Registration No : | | | | | | | | | | |

Total Number of Pages : 02 **B.Pharm.**
15PH401

4th Semester Regular / Back Examination 2017-18
PHYSICAL PHARMACEUTICS- II
BRANCH : B.Pharma
Time : 3 Hours
Max Marks : 100
Q.CODE : C579

Answer Question No.1 & No. 2 which are compulsory and any four from the rest.
The figures in the right hand margin indicate marks.
Answer all parts of a question at a place.

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

a) Edmunds equation is ----------.
b) Reynolds number is ----------, the flow is turbulent. .
c) Stream scanning method is used to measure the particle --------, and unsuitable for -------materials.
d) Particle size in the range of --------micrometer can be measured by optical microscopy.
e) Excellent flow property Angle of repose is --------.
f) Relation between bulk density and tap density for porosity is ----------.
g) Plug flow can be minimized by ----------and ----------.
h) Mixing of acacia a negative colloid with gelatin positive colloid results----------.
i) Stability study of emulsion heating and cooling cycle, the temperature should be ------ and-------- degree centigrade respectively.
j) The Rheological behavior of CMC and micro-betonies having ----- ratio is more suitable when compared to individual suspending agent.

Q2 **Answer the following questions:** **(2 X 10)**

a) Write Hatch-Choate equation.
b) Differentiate between Newtonian flow and Non-Newtoniaflow.
c) What is HLB scale? Write two application of it.
d) What is glidant? Write two suitable examples of it?
e) Define fluidity and mobility according to rheology.
f) Differentiate between Flocculated and deflocculated suspension.
g) Write the relation among colloid, true solution and coarse suspension.
h) What is Bancroft's rule for preparation of emulsion?
i) Define electro-dynamic potential and kinetic potential.
j) The viscosity of benzene is 5.816 mill poise at 25°c.Its density at 25°c is 0.8702g/cc.What is the kinematic viscosity of benzene at 25°c.

Q3 **a)** Write the principle and method involved in the determination of particle size in a powder using Coulter-Counter apparatus. **(10)**
b) Describe different graphic presentations of size distribution data in a powder. **(5)**

Q4 **a)** What is specific surface of particles? Describe one method to determine it experimentally. **(10)**
b) Estimate the specific surfaces, S_W and S_V of griseofulvin IP.Particles are assumed to be spheres having d_{VS} of 3micrometer.The true density is 1.455gm/cc. **(5)**

Q5	**a)**	Explain Non-Newtonian type of flow with rheograms, mechanisms and suitable examples.	**(10)**
	b)	Write the principle and working of Ostwald viscometer.	**(5)**
Q6	**a)**	With relevant mathematical equation, give the construction, working and disadvantages of Cup and Bob viscometer.	**(10)**
	b)	Write short notes on Bulges and Spurs.	**(5)**
Q7	**a)**	Classify different types of Colloids giving their salient features and examples.	**(10)**
	b)	Describe any two methods for purification of colloids.	**(5)**
Q8	**a)**	Discuss the factors which improve the physical stability of emulsions.	**(10)**
	b)	Describe the mechanisms of action of co-solvents and surfactants in dispersion of solids in water.	**(5)**

Q9 **Write Short notes on (ANY THREE)** **(5 x 3)**

a) Identification tests of Emulsion
b) BET equation
c) Rheological properties of suspension.
d) Donnan membrane.
e) Application of colloids in pharmacy.

Registration No : | | | | | | | | | | |

Total Number of Pages : 02 **B.Pharm.**
15PH402

4th Semester Regular / Back Examination 2017-18
PHARM. ENGINEERING - II
BRANCH : B.Pharma
Time: 3 Hours
Max marks: 100
Q.CODE : C655

Answer Section 'A' which is compulsory and any Four from Section 'B'.
The figures in the right hand margin indicate marks.
Answer all parts of a question at a place.

Section-A

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

a) The flow of the fluid is said to be turbulent if Reynolds no is greater than ----------.
i) 2100 ii) 3100 iii) 4000 iv) 1100.

b) Which one of the following is a secondary refrigerant?
i) Ammonia ii) Brine iii) Ethylene iv) Diclorotetrafluoro ethane.

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

d) Urea refers to ---------- type of crystal form.
i) Hexagonal ii) Cubic iii) Tetragonal iv) Monoclinic

e) Which is use to increase the pressure energy of a liquid?
i) Valve ii) Blower iii) Fan iv) Pump.

f) Which conveyor is used for transporting heavy loads at short runs and low speeds?
i) Apron ii) Belt iii) Screw iv) Pneumatic

g) Stainless steel is an alloy of ---------- ?
i) Cr ii) Fe iii) Ni iv) Cu

h) Which is an inhibitor for corrosion of metal?
i) $CuSO_4$ ii) $MgSO_4$ iii) $FeSO_4$ iv) $ZnSO_4$.

i) Which component is used as extinguisher to suppress fire?
i) SO_2 ii) CO_2 iii) SiO_2 iv) Fe_2O_3.

j) Camphor vapour undergo ---------- process in crystal formation.
i) Crystallization ii) Precipitation iii) Sublimation iv) Super saturation

Q2 **Answer the following questions:** **(2 x 10)**

a) Define Reynolds number and write its significance.
b) What is boundary wall concept in flow of fluids?
c) What is Dew point?
d) Define Centrifugation and name two centrifugal sedimenters.
e) Write are advantages of glass as material of construction.
f) Define Industrial Dermatitis.
g) Define the term Nucleation.
h) What is Ostwald ripening?
i) Define valves and name two examples.
j) What is Humid heat?

Section B

Q3	**a)**	Write principle, construction, working and applications of Orifice meter for measurement of rate of flow of fluid.	**(10)**
	b)	Derive an equation for pressure difference for simple manometer.	**(5)**
Q4	**a)**	Define Wet and Dry bulb temperature. Write a note on Psychrometric charts and its use. Write applications of humidity in Pharmacy.	**(10)**
	b)	Describe various methods for measurement of humidity.	**(5)**
Q5	**a)**	Write principle, construction, working, applications, advantages and disadvantages of Belt conveyors.	**(10)**
	b)	Write short note on Diaphragm pump.	**(5)**
Q6	**a)**	Define crystallization. Write mechanism of crystallization. Describe the principle, construction and working of Swenson Walker crystallizer.	**(10)**
	b)	Write a short note on Caking of Crystals and its prevention.	**(5)**
Q7	**a)**	Define corrosion. Write a detail note on various methods used for prevention and control of corrosion.	**(10)**
	b)	Write a short note on Steel as a material of construction.	**(5)**
Q8	**a)**	Define industrial hazards. Name different types of Industrial hazards. Give a detail note on chemical hazards.	**(10)**
	b)	Write a note on accidental records.	**(5)**
Q9	**a)**	Write principle, construction, working, applications, advantages and disadvantages of semicontnuous centrifuge.	**(10)**
	b)	Write a short note on super centrifuge.	**(5)**

Registration No : | | | | | | | | | | |

Total Number of Pages : 02 **B.Pharm**
15PH403

4th Semester Regular / Back Examination 2017-18
BIOCHEMISTRY
BRANCH : B.Pharma
Time : 3 Hours
Max Marks : 100
Q.CODE : C759

Answer Part-A which is compulsory and any four from Part-B.
The figures in the right hand margin indicate marks.
Answer all parts of a question at a place.

Part – A (Answer all the questions)

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

a) Which test is performed to detect the presence of ketone bodies in urine?
A. Rothera's test B. Hay's test C. Gmelin's test D. Heller's test

b) Protein is a polymer of :
A. Sugars B. Phenols C. Amino acids D. Carboxylic acid

c) Malonate is a competitive inhibitor of
A. Succinate B. Fumarate C. Malate D. Lactate

d) In gycolysis, glucose is converted to glucose-6-phosphate in presence of enzyme
A. Glucokinase B. Phosphoglucomutase C. Lipase D. Enolase

e) In β–oxidation of fatty acid, the number of ATP molecule consumed are
A. 6 B. 2 C. 5 D. 4

f) Which of the following is classified as a polysaccharide?
A. Saccharin B. Starch C. Lactose D. Maltose

g) Deficiency of folic acid will cause
A. Anemia B. Rickets C. Diabetes D. Beriberi

h) Conversion of glucose to pyruvic acid is known as
A. Urea cycle B. Glycolysis C. TCA cycle D. Cori cycle

i) Which of the following vitamins has a structure similar to the steroid?
A. Vitamin D B. Vitamin B_{12} C. Vitamin A D. Vitamin K

j) Michaelis - Menten equation is used to explain the effect of substrate concentrations on :
A. Carbohydrate B. Enzyme C. Lipid D. Protein

Q2 **Answer the following questions :** **(2 x 10)**

a) Differentiate between hexokinase and glucokinase.
b) Why citric acid cycle is said to be amphibolic in nature?
c) What do you mean by isoenzymes? Give two examples of isoenzymes.
d) What is ketoacidosis? How it can be treated?
e) What is the cause of Refsum's disease?
f) What do you mean by oxidative phosphorylation?
g) What does happen in the excess intake of vitamins?
h) Explain Okazaki fragments.
i) What is Wald's visual cycle?
j) Explain about suicidal inhibition.

Part – B (Answer any four questions)

Q3	**a)**	What is citric acid cycle? Describe the reactions of citric acid cycle and with its energetics.	**(10)**
	b)	What is anaplerosis and give some examples of anaplerotic reactions of TCA cycle.	**(5)**
Q4	**a)**	Classify enzymes. Describe in detail about the mechanisms involved in enzyme reactions.	**(10)**
	b)	Define coenzyme. What are the functions of coenzymes?	**(5)**
Q5	**a)**	What are ketone bodies? Explain in detail about ketogenesis and utilization of ketone bodies.	**(10)**
	b)	What is carnitine shuttle?	**(5)**
Q6	**a)**	Describe in detail about HMP shunt with its importance.	**(10)**
	b)	What are the biochemical actions of prostaglandins?	**(5)**
Q7	**a)**	Describe in detail about Krebs-Henseleit cycle.	**(10)**
	b)	Interrelate Krebs-Henseleit cycle and Krebs cycle.	**(5)**
Q8	**a)**	Define Xenobiotics. Explain in detail about metabolism of Xenobiotics.	**(10)**
	b)	What do you mean by metastasis?	**(5)**
Q9	**a)**	Describe the chemistry, biochemical function, source and deficiency manifestations of Vitamin A.	**(10)**
	b)	Write about α-oxidation of fatty acids.	**(5)**

Registration No : | | | | | | | | | | |

Total Number of Pages : 02 **B.Pharm.**
15PH404

4th Semester Regular / Back Examination 2017-18
COMPUTER APPLICATION
BRANCH : B.Pharma
Time: 3 Hours
Max Marks: 100
Q.CODE : C881

Answer Part-A which is compulsory and any four from Part-B.
The figures in the right hand margin indicate marks.
Answer all parts of a question at a place.

Part – A (Answer all the questions)

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

a) Which of the followings is not true in case of 1st generation computers.
i) Large size ii) Generates more heat
iii) Portable iv) None

b) The base of a Octal number system is____.
i) 2 ii) 8
iii) 16 iv) 10

c) Which of the followings is a relational operator.
i) ' + ' ii) ' * '
iii) ' ! = ' iv) ' * = '

d) _____ is the 2's compliment of the binary number 10110?
i) 01001 ii) 01010
iii) 10101 iv) None

e) ' www. ' is the computer network of the type_____ .
i) WAN ii) MAN
iii) LAN iv) None

f) do…… while is the _____ statement used in java .
i) Jumping ii) Branching
iii) Looping iv) None

g) Which of the followings data type accept a decimal number?
i) int ii) double
iii) short iv) char

h) _____ type box is used to contain output statements in a Flow Chart.
i) Oval ii) Parallelogram
iii) Rectangular iv) Trapezium

i) Which of the followings is not an input device.
i) Monitor ii) Compact Disc
iii) Floppy Disc iv) Punched Card

j) _____ is/are the valid output method/s in java.
i) print() ii) println()
iii) printf() iv) All

Q2 **Answer the following questions(*Short answer type)*** **(2 x 10)**

a) Name the digital computers as per the classification on size.
b) Give any two important characteristics of an ALOGORITHM.
c) Name the slots/ports available in general in a computer.
d) Convert $(1AB)_{16}$ into decimal or binary number.
e) Convert Disc = $\sqrt{b^2 - 4ac}$ into valid java expression.
f) What for the Linux commands *ls , cd , mkdir and rm* are used ?
g) What is the difference between the data type *int and short*?
h) Name three different types of printers.
i) Name the official website of FDA and give one important use of it.
j) Write a simple java program to get the output 'HELLO' on execution.

Part – B (Answer any four questions)

Q3 **a)** Write in details about 1st generation and 2nd generation computers. **(10)**
b) Draw a neat and labeled Computer Block Diagram with data flow lines. **(5)**

Q4 **a)** Discuss about the seven layers of OSI communication protocol. **(10)**
b) Write in brief Simplex, Half-Duplex and Full-Duplex transmission. **(5)**

Q5 **a)** Write notes on flow chart and give the advantages of it. **(10)**
b) Draw a flow chart to find the Sum= 1 + 3 + 5 + 7 + …… + 99. **(5)**

Q6 **a)** Discuss in brief the data input in java program by using buffered Reader class. **(5)**
b) Write a java program to accept and display the Name, Age, Caste and Score of a student by using BufferedReader class. **(5)**
c) Write a java program to accept five numbers and display the average of the numbers. **(5)**

Q7 **a)** Write notes on if …… else and do …… while statements in java. **(10)**
b) Write a java program to find whether the given Year is a Leap year or not. **(5)**

Q8 **a)** Write the application of Internet in Pharmaceutical Education. **(10)**
b) Write a java program to find the Sum, where Sum = $1 + 2^2 + 3^2 + \ldots\ldots\ldots + 10^2$. **(5)**

Q9 **Write notes on any THREE :** **(5 x 3)**

a) Mother Board
b) RAM and ROM
c) Machine level Language
d) Multiprocessing Operating System

Registration No : | | | | | | | | | | |

Total Number of Pages : 02 **B.Pharm**
15PH405

4th Semester Regular / Back Examination 2017-18
ORGANIC CHEMISTRY- III
BRANCH : B.Pharma
Time : 3 Hours
Max Marks : 100
Q.CODE : C1100

Answer Part-A which is compulsory and any four from the Part-B.
The figures in the right hand margin indicate marks.
Answer all parts of a question at a place.

Part-A

Q1. **Answer the Followings:** **(2 x 10)**

a) Outline the methods of preparation of phenothiazine.
b) Define essential amino acids with suitable examples.
c) What happens when pyrazole reacts with concentrated sulphuric acid?
d) How dextrin is formed? Mention its important uses?
e) Define mutarotation with suitable example.
f) Define nucleosides and nucleotides with suitable examples.
g) Write the structure of D-Glucose and L-Glucose?
h) Write down the (2+2) π Diels-Alder Cycloaddition reaction.
i) Define epimer with suitable examples.
j) Outline the mechanism of reaction involve in benzoin condensation.

Q2. **Choose the correct answer :** **(2 x 10)**

(a) Fructose on reduction in presence of HI gives
  a. n-hexane
  b. D-fructose oxime
  c. D-glucose oxime
  d. None of the above

(b) Out of the following which one is different
  a. Palmitic acid
  b. Oleic acid
  c. Linoleic acid
  d. Stearic acid

(c) Out of the following which one contain a sulphur hetero atom
  a. Oxazole
  b. Phenothiazine
  c. Iso-oxazole
  d. Pyrole

(d) All the followings are Monosaccharaides except
  a. Glucose
  b. Mannose
  c. Lactose
  d. Galactose

(e) Cellulose dissolves in water.
  a. True
  b. False
  c. Dissolves in Acid
  d. None of the above

(f) Galctose occur naturally in
  a. D-form

b. L-form
c. Both D- And L- form
d. None of the above

(g) Lipids on agitation with water in presence of soap or gelatin form
a. Suspension
b. Emulsion
c. Elixir
d. Tincture

(h) Out of the following which one give more energy:
a. 1 gm. of lipid and fats
b. 2 gm. of glucose
c. 1 gm. of proteins
d. Equal energy

(i) Out of the following which one is a scleroprotein
a. Zein
b. Globulin
c. Hair
d. None of the above

(j) Which one of the following is a derived lipid:
a. Cholesterol
b. Fat
c. Waxes
d. Oils

Part-B

Q3. a) Define and classify carbohydrates with suitable examples. Write the chemical properties of glucose. **(10)**

b) Discuss the chemical composition and chemical properties of starch. **(5)**

Q4. a) Describe the structure, nomenclature, methods of preparation and chemical reactions of Benzimidazole. **(10)**

b) Write down the structure and synthesis of Pyrimidine. **(5)**

Q5. Write short note on :
(a) Reformatsky reaction and its mechanism **(5)**
(b) Nucleic acids **(5)**
(c) Beckmann rearrangement and its mechanism **(5)**

Q6. Write short note on:
(a) Pericyclic reaction **(5)**
(b) Electrocyclic reaction **(5)**
(c) Claisen rearrangement reaction **(5)**

Q7. a) Define and classify amino acids. Write the methods of preparation and chemical reactions of amino acids. **(10)**

b) Define proteins and classify proteins with suitable examples. **(5)**

Q8. a) Define and classify lipids and fats with suitable examples. Write down the chemical properties of lipids and fats. **(10)**

b) Write a short note on purification of proteins. **(5)**

Q9. Discuss the mechanism of reactions of the followings :
(a) Mannich reaction **(5)**
(b) Oppenaur oxidation **(5)**
(c) Michael reaction **(5)**

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Total Number of Pages : 02 **B.Pharm**
15PH406

4th Semester Regular / Back Examination 2017-18
MATHEMATICS & STATISTICS
BRANCH : B.Pharma
Time : 3 Hours
Max Marks : 100
Q.CODE : C991

Answer Section 'A' which is compulsory and any Four from Section 'B'.
The figures in the right hand margin indicate marks.
Answer all parts of a question at a place.

Section 'A'

Q1 **Answer all questions :** **(2 x 10)**

a) $\int_0^1 \frac{1}{1+x^2} dx =$ _____($\frac{\pi}{4}$,0,-1,$\frac{-\pi}{4}$)

b) $\int_1^2 x dx =$ _____

c) The degree of $\boldsymbol{sin\frac{x}{y}}$ is _____(0,1,2,3)

d) The roots of the equation $\boldsymbol{y'' - 3y' - 4y = 0}$ is _____

e) L{1}=_____($\frac{1}{p}, \frac{1}{p^2}, \frac{2}{p}, \frac{2}{p^2}$)

f) The Laplace Transform of $\boldsymbol{sinat}$ is _____

g) The arithmetic mean of first '10' natural numbers is_____
($\boldsymbol{3.5, 2.5, 4.5, 5.5}$)

h) In Probability, the value of p + q is_____

i) Binomial distribution has_____ parameters.

j) In Poisson distribution, mean=_____

Q2 **Answer all questions :** **(2 x 10)**

a) Evaluate : $\int \frac{x^2}{1+x^2} dx$

b) Evaluate: $\int e^x sine^x dx$

c) Solve: $x\frac{dy}{dx} = \sqrt{1-y^2}$

d) What is Integrating Factor?

e) What is Inverse Laplace Transforms?

f) Evaluate: L{$acos2t$}

g) What is median?

h) Calculate the mean of 1,3,5,7,9,11

i) If the mean of a Poisson distribution is 4, find Variance.

j) Define Normal Distribution.

Section 'B'

Q3 **a)** Evaluate : $\int \frac{x^2}{(x+1)(x-2)(x+3)} dx$ **(8)**

b) Evaluate : $\int_0^{\pi} \frac{dx}{2+cosx} dx$ **(7)**

Q4 **a)** Solve : $\frac{dy}{dx} = \frac{x+y+4}{x-y-6}$ **(8)**

b) Solve the initial value problem: **(7)**

$$\frac{dy}{dx} + 5y = 3e^x, y(0) = 1$$

Q5 **a)** Solve the equation **(8)**

$$y'' + 2y' + 2y = 2, given\ that\ y(0) = 0, y'(0) = 1$$

b) Find the inverse transform of **(7)**

$$\frac{p+7}{p^2+2p+5}$$

Q6 **a)** Compute the variance from the following data **(8)**

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) The values of the same 15 students in two subjects A & B are given below, the two numbers within the brackets denoting the ranks of the same students in A & B respectively. **(7)**

(1,10) (2,7) (3,2) (4,6) (5,4) (6,8) (7,3) (8,1) (9,11) (10,15) (11,9) (12,5) (13,14) (14,12) (15,13)

Use Spearman's formula to find the rank correlation coefficient.

Q7 **a)** Compute the variance of Poisson Distribution. **(8)**

b) What is normal distribution? Highlight its important properties. **(7)**

Q8 **a)** Evaluate: $\int \frac{2}{\sqrt{(x^2+x+1)}} dx$ **(5)**

b) Solve: $\frac{d^2y}{dx^2} - \frac{dy}{dx} - 6 = 0$ **(5)**

c) Find L($cos^2 2t$) **(5)**

Q9 **a)** Write short note on Skewness. **(5)**

b) A bag contains 7 red, 12 white and 4 green balls. What is the probability that 3 balls drawn are all white and 3 balls drawn are one of each colour? **(5)**

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

	Typhoid	No. Typhoid	Total
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)

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Total Number of Pages : 01 **B.Pharm**
PH.4.1

4th Semester Back Examination 2017-18
PHARMACEUTICS - III (PHY PH - II)
BRANCH : B.Pharma
Time : 3 Hours
Max Marks : 70
Q.CODE : C580

Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.
Answer all parts of a question at a place.

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

a) What is porosity of the power and what is its application?
b) Define the term "surface diameter and Stokes diameter.
c) What is angle of repose? Specify any two methods to improve the flow properties of granules.
d) What is "Yield value"?
e) Define Newtonian flow, give two examples.
f) What is gold number?
g) Give half life and shelf life of a zero order equation.
h) Define fluidity and kinematic viscosity.
i) What is structured? Give two examples.
j) What are chelating agents? Write its use.

Q2 **a)** Describe the derived properties of powder. **(5)**
b) Mention its importance in design a dosage form. **(5)**

Q3 **a)** What is rheology? Explain Non-Newtonian types of flow with rheograms. **(5)**
b) Describe the basic mechanism behind the Non-Newtonian flow. **(5)**

Q4 **a)** Discuss different types of Cup and Bob Viscometer. **(5)**
b) How can you determine the viscosity of Newtonian fluid? **(5)**

Q5 **a)** Give a details account of accelerated stability study. **(5)**
b) Derive an equation for determination of shelf life. **(5)**

Q6 **a)** Differentiate between flocculated and deflocculated systems. **(5)**
b) Discuss about the methods for determination of solubility. **(5)**

Q7 What are the different complexes that drugs can form? Give examples of such complexes. Write a note on the applications of drug complexes. **(10)**

Q8 **Write short answer on any TWO :** **(5 x 2)**

a) Thixotropy
b) Protective colloids
c) Specific surface
d) Zeta potential

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

PH.4.10

4th Semester Back Examination 2017-18

PHARMA CHEMISTRY - IV (ORG. CHEMISTRY- III)

BRANCH : B.Pharma

Time : 3 Hours

Max Marks : 70

Q.CODE : C1101

Answer Question No.1 which is compulsory and any five from the rest.

The figures in the right hand margin indicate marks.

Answer all parts of a question at a place.

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

a) What happens when pyridine reacts with sodamide in presence of liquid ammonia?

b) Name the products, when quinoline reacts with fuming nitric acid in presence of fuming sulphuric acid.

c) Give the structure and numbering of acridine.

d) What happens when anthracene reacts with maleic anhydride?

e) What is mutarotation?

f) Name the amino acid which does not have an asymmetric carbon.

g) Give the general structure of oils and fats.

h) Discus the mechanism of benzoin condensation reaction.

i) Define isoelectric point with examples.

j) What is Michael addition reaction?

Q2 **a)** Describe the structure and general methods of preparation of furan. **(5)**

b) Discuss the electrophilic substitution reactions of furan with suitable examples. **(5)**

Q3 **a)** Describe the molecular orbital and resonance structure of phenanthrene. Outline the methods of preparation of Phenanthrene. **(5)**

b) Outline the electrophilic substitution reactions of phenanthrene with suitable examples. **(5)**

Q4 **a)** Discuss the different general methods of preparation of amino acids. **(5)**

b) Discuss the characteristic chemical reactions of amino acids with suitable examples. **(5)**

Q5 **a)** What are lipids? Differentiate between fats and oils with suitable examples. **(5)**

b) Discuss the chemical properties of oils and fats with suitable examples. **(5)**

Q6 **a)** Discus the mechanism of reaction and synthetic applications of Diels-Alder reaction. **(5)**

b) Discuss the composition and structure of Nucleic acids. **(5)**

Q7 What are polypeptides? Discuss the different methods of purification of proteins and polypeptides. **(10)**

Q8 **Write short notes on :**

a) Claisen condensation **(5)**

b) Beckmann rearrangement reaction **(5)**

Registration No : | | | | | | | | | | |

Total Number of Pages : 01 **B.Pharm.**
PH.4.3

4th Semester Back Examination 2017-18
BASIC ENGINEERING - II (UNIT OPERATIONS - II)
BRANCH : B.Pharma
Time : 3 Hours
Max Marks : 70
Q.CODE : C656

Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.
Answer all parts of a question at a place.

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

a) What is a crystallization and name crystal habit?
b) Define centrifugation and name two centrifugal sedimenters.
c) Define humidity and dew point.
d) What is fire extinguisher and name its component.
e) Brief your idea on Reynolds number and manometer.
f) Define the term Nucleation.
g) Define pump. Give two examples of pumps.
h) Define conveyer and give two examples.
i) Write advantages of steel as material of construction.
j) Define corrosion. Give example of corrosion inhibitors.

Q2 **a)** Write principle, construction and working of Venturi meter for measurement of rate of flow of fluid. **(5)**
b) Derive an equation for pressure difference for differential manometer. **(5)**

Q3 **a)** Write a note on Psycrometric chart. **(5)**
b) Write applications of humidity in Pharmacy. **(5)**

Q4 **a)** Write the principle, construction and working applications of Screw conveyors. **(5)**
b) Discuss on advantages and disadvantages of Screw conveyors. **(5)**

Q5 **a)** Describe the Principle, construction and working of Krystal crystallizer. **(5)**
b) Describe solubility curve of crystallization. **(5)**

Q6 **a)** Briefly describe a note on various methods used for prevention and control of corrosion. **(5)**
b) Write a short note on glass as a material of construction. **(5)**

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

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

a) Industrial chemical hazards.
b) Diaphragm valve.
c) Industrial dermatitis.
d) Vacuum Crystallizer.

Registration No : | | | | | | | | | | |

Total Number of Pages : 01 **B.Pharm**
PH.4.5

4th Semester Back Examination 2017-18
BIOCHEMISTRY
BRANCH : B.Pharma
Time : 3 Hours
Max Marks : 70
Q.CODE : C760

Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.
Answer all parts of a question at a place.

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

a) What is glycogenesis ?
b) Give the chemical structures of glycine and phenylalanine.
c) What is ω –oxidation of fatty acids?
d) Define free energy.
e) Write the names of ketone bodies.
f) What do you mean by eicosanoids?
g) What is allosteric inhibition?
h) Explain isoenzymes with two examples.
i) Write down about biological significance of ATP.
j) Differentiate between DNA and RNA.

Q2 **a)** Write about primary structure of proteins. **(5)**
b) Describe briefly about Embden–Meyerhof–Parnas pathway. **(5)**

Q3 **a)** Write about factors affecting enzyme reaction. **(5)**
b) Discuss about noncompetitive enzyme inhibition. **(5)**

Q4 **a)** Describe in brief about β–oxidation of fatty acids. **(5)**
b) How ketone bodies are utilized in our body? **(5)**

Q5 **a)** Define Xenobiotics. Explain detoxification mechanisms. **(5)**
b) Mention about significance of HMP shunt. **(5)**

Q6 **a)** What do you mean by metastasis? **(5)**
b) Give outline about mitosis. **(5)**

Q7 Describe in detail about urea cycle with its importance in protein metabolism. **(10)**

Q8 **Write short answer on any TWO :** **(5 x 2)**

a) Glycogenolysis.
b) DNA replication.
c) Mechanisms of membrane transport system
d) Co-enzymes

Registration No : | | | | | | | | | | |

Total Number of Page : 01 **B.Pharm**
PH.4.7

4th Semester Back Examination 2017-18
COMPUTER APPLICATIONS
BRANCH : B.Pharma
Time : 3 Hours
Max Marks : 70
Q.CODE : C882

Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.
Answer all parts of a question at a place.

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

a) Name two popular first generation computers.
b) Name two types of storage devices used in 2nd/3rd generation computers.
c) Convert (110100) binary number to Decimal and Hexadecimal number.
d) Name two slots/ports available with the computer mother board?
e) Write mathematical operators used in C –programs.
f) Express D = $\sqrt{b^2 - 4ac}$ into correct 'C' expression.
g) Write about the use of DOS command DIR.
h) What is WAN? Give examples.
i) Name two websites used for drug related information.
j) Write a simple 'c' program using *printf* statement.

Q2 Write notes on the followings : **(5+5)**
(i) First generation computers.
(ii) Computer Block Diagram

Q3 Write about the following DOS commands with options : **(10)**
CD, MD, DIR and PROMPT.

Q4 Write notes on computer network topologies. **(10)**

Q5 Write about various types of boxes/figures used to draw flow chart and draw the Flow Chart to find the Sum = 1+3+5+…….+49. **(10)**

Q6 Give the syntax, use and example of 'C' statements **(5+5)**
If….. and do…….while.

Q7 Write notes on (i) Operating System (ii) Machine Level Language **(10)**

Q8 Write about the application of computers in Hospitals. **(10)**

Registration No : | | | | | | | | | | |

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

4th Semester Back Examination 2017-18
MATHEMATICS AND STATISTICS
BRANCH : B.Pharma
Time : 3 Hours
Max Marks: 70
Q.CODE : C992

Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.
Answer all parts of a question at a place.

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

a) Evaluate: $\int_a^b e^x dx$

b) Evaluate: $\int e^x cose^x dx$

c) Solve: $\frac{dx}{\sqrt{1-x^2}} + \frac{dy}{\sqrt{1-y^2}} = 0$

d) What is homogeneous equation?

e) Evaluate : $L(t^5$+cos2t)

f) Solve : $L(t)$

g) What is mode?

h) Find the median of 3, 5,1,9, 2,12

i) Write two properties of binomial distribution.

j) If the mean of a Poisson distribution is 4, find SD.

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

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

Q3 **a)** Solve :$x^2 ydx - (x^3 + y^3)dy = 0$ **(5)**

b) Find the general solution:$\frac{dy}{dx} + \frac{1}{x}y = 3x$ **(5)**

Q4 Find the Mean 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 $sin^2 2t$ **(5)**

b) Find the inverse transform of $\frac{2p+1}{p^2-9}$ **(5)**

Q6 **a)** Compute mean of Binomial distribution **(5)**

b) Write notes on Students t-distribution. **(5)**

Q7 **a)** Evaluate: $\int \frac{4e^{x}+6e^{-x}}{9e^{x}-4e^{-x}}\,dx$ **(5)**

b) What is Laplace Transform? **(5)**

Q8 **a)** Fit a straight line: **(5)**

X :	1	2	3	4	6	8
Y :	2.4	3	3.6	4	5	6

b) In a certain sample of 2000 families, 1400 families are consumers of tea. Out of 1800 Hindu families, 1236 families consume tea. Use χ^2 test and state whether there is any significant difference between consumption of tea among Hindu and non-Hindu families. **(5)**

(5% value of χ^2 for one degree of freedom=3.84)

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