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 : 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 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 $2^{nd}/3^{rd}$ 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   **(10)**
   the Flow Chart to find the Sum = 1+3+5+…….+49.

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
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 $sin\frac{x}{y}$ is _____ (0,1,2,3)

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

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

f) The Laplace Transform of $sinat$ is _____

g) The arithmetic mean of first '10' natural numbers is_____

$(3.5, 2.5, 4.5, 5.5)$

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 (7)
two numbers within the brackets denoting the ranks of the same students in A &
B respectively.
(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 (5)
balls drawn are all white and 3 balls drawn are one of each colour?
c) A certain drug was administered to 500 people out of a total of 800 included in (5)
the sample to test its efficacy against typhoid. The results are given below:

	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)

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)**

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.