5 +5)**

a) Application of Enzyme

b) Prostaglandins

c) Mechanism of transport process

d) Transcription

Registration no: | | | | | | | | | | |

Total Number of Pages: 2 **B.PHARM**
PH.4.7

4th Semester Back Examination 2016-17
COMPUTER APPLICATIONS
BRANCH: Pharmacy
Time: 3 Hours
Max Marks: 70
Q.CODE: Z674

Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.

Q1 **Answer the following questions:** **(2 x 10)**

a) Differentiate between processor and memory in computer architecture.
b) What are the major input and output devices in computer system?
c) What is Time sharing operating system? Give an example.
d) Convert binary number $(1010.101)_2$ to decimal number$(\ldots\ldots)_{10}$.
e) Differentiate between printf() and scanf() in c programming.
f) What is an identifier? Give an example.
g) What is interpreter?
h) How hub different from switch in computer network?
i) Find out the error:

```
#include<stdio.h>
Void main()
{
Int a;
Scanf("%d",a);
}
```

j) What is browser? Write the list of browsers.

Q2 **a)** What is memory mapped I/O? Explain working principle. **(5)**

b) What is ROM? Describe the classification of ROM with an example. **(5)**

Q3 **a)** Differentiate between machine language and ALP with examples. **(5)**

b) What is the role of operating system in computer system? Explain the different types of operating system with examples. **(5)**

Q4 Differentiate between debugging and testing in programming languages. Draw the flow chart of a leap year. **(10)**

Q5 **a)** Explain the application of computer in industry, education and hospital. **(5)**

b) Write a program to find the factorial of a number using c language. **(5)**

Q6 **a)** What is decision making statement in C programming? Explain different type of decision making statements with examples. **(5)**

b) What is topology in computer network? Describe different types of topology. **(5)**

Q7 **a)** What is protocol in Internet technology? Explain different application layer protocols. **(5)**

b) What is an E-mail? Describe the process of check and compose of an E-mail. **(5)**

Q8 **Short notes: Any Two** **(5 x 2)**

a) Preprocessor directives.
b) Compiler vs Interpreter
c) ISA (Industry standard Architecture)
d) Modem

Registration no:

Total Number of Pages:02 **B.PHARM**
PH.4.9

4th Semester Back Examination 2016-17
MATHEMATICS & STATISTICS
BRANCH: Pharmacy
Time: 3 Hours
Max marks: 70
Q.CODE: Z774

Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.

Q1 **Answer the following questions:** **(2 x 10)**

a) Evaluate: $\int_0^2 x^3 dx$

b) Evaluate: $\int \sqrt{(1-cos2x)}\, dx$

c) Solve: $\frac{dy}{dx} = \frac{2x}{cosy}$

d) What is exact equation?

e) Compute the degree of $x^2 + xy$.

f) Solve: $L(e^{at})$

g) What is mean deviation?

h) Show that the correlation coefficient is the geometric mean of two regression coefficients.

i) Define Chi-square test.

j) What is F test?

Q2 **a)** Evaluate: $\int \frac{1}{\sqrt{(x^2+4x+2)}} dx$ **(5)**

b) Evaluate: $\int \frac{dx}{(x+1)(x+2)(x+3)}$ **(5)**

Q3 **a)** Solve : $(x^2 - 2y^2)dx + xydy = 0$ **(5)**

b) Solve the exact equation. **(5)**

$$(x + y + 1)dx + (x - y^2 + 3)dy = 0$$

Q4 Find the median and mode of the following. **(10)**

Class	5-10	10-15	15-20	20-25	25-30
Frequency	4	6	9	3	2

Q5 **a)** Find the Laplace Transform of $acos2t$ **(5)**

b) Find the inverse transform of $\frac{2p+1}{p^2-4}$ **(5)**

Q6 **a)** Calculate the mean deviation from mean for the following data **(5)**

Class interval	2-4	4-6	6-8	8-10
Frequency	3	4	2	1

b) State and prove Bayes Theorem. **(5)**

Q7 **a)** The life time of electric bulbs for a random sample of 10 from a large consignment gave the following data. **(5)**

Item	1	2	3	4	5	6	7	8	9	10
Life in '000 hours	4.2	4.6	3.9	4.1	5.2	3.8	3.9	4.3	4.4	5.6

Can we accept the hypothesis that the average life time of bulbs in 4000 hours?**(5% value of t for nine degree of freedom=2.262)**

b) Compute mean of Poisson distribution. **(5)**

Q8

a) What is normal distribution? Highlight its important properties. **(5)**

b) A certain drug was administered to 500 people out of a total of 800 included in the sample to test its efficiency against typhoid. The results are given below: **(5)**

	Typhoid	No typhoid	
Drug	200	300	500
No Drug	280	20	300
Total	480	320	800

On the basis of these data, can it be concluded that the drug is effective in preventing typhoid.**(5% value of χ^2 for one degree of freedom=3.84)**