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B.PHARM
PH 4.1

4th Semester Regular / Back Examination 2015-16

PHARMACEUTICS-III

(Physical Pharmacy -II)

QUESTION CODE: W388

Time: 3 Hours

Max Marks: 70

**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 followings: **(2 x 10)**
- a) Define specific surface. Write its mathematical expression.
 - b) Write and explain the equation for ideal solubility.
 - c) What is kinematic viscosity? Write its unit.
 - d) What is structured vehicle? Give two examples.
 - e) Define zeta potential; write its application in disperse system.
 - f) What is gold number, give two examples of protective colloids?
 - g) What are chelating agents? Write its use.
 - h) Differentiate between zero order and first order rate of reaction.
 - i) What do you mean by wetting of particles?
 - j) Define non-Newtonian flow, give two examples.
- Q2** Discuss the methods of particle size determination with their merits and demerits. **(10)**
- Q3** Define thixotropy and depict it with various curves with mechanism of flow behaviour. **(10)**
- Q4** Differentiate between flocculated and deflocculated systems. Discuss briefly about rheological properties of emulsion. **(5+5)**
- Q5** Give a detail account of accelerated stability studies. Derive an equation for determination of shelf-life. **(5+5)**

Q6 Write notes on: **(5 X 2)**

- a) Solubility and derive equation for expression of solubility.
- b) Colloids

Q7 Discuss briefly about pharmaceutical application of complexes. Exemplify at least two methods of preparation of complexes. **(5+5)**

Q8 Write short notes on :- **(5 X 2)**

- a) Derived properties of powders.
- b) Discuss about the methods for determination of solubility.

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B.Pharm
PH.4.3

4th Semester Regular / Back Examination 2015-16

BASIC ENGINEERING - II

BRANCH: PHARMACY

Time: 3 Hours

Max Marks: 70

Q.CODE: W467

**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)**

- Define Reynolds number and write its significance.
- Differentiate between laminar and turbulent flow of fluids.
- Define relative humidity. How it is differ from Humidity.
- Define the term Nucleation.
- Differentiate between reciprocating and centrifugal pumps.
- Write the applications of belt conveyer.
- Write the applications of Centrifugation process in Pharmacy.
- Define the term Dew point.
- Write the significance of solubility curve.
- What do you mean by Industrial Dermatitis?

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

b) Describe in detail the Humidity chart and write its utility. **(5)**

Q3 a) Describe the principle, construction and applications of Swenson Walker crystallizer. **(5)**

b) Write the applications of crystallization process in Pharmacy. **(5)**

Q4 a) Define centrifugation. Write theory of centrifugation and narrate equation for centrifugal effect. **(5)**

b) Write principle, working, applications and advantages of semi-continuous centrifuge. **(5)**

Q5 a) Describe the mechanism and various approaches used for dehumidification. **(5)**

b) Briefly describe various methods used for prevention and control of corrosion. **(5)**

- Q6** a) Describe Mier's supersaturation theory and write its limitations. (5)
b) Explain the construction, working and uses of globe valves. (5)
- Q7** Define and classify conveyors. Write principle, construction, working, applications, advantages and disadvantages of belt conveyors. (10)
- Q8** Write short notes on any two: (5 x 2)
a) Stainless steel as a material of construction.
b) Diaphragm pump.
c) Accidental records.
d) Industrial chemical hazards.

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B.Pharm
PH.4.5

4th Semester Regular / Back Examination 2015-16

BIOCHEMISTRY

BRANCH: Pharmacy

Time: 3 Hours

Max Marks: 70

Q.CODE: W503

**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)**

- How Glycerol serves as a Gluconeogenic substrate?
- Give any two examples of non-competitive inhibitor of enzyme.
- Mention the irreversible reactions of glycolysis.
- Define Refsum's disease?
- Give your concept on Glutamine transport system?
- What is Phospholipid? Give two examples.
- Define Prostaglandins? Give two examples.
- What are co-enzymes? Give two example of sulphur containing co-enzyme.
- What are essential Fatty Acids? Give two examples.
- Detoxification of Cyanide Ions.

Q2 Write about:

- Glycogenolysis **(5)**
- Redox Potential **(5)**

Q3 What is E.M. pathway? Explain its reaction pathway in anaerobic condition along with the energetics. **(10)**

- Describe details on Urea Cycle with the components **(5)**
- Give your views on Prostaglandins. **(5)**

Q5 Define and Classify Enzymes. Explain any five factors that influence rate of enzyme Catalyzed reactions. **(10)**

Q6 Write about:

- β -oxidation of fatty acids. **(5)**
- Essential Amino acids. **(5)**

Q7 Write down the followings with proper justification

- Transport Processes across the cell membrane. **(5)**
- Phase-II detoxification reactions. **(5)**

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

- Ketogenesis.
- Anaplerosis
- Transamination.
- Competitive inhibition of enzyme

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B.Pharm
PH.4.7

4th Semester Regular / Back Examination 2015-16
COMPUTER APPLICATIONS

BRANCH: Pharmacy

Time: 3 Hours

Max Marks: 70

Q.CODE: W560

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)**

- Write four important drawbacks of 1st generation computers.
- Draw the computer Block Diagram.
- Convert (1101101011101) binary number to Octal and Hexadecimal
- Translate $\text{Root1} = \frac{-b + \sqrt{b^2 - 4ac}}{2a}$ into correct C- expression.
- Write two relational and two logical operators used in C – programs.
- Write in brief about Ink-Jet printer.
- Name the DOS command used to change the file attribute, also
- Name two preprocessor directives used in 'C'.
- Name the websites for regulatory bodies of any two states from USA, UK, CANADA, AUSTRALIA and SOUTH AFRICA.
- Give the output of the C –program given below.

```
#include<stdio.h>
#include<conio.h>
int x,y;
void main()
{
    Y=7;
    Y*=2;
    Printf(" %d \n",- ~y);
    Printf(" %d \n",y++);
    Printf(" %d \n",y++);
    Printf(" %d \n",y);
    getch();
}
```

- Q2** Write short notes on
- a)** Computer Mother Board. **(5)**
 - b)** 2nd generation computers. **(5)**
- Q3** **a)** Write short notes on Flow Chart. **(5)**
- b)** Draw a flow chart to find the sum where **(5)**
- $$\text{SUM} = 1^2 + 2^2 + 3^2 + \dots + 10^2.$$
- Q4** Write in brief about computer Languages (Machine Level, **(10)**
Assembly Level and High Level language).
- Q5** Write about control/looping statements 'if....else' and 'for' used in **(5+5)**
C-program. Also give example in each case.
- Q6** Write about any two DOS commands EDIT, XCOPY, DIR & PROMPT **(10)**
with options.
- Q7** Write about the formatted input/output statements scanf & printf **(10)**
and write a C-program using these statements.
- Q8** Write the application of computers in Hospital Pharmacy and **(10)**
administration.

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B.PHARM
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4th Semester Regular / Back Examination 2015-16
MATHEMATICS & STATISTICS

BRANCH: B.PHARM

Time: 3 Hours

Max Marks: 70

Q.CODE: W571

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: **(2x10)**

- a) Evaluate : $\int_0^{1/2} \frac{1}{\sqrt{1-x^2}} dx$
- b) Solve $\frac{dy}{1+y^2} = \frac{dx}{1+x^2}$
- c) Find $L(t^5 + \cos 2t)$
- d) What is Laplace Transform?
- e) Define mode
- f) Find the standard deviation of the following values
- | | | | | |
|---|---|---|---|---|
| 1 | 3 | 5 | 7 | 8 |
|---|---|---|---|---|
- g) What is scatter diagram?
- h) Two cards are drawn from a pack of cards at random. What is the probability that it will be a diamond & a heart?
- i) Define Poisson distribution.
- j) If mean of a Poisson distribution is 4, find the standard deviation.

Q2 a) Evaluate: $\int \frac{dx}{(x+1)(x+2)(x+3)}$ **(5)**

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

Q3 a) Solve $\frac{dy}{dx} = \frac{x-y+1}{x+y-3}$ **(5)**

b) Solve $(\cos x + y \sin x)dx = \cos x dy$ **(5)**

Q4 Compute the mean, median and mode of the following data **(10)**

Marks	10-25	25-40	40-55	55-70	70-85	85-100
Frequency	6	20	44	26	3	1

Q5 a) Calculate the standard deviation for the following data **(5)**

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

b) Find the Karl Pearson's coefficient of skewness from the data given below **(5)**

Size	3	4	5	6	7	8	9	10
Frequency	7	10	14	35	102	136	43	8

Q6 a) Find the Inverse Transform of the following **(5)**

$$\frac{2p+1}{p^2-4}$$

b) If $f(t) = \sum_{i=1}^n c_i f_i(t)$, where c_i are constants then **(5)**

prove that $L\{f(t)\} = \sum_{i=1}^n c_i L\{f_i(t)\}$

Q7 a) Compute the variance of Poisson distribution.

b) The screws produced by a certain machine were checked by examining samples of 12. The following table shows the distribution of 128 samples according to the number of defective items they contained.

No. of defectives in a sample of 12	0	1	2	3	4	5	6	7
No. of Samples	7	6	19	35	30	23	7	1

Fit a binomial distribution and find the expected frequencies if the chance of screw being defective is $\frac{1}{2}$. Find the mean & variance of the fitted distribution.

Q8 a) Write notes on F-test. **(5)**

b) In an ant malarial campaign in a certain area, quinine was administered to 812 persons out of a total population of 3248. The number of fever cases is shown below. **(5)**

Treatment	Fever	No fever	Total
Quinine	20	792	812
No Quinine	220	2216	2436
Total	240	3008	3248

Discuss the usefulness of quinine in checking malaria.
($X^2_{0.05}$ for one degree of freedom = 3.84)

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B.PHARM
PH.4.10

4th Semester Regular / Back Examination 2015-16
PHARMACEUTICAL CHEMISTRY- IV
(ORGANIC CHEMISTRY-III)

Branch: Pharmacy

Q. CODE: W421

Time: 3 Hours

Max Marks: 70

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 followings: **(2 x 10)**

- Give the structure and numbering of Isoquinoline.
- Why fats are solids and oils are liquid?
- What do you mean by mutarotation?
- Distinguish between RNA and DNA.
- Define epimer with examples.
- What do you mean by saponification value? Mention its importance.
- Write the principle involved in Benzoin condensation.
- Write down the Koop synthesis of amino acids.
- Give any two methods of preparation of Furan.
- What do you mean by Zwitterion? Give an example.

Q2 a) Define and classify carbohydrates with suitable examples. **(3)**

b) Write down the chemistry of any aldohexose. **(7)**

Q3 Discuss the various methods of preparation and chemical reaction of Pyridine. **(10)**

Q4 Write short notes on:

a) Paal-Knorr synthesis **(5)**

b) Nucleic acids **(5)**

Q5 What are amino acids? Classify them with suitable examples. Write the methods of preparation and chemical reactions of amino acids. **(10)**

Q6 Write notes on:(Any Two) **(5x2)**

- Preparations of Quinoline
- Preparations of Phenanthrene
- Michael addition and its application

Q7 Define lipids. Classify it with suitable examples. Write down about various chemical reactions of lipids. **(5+5)**

Q8 Define the followings with proper inputs

- a)** Fischer Indole synthesis **3**
- b)** Reformatsky reactions **2**
- c)** Fermentation **2**
- d)** Beckmann Rearrangement **3**