



UNIVERSITY OF THE PUNJAB

First Prof. 2nd A/2016
Examination:- Doctor of Pharmacy (Pharm.D.)

Roll No.

Subject: Pharmaceutical Chemistry-I (Organic)
PAPER: 1 (Old & New Course)

TIME ALLOWED: 3 hrs.
MAX. MARKS: 100

NOTE: Attempt any FIVE questions. All questions carry equal marks.

- Q. No 1 Describe methods for the formation and detection of free radicals. 20
- Q. No 2 a) Describe Geometrical Isomerism with examples. 10
b) What is Racemic Mixture? Give methods for resolution of racemic mixture. 10
- Q. No 3 Write note on the following: (10, 10)
a) Metal Hydride Reduction b) Perkin Reaction
- Q. No 4 Explain the following reactions: (10, 10)
a) Pinacol Pinacolone rearrangement b) Wittig Reaction
- Q. No 5 Write note on: (10, 10)
a) Hydrogen bonding b) Hyperconjugation
- Q. No 6 Write down the methods of preparation, properties and applications of the following Heterocyclic Compounds: (10, 10)
a) Pyridine b) Indol
- Q. No 7 Describe the methods of preparation of Esters and Aldehydes. 20



UNIVERSITY OF THE PUNJAB

First Prof. 2nd A/2016
Examination:- Doctor of Pharmacy (Pharm.D.)

Roll No.

Subject: Pharmaceutical Chemistry-II (Biochemistry)
Pharmaceutical Biochemistry
PAPER: 2 (Old & New Course)

TIME ALLOWED: 3 hrs.
MAX. MARKS: 100

NOTE: Attempt any FIVE questions. All questions carry equal marks.

Q.No.1: 10+10

- a) Define and classify hormones
- b) Write the chemistry, physiological functions, regulations and metabolism of growth hormone

Q.No.2: 20

Write the introduction, chemistry, functions, regulations and disorders of thyroid hormone

Q.No.3: 10+10

- a) What is nucleic acid, write the five differences between DNA and RNA, also differentiate between nucleotides and nucleosides
- b) Write the process of DNA replication

Q.No.4: 10+10

Write note on followings

- a) Recombinant DNA technology
- b) Bioenergetics

Q.No.5: 10+10

- a) What are allosteric enzymes?
- b) Describe the different factors affecting enzyme activity

Q.No.6: 10+10

- a) Classify carbohydrates in detail and describe their pharmaceutical and biological importance
- b) Describe the types of glycolysis and biochemical steps involved in breakdown of glucose in cytoplasm

Q.No.7: 10+10

Write a note on following

- a) Vitamin K
- b) Porphyrins



UNIVERSITY OF THE PUNJAB

First Prof. 2nd A/2016

Examination:- Doctor of Pharmacy (Pharm.D.)

Roll No.

Subject: Pharmaceutics-I (Physical Pharmacy)

TIME ALLOWED: 3 hrs.

PAPER: 3 (Old & New Course)

MAX. MARKS: 100

NOTE: Attempt any FIVE questions. All questions carry equal marks.

- Q.1. (a) What are solutions? Describe properties of an ideal solution (10)
(b) Explain briefly surface active agents What are their applications in pharmacy. (10)
- Q.2. (a) What are the ideal properties of a suspension? Explain instability in suspensions. (10)
(b) Explain different theories of emulsifications? (10)
- Q.3. (a) Differentiate different types of colloids. (08)
(b) Explain purification and applications of colloids. (12)
- Q.4. (a) Describe the principle, process and applications of fractional distillation? (15)
(b) What are different types of crystals based on their properties? (5)
- Q.5. (a) What is rheology? How the rheology is important in Pharmacy? (10)
(b). Discuss in detail the rheology of Non Newtonian systems. (10)
- Q.6. (a) Define micromeretics. Describe in detail different methods to determine the particle size. (10)
(b) Define Sublimation. Briefly explain the process by citing phase diagram. (10)
- Q.7 Write a note on the following (5 each)
- (a). Levigation
 - (b). Micellization
 - (c). Buffer
 - (d). Industrial Pharmacy



UNIVERSITY OF THE PUNJAB

First Prof. 2nd A/2016

Examination:- Doctor of Pharmacy (Pharm.D.)

Roll No.

Subject: Physiology & Histology / Physiology
PAPER: 4 (Old & New Course)

TIME ALLOWED: 3 hrs.
MAX. MARKS: 100

NOTE: Attempt any FIVE questions. All questions carry equal marks.

- Q1. Classify nervous system? Describe the functions of cerebrum and cerebellum? 20
- Q2. Define GFR? Discuss its mechanism of regulation? 20
- Q3. Define immunity? Discuss in detail different types of immunity? 20
- Q4. Describe the structure and functions of skin? 20
- Q5. Define blood pressure? Discuss in detail the mechanisms of regulation of blood pressure? 20
- Q6. A) Describe the physiology of pancreas and discuss in detail exocrine secretion of pancreas? 10
- B) Discuss the movements of the small intestine involved in the digestion? 10
- Q7. Write note on following
- A) Dilute and concentrated urine 10
- B) Reflex arch 10



UNIVERSITY OF THE PUNJAB

First Prof. 2nd A/2016
Examination:- Doctor of Pharmacy (Pharm.D.)

Roll No.

Subject: Anatomy/ Anatomy & Histology
PAPER: 5(Old & New Course)

TIME ALLOWED: 3 hrs.
MAX. MARKS: 50

NOTE: Attempt any FIVE questions. All questions carry equal marks.

- Q.1 (a) Describe Cuboidal epithelium. Its histological diagram. Localization of Cuboidal epithelium in body. 05
(b) Write a note on organelles of Cell. 05
- Q.2 (a) Draw and label internal Female Reproductive Organs 05
(b) Write a note on ligaments of Ovary 05
- Q.3 Draw and label anatomy of heart and major vessels of Cardio Vascular System 10
- Q.4 (a) Write a note on Thyroid gland 05
(b) Write a note on Adrenal gland. 05
- Q.5 Draw and label Circle Of Willis. 10
- Q.6 (a) Draw and label regions of Abdomen 05
(b) write a note on Biliary system 05
- Q.7 Write a note on Urinary system 10



UNIVERSITY OF THE PUNJAB

First Prof. 2nd A/2016

Examination:- Doctor of Pharmacy (Pharm.D.)

Roll No.

Subject: English Compulsory
PAPER: 6 (New Course)

TIME ALLOWED: 3 hrs.
MAX. MARKS: 100

NOTE: Attempt ALL the given questions.

Q.1 Read the following passage and answers the questions. (15)

A robot is a machine. But it is not just any machine. It is a special kind of machine. It is a machine that moves. It follows instructions. The instructions come from a computer. Because it is a machine, it does not make mistakes. And it does not get tired. And it never complains. Unless you tell it to! Robots are all around us. Some robots are used to make things. For example, robots can help make cars. Some robots are used to explore dangerous places. For example, robots can help explore volcanoes. Some robots are used to clean things. These robots can help vacuum your house. Some robots can even recognize words. They can be used to help answer telephone calls. Some robots look like humans. But most robots do not. Most robots just look like machines. Long ago, people imagined robots. Over 2,000 years ago, a famous poet imagined robots. The poet's name was Homer. His robots were made of gold. They cleaned things and they made things. But they were not real. They were imaginary. Nobody was able to make a real robot. The first real robot was made in 1961. It was called Unimate. It was used to help make cars. It looked like a giant arm. In the future, we will have even more robots. They will do things that we can't do. Or they will do things that we don't want to do. Or they will do things that are too dangerous for us. Robots will help us fight fires. They will help us fight wars. They will help us fight sickness. They will help us discover things. They will help make life better.

1) As used in paragraph 1, we can understand that something special is NOT

- A. normal
- B. expensive
- C. perfect
- D. tired

2) According to the author, robots may be used to

- I. make cars
- II. explore volcanoes
- III. answer telephone calls

- A. I only
- B. I and II only
- C. II and III only
- D. I, II, and III

3) What is the main purpose of paragraph 2?

- A. to show how easy it is to make a robot
- B. to tell what a robot is
- C. to describe the things a robot can do
- D. to explain the difference between a robot and a machine

4) According to the passage, when was the first real robot made?

- A. 1961
- B. 1900
- C. 2003

PTO

D. 2000 years ago

5) Using the information in the passage as a guide, which of these gives the best use of a robot?

A. to help make a sandwich

B. to help tie shoes

C. to help read a book

D. to help explore Mars

Q2. Write an essay on the following topic. (15)

A) The Place of English in Pakistan B) The Importance of Scientific Education

Q3. What is paragraph writing according to you? (10)

Q4. Write a letter on the given topic. (10)

Write a letter to your father and inform him about hostel and university environment.

Q5. Speed reading is step ahead of reading skill, how? (10)

Q6. Prepare sample of CV. (10)

Q7. What is skimming according to you? (10)

Q8. What is inference according to you? (10)

Q9. Write a dialogue on the given situation. (10)

A) Dialogue between two women about doing shopping

B) Dialogue between two school friends meeting after years



UNIVERSITY OF THE PUNJAB

Second Prof. 2nd A/2016

Examination: Doctor of Pharmacy (Pharm.D.)

Roll No.

Subject: Pharmaceutics-II (Pharmaceutical Preparations)

Pharmaceutics-II (Dosage Forms Science)

PAPER: 1 (Old & New Course)

TIME ALLOWED: 3 hrs.

MAX. MARKS: 100

NOTE: Attempt any FIVE questions. All questions carry equal marks.

Q.1(a) Define the injections. Give the detail of official types of injections. (10)

(b) Differentiate between Collodions and Poulitice (10)

Q.2 Write not on

(a) Emulsifying and suspending agents (07)

(b) Enemas & Douches (06)

(c) Tinctures and spirits (07)

Q.3 (a) Define the suppositories Discuss their medical applications and advantages in Pharmacy. (10)

(b) What should be the characteristics of good suppositories base. Also discuss the methods of suppositories preparation. (10)

Q.4 (a) Define per cutaneous absorption and also discuss various factors affecting the transdermal drug delivery (12)

(b) Describe the characteristics of drugs suitable for transdermal drug delivery (08)

Q.5 (a) What are the methods of preparation of tablets. Explain wet granulation method in detail. (12)

(b) Differentiate between emulsion and suspension. Also discuss their application in Pharmacy. (8)

Q.6 (a) Define dosage form with example. . What are the benefits of making dosage form of drug compounds. (10)

(b) Write note on nasal and otic preparations. (10)

Q.7. (a) How the elixirs are prepared (5)

(b) write a brief note on aerosols (8)

(c) what are oral hygiene products (7)



UNIVERSITY OF THE PUNJAB

Second Prof. 2nd A/2016

Examination: Doctor of Pharmacy (Pharm.D.)

Roll No.

Subject: Pharmacology & Therapeutics-I
PAPER: 2 (Old & New Course)

TIME ALLOWED: 3 hrs.
MAX. MARKS: 100

NOTE: Attempt any FIVE questions. All questions carry equal marks.

- Q. # 1 Describe biotransformation of drugs and discuss phase I and phase II reactions. 20
- Q. # 2 Describe main classes of receptors and discuss ligand-gated ion channels thoroughly. 20
- Q. # 3 Classify β -adrenergic blockers. Discuss mechanism of action, therapeutic uses, side effects and contraindications of Propranolol. 20
- Q. # 4 Classify muscarinic receptor agonists. Describe mechanism of action therapeutic uses and adverse effects of these agents. 20
- Q. # 5 Define autacoids ? Give in detail the effects of histamine and antihistamine on different organs. 20
- Q. # 6 Classify anti-ulcer drugs and enumerate detailed pharmacology of these drugs. 20
- Q. # 7 Write short notes on:
- a. Prazosin 10
- b. Digoxin 10



UNIVERSITY OF THE PUNJAB

Second Prof. 2nd A/2016
Examination: Doctor of Pharmacy (Pharm.D.)

Roll No.

Subject: Pharmacognosy-I
PAPER: 3 (Old & New Course)

TIME ALLOWED: 3 hrs.
MAX. MARKS: 100

NOTE: Attempt any FIVE questions. All questions carry equal marks.

- Q-No.1. (a) What are the different factors causing deterioration of crude drugs? 10+10
(b) What are different measures taken for the preservation of crude drugs?
- Q-No.2. (a) Define Allergy and allergens. Discuss in detail contactant allergens. 10+10
(b) Discuss mechanism of immediate type of allergy.
- Q-No.3. (a) What are Proteolytic enzymes? Discuss in detail pepsin and also give its method of preparation. 10+10
(b) Given salient features of enzyme classification Commission on enzymes.
- Q-No.4. (a) What are pesticides? Classify pesticides. 10+10
(b) Write a short note on plant growth inhibitors.
- Q-No.5. (a) Describe the mechanical methods of pest control. 10+10
(b) Describe Pharmacognostic features of Catharanthus and Opium.
- Q-No.6. Describe in details the crude drugs belong to Umbelliferae family. 20
- Q-No.7. Explain with examples physical and chemical evaluation of crude drugs. 20



UNIVERSITY OF THE PUNJAB

Second Prof. 2nd A/2016

Examination: Doctor of Pharmacy (Pharm.D.)

Roll No.

Subject: Pharmaceutical Microbiology

Pharmaceutics-III (Pharmaceutical Microbiology & Immunology)

TIME ALLOWED: 3 hrs.

MAX. MARKS: 100

PAPER: 4 (Old & New Course)

Instructions: Attempt any FIVE questions. Question No.1 is COMPULSORY. Illustrate your answer with Diagrams and Examples where necessary. All questions carry equal marks.

- Q. No. 1 Define the following terms: 05
- (A) 1. Resolution
2. Microbiology
3. Acute disease
4. Pandemic disease
5. Syndrome
- (B) Multiple Choice Questions (MCQs) 08
- The nucleic acid of a virus is
 - DNA only
 - RNA only
 - either DNA or RNA
 - Allergy to sea food and eggs etc is an example of hypersensitivity
 - Type I
 - Type II
 - Type IV
 - Which of the following is considered as a greenhouse gas
 - CH₄
 - N₂O
 - Both a & b
 - Light chains and heavy chains are joined by a
 - covalent bond
 - hydrogen bond
 - disulphide bond
 - Fc region is involved in
 - Cell surface receptor binding
 - Complement activation
 - Both a & b
 - The most effective Ig is
 - Ig G
 - Ig M
 - Ig A
 - Small chemical groups on the antigen molecule that can react with antibody is
 - Epitope
 - isotope
 - Allotope

P.T.O.

- 8 Which of the following immune mechanism is responsible for protecting us from diseases of other species?
- Active immunity
 - Innate immunity
 - adaptive immunity

(C) Fill in the following statements

07

- Robert Hook published his major work in 1665 called _____.
- _____ is an infectious disease spread by an altered chemical quality of the atmosphere.
- _____ is an infection that passes from one thing to another.
- Germ theory of disease was suggested by _____.
- A visible mass of microorganisms usually of a single type is called _____.
- _____ is a partial antigen that complexes to carrier proteins or polysaccharides to form a complete antigen.
- _____ is an infectious particle composed of nucleic acid and protein that replicates within living cells.

Question No. 2	Define antibodies and discuss its structures, types and antigen-antibody interactions.	20
Question No. 3	Write note on a) Phagocytosis b) Golden age of microbiology	20
Question No. 4	a) Discuss the different components of bacterial structure with the help of diagram. b) Write a note on Rabies.	10 10
Question No.5	Discuss Serological reactions in detail.	20
Question No. 6	a) Define Disease and discuss development of disease. b) Define Resistance and discuss non-specific Resistance in detail.	10 10
Question No. 7	Define humoral immunity and discuss in detail.	20



UNIVERSITY OF THE PUNJAB

Second Prof. 2nd A/2016
Examination: Doctor of Pharmacy (Pharm.D.)

Roll No.

Subject: Pakistan Studies and Islamiyat (Comp.)
PAPER: 5 (Old & New Course)

TIME ALLOWED: 3 hrs.
MAX. MARKS: 100

USE SEPARATE ANSWER BOOK FOR EACH PART

Part I - Pakistan

For this portion Time Allowed is 1 hr. and Max. Marks 40.

NOTE: The candidates who attempt their questions keeping in view Allama Iqbal's Poetry will be given special weightage. Attempt any TWO questions. All questions carry equal marks.

نوٹ: سلیبس میں شامل علامہ اقبالؒ کے اشعار کی روشنی میں جواب دینے والے امیدواروں کو ترجیحی نمبر دیے جائیں گے۔ کوئی سے دو سوال حل کریں۔ سب سوالوں کے نمبر یکساں ہیں۔

Q.1 Highlight the socio-religious services rendered by Hazrat Mujaddid Alf-e-Sani (20)

(20) حضرت مجدد الف ثانیؒ کی دینی و سماجی خدمات پر روشنی ڈالیں۔

Q.2 What do you know about the early problems of Pakistan? (20)

(20) پاکستان کے ابتدائی مسائل کے بارے میں آپ کیا جانتے ہیں؟

Q.3 Narrate the Islamic Clauses of the 1973 Constitution. (20)

(20) 1973ء کے آئین کی اسلامی دفعات تحریر کریں۔

Q.4 Narrate the population problems of Pakistan. (20)

(20) پاکستان کے آبادی کے مسائل کا جائزہ لیں۔

Part II - Islamiyat

For this portion Time Allowed is 2 hrs. and Max. Marks 60.

(For All Muslim Candidates)

NOTE: Attempt the following questions. Question # 5 is compulsory.

Q. 1 Translate and explain any two of the following Quranic Verses.

(10+10)

سوال نمبر 1 ﴿ درج ذیل قرآنی آیات میں سے کسی دو کا ترجمہ و تشریح کریں۔

(الف) إِنَّ اللَّهَ سَمِيعٌ عَلِيمٌ

(ب) إِنَّ فِي ذَلِكَ لَآيَةً لِّقَوْمٍ يَتَذَكَّرُونَ

(ج) ذَلِكَ الْكِتَابُ لَا رَيْبَ فِيهِ هُدًى لِّلْمُتَّقِينَ

(د) إِنَّ اللَّهَ تَوَّابٌ رَّحِيمٌ

(ورق الیہ)

Q. 2 Translate and explain any one of the following Ahadith.

(10)

سوال نمبر ۲ ﴿ درج ذیل احادیث میں سے کسی ایک کا ترجمہ و تشریح کریں۔

(الف) مَنْ يُرِدِ اللَّهُ بِهِ خَيْرًا يُفَقِّهْهُ فِي الدِّينِ

(ب) طَلَبُ كَسْبِ الْحَلَالِ فَرِيضَةٌ بَعْدَ الْفَرِيضَةِ

Q. # 3: Highlight the need and value of the study of the sacred, splendid character of the Holy Prophet.

(10)

سوال نمبر ۳ ﴿ نبی مکرم، تاجدارِ حرم ﷺ کی سیرت طیبہ کے مطالعے کی ضرورت و اہمیت پر روشنی ڈالیے۔

OR یا

Illustrate the impact & importance of the Truce of Hudaibyah

صلح حدیبیہ کے اثرات اور اہمیت کا جائزہ پیش کیجیے۔

Q. # 4: Point out the universal impact of Islamic Civilization.

(10)

سوال نمبر ۴ ﴿ اسلامی تہذیب کے عالمی اثرات کا جائزہ لیں۔

Q. # 5: Write short answer of the following questions.

(10)

سوال نمبر ۵ ﴿ درج ذیل سوالات کے مختصر جوابات لکھیں۔

a. Who has been called Imam-ul-Inbia?

(الف) امام الانبیاء کس ہستی کو کہا جاتا ہے؟

b. Why has back biting been condemned?

(ب) غیبت کی مذمت کیوں فرمائی گئی ہے؟

c. Which is the shortest surah of the Holy Quran?

(ج) قرآن کریم کی مختصر ترین سورہ کون سی ہے؟

d. Who is called Afseh-ul-Arab?

(د) افصح العرب کس ہستی کو کہا جاتا ہے؟

e. How long did pious caliphate last?

(ه) خلافت راشدہ کا دورانیہ کیا تھا؟

Ethics (For Non-muslim Candidates)

Attempt any THREE questions. All questions carry equal marks.

Q. # 1: Discuss the Ethical teachings of christianity in a nutshell.

Q. # 2: What is the impact of non-belief in hereafter upon human life?

Q. # 3: Evaluate and assess the attitude of an Islamic state towards Minorities?

Q. # 4: Why is lying considered to be a moral ill & social evil?

Q. # 5: Define Ethics and discuss its value and Utility.

Q. # 6: Summarise the moral teachings of Budhaism.

UNIVERSITY OF THE PUNJAB



Second Prof. 2nd A/2016
Examination: Doctor of Pharmacy (Pharm.D.)

Roll No.

Subject: Pharmacy Practice-I (Pharmaceutical Mathematics and Biostatistics)
PAPER: 6 (New Course)

TIME ALLOWED: 3 hrs.
MAX. MARKS: 100

NOTE: Attempt FIVE questions in all, selecting THREE questions from Section I and TWO from Section II. Use of Scientific Calculators and Statistical Tables are allowed. Graph paper may be supplied on demand.

SECTION - I

- Q.1 a) Define Biostatistics and differentiate between Descriptive and Inferential Statistics. (10, 10)
 b) Following are the weights of patient in a hospital.

67, 64, 67, 63, 74, 81, 60, 65, 73, 68, 77, 64, 72, 66, 60
 65, 68, 57, 67, 61, 85, 57, 65, 72, 66, 74, 85, 86, 85, 80
 73, 81, 72, 65, 68, 67, 63, 66, 75

Obtain frequency distribution with class interval of 5, beginning with 55.

- Q.2 a) Define Mean-deviation and variance. (6, 14)
 b) Consider the following frequency distribution of the length of life in minutes of black flies subjected to a new spray.

Classes:	0.1 – 1.0	1.1 – 2.0	2.1 – 3.0	3.1 – 4.0	4.1 – 5.0	5.1 – 6.0
No. of Flies:	10	18	30	20	12	09

Compute Co-efficient of variation.

- Q.3 a) The probability that a patient recovers from an operation is 0.75. What is the probability that exactly 5 of the next 8 patients having this operation survive. (10, 10)
 b) A filling machine is regulated so that it discharges an average of 190 ml per bottle. If the amount of discharge is normally distributed with a standard deviation of 16 ml, what fraction of the bottles will contain between 180 and 210 ml?

- Q.4 a) Differentiate between Regression and Correlation. (4, 16)
 b) The amounts of a chemical compound (Y) which dissolved in 100 grams of water at various temperature (X) where recorded as follows:

X:	0	15	30	45	60	75
Y:	8	12	23	30	41	48

Find the equation of the regression line and estimate the amount of chemical that will dissolve in 100 grams of water at 50° temperature.

- Q.5 a) Define level of significance and level of confidence. (4, 16)
 b) Four laborites are being used to perform chemical analysis. Samples of the same material are sent to the laborites for analysis as part of the study to determine whether or not they give, on the average, the same results. The analytical results for the laborites are as follows.

Laboratory	A	59	61	60	59	58
	B	63	65	63	59	60
	C	56	56	57	55	58
	D	61	60	61	60	62

Perform the analysis of variance and give conclusion. (4, 16)

- Q.6 a) Discuss the application of chi-square.
 b) Candidates for scientific posts gave particulars of their degrees and hobbies. The data are presented in the following table.

Hobbies	Degrees		
	Biology	Chemistry	Physics
Music	24	83	17
Crofts Work	11	62	28
Reading	32	121	34

Test the association between the two Criteria of Classification, i.e. the degrees and the hobbies.

P.T.O.

SECTION-II

(7,7,6)

Q.7. a) Solve the equation:

$$(x+3)^{1/2} + 1/(x+3)^{1/2} = 5/2$$

- b) Production of certain drug of a pharmaceutical company increases at the rate of 15% per year. If its present production is 150,000 units, what will be the production after 4 years?
- c) Find the middle term in the binomial expansion of $(3x+1/2x)^8$ and write it in simplified form.

(6,6,8)

Q.8. a) Without using calculation, verify that

$$\sin^2 \pi/6 : \sin^2 \pi/4 : \sin^2 \pi/3 : \sin^2 \pi/2 = 1:2:3:4$$

- b) Find the equation of the side AB of the triangle whose vertices are A(-3,2), B(5,4), and C(3,-8). What is the slope of the altitude drawn from the vertex C to the side AB.
- c) The points A (-5, -2) and B (5, -4) are ends of a diameter of a circle. Find the centre and radius of the circle.

(7,6,7)

Q.9. a) Evaluate

$$\lim_{x \rightarrow 4} \left(\frac{x^2 - 2x - 8}{x^2 - 3x - 4} \right)$$

- b) Find the maximum of $f(x) = 80x - 16x^2$
- c) Integrate

$$\frac{1}{2}x^{1/2} + (x^2 - 2x - 8)^{2/3} (x - 1)$$



UNIVERSITY OF THE PUNJAB

Third Prof. 2nd A/2016

Examination: Doctor of Pharmacy (Pharm.D.)

Roll No.

Subject: Pathology

TIME ALLOWED: 3 hrs.

PAPER: 1

MAX. MARKS: 50

NOTE: Attempt any FIVE questions. All questions carry equal marks.

Question no 1:

What is irreversible Cell Injury Explain cytoplasmic and nuclear features of irreversible cell injury. (10)

Question no 2:

- a) Define Acute Inflammation? Briefly describe different morphological pattern of Acute Inflammation. (6)
- b) Explain outcome of Acute Inflammation (4)

Question no 3:

- a) What are the differences between primary and secondary Wound Healing? (6)
- b) Write down the complications of secondary Wound Healing. (4)

Question no 4:

- A) What is thrombosis? What is the fate of Thrombus? (5)
- B) Define infarction? What are its different types? (5)

Question no 5

- a) Briefly describe Antibody Mediated Hypersensitivity Reaction ? (5)
- b) What are different types of antibodies? Write down their important features (5)

Question no 6

- a. Define Benign Tumor? What are its features (6)
- b. Nomenclature of Benign Tumor with examples? (4)

Question no 7

Write short notes on

- a) Hypertrophy (4)
- b) Granuloama (3)
- c) Metastasis (3)



UNIVERSITY OF THE PUNJAB

Third Prof. 2nd A/2016
Examination: Doctor of Pharmacy (Pharm.D.)

Roll No.

Subject: Pharmacology & Therapeutics-II
PAPER: 2

TIME ALLOWED: 3 hrs.
MAX. MARKS: 100

NOTE: Attempt any FIVE questions. All questions carry equal marks.

1. Classify **NSAIDs**. Discuss the Mechanism of action, Pharmacological and untoward effects of **Aspirin**. (20)
2. Classify **Antidepressant** Drugs. Discuss the Pharmacology of **SSRIs** and **MAOIs**. (20)
3. Describe the Life cycle of **Malarial Parasite Plasmodium falciparum**. Discuss the Mechanism of action, Pharmacokinetic and Anti-malarial spectrum of **Chloroquine & Primaquine**. (20)
4. a) What are different classes of natural compounds used as **Cytotoxic agents**? (10)
b) Discuss the Mechanism of action of **Paclitaxel (Taxol) & Cisplatin**. (10)
5. Discuss the Mechanism of action, Antibacterial spectrum and contraindication of **Macrolides**. (20)
6. a) Classify **Antifungal** drugs. (08)
b) Discuss the mechanism of action and adverse effects of **Amphotericin B & Griseofulvin**. (12)
7. Classify **Antiviral** drugs. Discuss the Mechanism of action and therapeutic uses of **Acyclovir & Interferons**. (20)



UNIVERSITY OF THE PUNJAB

Third Prof. 2nd A/2016
Examination: Doctor of Pharmacy (Pharm.D.)

Roll No.

Subject: Pharmacognosy-II
PAPER: 3

TIME ALLOWED: 3 hrs.
MAX. MARKS: 100

NOTE: Attempt any FIVE questions. All questions carry equal marks.

- Q. 1 a) Define tannins. Discuss uses of tannins. 10
b) Write Pharmacognostic note on hamamelis. 10
- Q 2. What are alkaloids? Discuss Quinoline Alkaloids 20
- Q 3. Write note on the following
- a. Bees Wax
b. Lanoline 20
- Q 4. Define chromatography; discuss in detail Paper Chromatography. 20
- Q 5. Give structure and therapeutic uses of following drugs, 4x5
1. Caffeine
2. Quinidine
3. Aloe emodin
4. Eucalyptol
- Q 6. Write notes on Phenolic volatile oils. 20
- Q 7. Describe the detail of following crude drugs. 4x5
- i) White squill
ii) Cochineal
iii) Vanilla
iv) Ginger



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Third Prof. 2nd A/2016
Examination: Doctor of Pharmacy (Pharm.D.)

Roll No.

Subject: Pharmaceutics-III (Dispensing & Community Pharmacy)
PAPER: 4

TIME ALLOWED: 3 hrs.
MAX. MARKS: 100

NOTE: Attempt FIVE questions select TWO from first Part and THREE from Second Part. All questions carry equal marks.

PART-I (Dispensing Pharmacy)

Q.1 Describe applications of Radiopharmaceuticals and what are desired characteristics of radiopharmaceuticals for effective application? (20)

Q. 2. (a) Discuss general method for dispensing and packaging of unit dose powders and capsules? (15)

(b) What are the different problems encountered in emulsion preparation? (5)

Q. 3. Write notes on followings (20)

i) Labelling

ii) Gelling agents

PART-II (Community Pharmacy)

Q.4. (a) Define the following terms (10)

Essential drugs, Mortality rate, epidemic, Randomization, Chronic disease.

(b) Define community pharmacy; describe the advantages of dispensing by Pharmacist giving some examples. (10)

Q. 5. (a) Define Health; describe the role of pharmacist in health promotion? (10)

(b) Describe Etiology, symptoms, treatment of following (10)

i) Diarrhea

ii) Scabies

iii) Red eye

Q. 6. (a) Define epidemiology, what are various experimental studies conducted at community level? (10)

(b) Describe medical complication of drug taking in injecting drug users (10)

Q. 7. (a) Define patient's counseling and discuss the types of counseling. Also discuss how the patient's should be treated when arrive at community pharmacy. (10)

(b) What is the role of a pharmacist as a public health educator (10)



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Roll No.

Third Prof. 2nd A/2016

Examination: Doctor of Pharmacy (Pharm.D.)

Subject: Pharmaceutical Chemistry-II (Instrumentation) TIME ALLOWED: 20 min.

PAPER: 5

MAX. MARKS: 20

Attempt this Paper on this Question Sheet only.

Note: This paper comprises of TWO Parts, Part – I (MCQs) and Part – II (descriptive). Part – I is compulsory, whereas attempt any FOUR questions from Part – II. Each question carries equal marks.

Part – I Multiple Choice Questions (MCQs). Please encircle the correct statement, each MCO carries 2 marks, total Marks. 20.

No. of question	Question	Marks
Q.1	1- Average rate of migration of a solute (V) in column depends on which of the following? a- Carrier velocity b- V_s/V_m c- Distribution coefficient (K) d- All a, b and c 2- Which of the following is incorrect for chromatographic development? a- Frontal analysis b- Simple filtration c- Displacement analysis d- Elution 3- The function of the salt bridge is: a- to maintain electrical neutrality of the solution in two half cells b- to provide link between two half cells c- to allow ions to go from one cell to another d- to keep the emf of the cell positive	20
	4- Limit of detection is expressed by an equation ($LOD = 3.3\sigma/S$). In this equation S stands for which one of the following? e- Slope of the standard curve f- Solubility constant g- Standard deviation h- Intercept of the standard curve	

P.T.O.

5- Half-wave potential of the polarogram determines which of the following?

- e- Semi quantitative information
- f- Qualitative and quantitative information
- g- Quantitative information
- h- Qualitative information

6- Which of the following is true for bulk property detector?

- e- UV detector
- f- Florescent light detector
- g- Refractive index detector
- h- Photo diode array detector

7- Which of the following is true for a primary standard?

- e- Oxalic acid rehydrate
- f- Oxalic acid dihydrate
- g- Oxalic acid dehydrate
- h- Oxalic acid monohydrate

8- A solvent has retention time of 30 min and aspirin 75 min with peak width 6.5 min. What will be the capacity factor for aspirin?

- a- 1.5
- b- 2.6
- c- 1.9
- d- 1.02

9- Tetramethylsilane (TMS) is used as an internal standard in NMR due to which one of the following?

- a- Silicone is less electronegativity than carbon
- b- All the 12 protons are highly shielded
- c- Its signal is defined as zero
- d- a, b, c

10- Which of the following is true for a DSC calibrant?

- e- high purity
- f- accurately known enthalpies
- g- thermally stable
- h- a,b,c



UNIVERSITY OF THE PUNJAB

Fourth Prof. 2nd A/2016

Examination: Doctor of Pharmacy (Pharm.D.)

Roll No.

TIME ALLOWED: 3 hrs.

MAX. MARKS: 100

Subject: Pharmaceutics-IV (Hospital Pharmacy)

PAPER: 1

NOTE: Attempt any FIVE questions. All questions carry equal marks.

- Q.1 Write down the Generic name, company name, dosage form, Strengths, indications, contra indication and drug interactions of the following drugs: (20)
- ((I) Azomax (II) Zantac (III) Valium (IV) Caflam (V) Cefspan (VI) Antial (VII) Nims
(VIII) Adalat (IX) Diamicon (X) Polyfax
- Q.2 a) Discuss the minimum standards for pharmacy department in a hospital. (10)
b) Explain dextrose and fats as macronutrients in TPN? (10)
- Q.3 a) Discuss safe handling practices and reconstitution of cytotoxic drugs? (10)
b) What is patient counseling? Explain the different steps involve in counseling. (10)
- Q.4 a) Define medication errors and near miss? Explain types of medication errors (10)
b) Discuss the role of Pharmacist in controlling the medication errors (10)
- Q.5 What types of supportive services are provided in a hospital (20)
- Q.6 a) Write a detail note on In-patients dispensing. (10)
b) What is Pharmacy departmental organization in a hospital? Explain with charts (10)
- Q.7 a) What is P & TC? Explain its functions in details. (10)
b) Discuss the basic guidelines for the I.V admixture preparations? (10)



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Fourth Prof. 2nd A/2016

Examination: Doctor of Pharmacy (Pharm.D.)

Roll No.

Subject: Pharmaceutics-V (Clinical Pharmacy-I)
PAPER: 2

TIME ALLOWED: 3 hrs.
MAX. MARKS: 100

NOTE: Attempt any FIVE questions. All questions carry equal marks.

Q. 1: (a) Explain pharmacodynamics drug-drug interactions with suitable examples. (8)
(b) Compare and discuss the significance and procedural differences of different phases of clinical trials (7)
(c) Role of pharmacist in the management of drug interactions (5)

Q. 2: (a) Write a note on Extended Rawlins-Thompson classification of ADRs. (5)
(b) How can the following drugs induce ADRs in patients with cardiovascular diseases? (10)
(i) Celecoxib (ii) Atenolol (iii) Tranexamic acid
(iv) Diclofenac (v) Immediate-release Nifedipine
(c) Enlist the name of drugs that have been withdrawn from market due to *torsades de pointes* arrhythmia. (5).

Q. 3: (a): Write a detailed note on the use of computers in hospital pharmacies. (10)
(b) Differentiate between primary, secondary and tertiary literature with examples. (10)

Q. 4: (a) Briefly describe the responsibilities of a clinical pharmacist in hospital. (10)
(b) What are the therapeutic uses and withdrawal effects of diazepam? (10)

Q. 5: (a) Write a note on drug-drug interactions at drug distribution and transport level. Justify with examples. (8)
(b) An IDDM patient is admitted to the ED with the symptoms of nausea, vomiting, SOB, pulse 116/min, B.P 92/70 mmHg, BSR 545 mg/dl, R.R 30 breaths/min and labored with fruity odor. Write down diagnose and treatment protocol for this patient. (12)

Q. 6:(a) Define acute kidney injury and describe its stages (3)
(b) Write a detailed note on angiotensin converting enzyme inhibitors/angiotensin receptor blockers-induced acute kidney failure. (7)
(c) Write the contents and process of taking patient's medical history. (6)
(d) What is research literature review? Write all the steps involved in literature search. (4)

Q. 7: (a) Write a note on patient-related factors affecting ADRs with examples. (8)
(b) What are the predisposing factors of *torsades de pointes* arrhythmia and how can we treat this condition? (8)
(c) What is ABCD in emergency treatment? Briefly explain (4)



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Fourth Prof. 2nd A/2016

Examination: Doctor of Pharmacy (Pharm.D.)

Roll No.

Subject: Pharmaceutics-VI (Industrial Pharmacy)

TIME ALLOWED: 3 hrs.

PAPER: 3

MAX. MARKS: 100

NOTE: Attempt any FIVE questions. All Questions carry equal marks.

Question 1:

(a)- What are different theories of drying? Write down the classification of dryers? (10)

(b)- Discuss emulsions and their stability? Write down mechanical equipments used for emulsions preparation? (10)

Question 2:

Define quality assurance. Write detailed note on Good Manufacturing Practices and Current Good Manufacturing Practices used in pharmaceutical industry? (20)

Question 3:

(a)- Discuss in detail the principal and working of cutter mill and fluid energy mill? (10)

(b)- Define mixing. What are the reasons for size reduction and factors affecting size reduction? (10)

Question 4:

(a)- Define sterile area. Write detailed note on Inprocess Quality Control of parenterals? (10)

(b)- What is filter media? Discuss leaf filter and rotary filter in detail. (10)

Question 5:

(a)- What is solid-air interface and angle of repose? (6)

(b)- Discuss in detail the tablet coating, and problems involved in tableting? (12)

Question 6: Write a short note on 04 of the followings. All parts carry equal (05) marks. (20)

- 1- Heat transfer
- 2- Evaporation under reduced pressure
- 3- Granulation
- 4- Inflammable gases and dusts
- 5- Size analysis and sieving.

Question 7:

(a)- Define packaging. Discuss packaging area and influence of packaging materials on pharmaceuticals' products? (10)

(b)- How suspensions are formulated? And which type of equipments are employed for their preparation? (10)



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Fourth Prof. 2nd A/2016
Examination: Doctor of Pharmacy (Pharm.D.)

Roll No.

Subject: Pharmaceutics-VII (Biopharmaceutics)
PAPER: 4

TIME ALLOWED: 3 hrs.
MAX. MARKS: 100

NOTE: Attempt any FIVE questions. All Questions carry equal marks.

- Q1 a) Define the following terms: 5 Marks
i) Persistence factor. ii) Drug disposition.
iii) Therapeutic equivalents. iv) Bioequivalence.
v) Mammillary model.
- b) What is Bioavailability? Describe briefly different Pharmaceutical factors affecting the bioavailability of drugs. 15 Marks
- Q2 a) Describe the measurement of bioavailability using the blood data. 8 Marks
b) How is the absorption rate constant determined in two compartment open model after oral administration? Demonstrate with illustration. 12 Marks
- Q3 a) What is therapeutic drug monitoring? Describe the process of Therapeutic drug monitoring. 2+6 Marks
b) What is Biopharmaceutics? How does Biopharmaceutics affect the dosage form design? 12 Marks
- Q4 a) What is the sequence of biotransformation reactions? What are the changes brought about in drug molecules during Phase I and II reactions? 3+3 Marks
b) What is the first pass effect? Describe Phase I biotransformation reactions with at least one example. 4+10 Marks
- Q5 a) Explain the difference between drug clearance and drug excretion. 6 Marks
b) Describe protein binding. Describe the kinetics of protein binding. 14 Marks
- Q6 a) Which categories of drugs are given through I/V infusion? Describe the Pharmacokinetics parameters to determine I/V infusion? 3+12 Marks
b) Describe volume of distribution. Why is it called as "apparent"? 5 Marks
- Q7 Write short notes on the following: 6+8+6 Marks
i) Trapezoidal method ii) Biological half life
iii) Hepatic clearance



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Fourth Prof. 2nd A/2016

Examination: Doctor of Pharmacy (Pharm.D.)

Roll No.

Subject: Pharmaceutics-VIII (Pharmaceutical Quality Control)
PAPER: 5

TIME ALLOWED: 3 hrs.
MAX. MARKS: 100

NOTE: Attempt any FIVE questions. All Questions carry equal marks.

Question 1.

- A. Describe the apparatus and method used for the disintegration testing of suppositories. (15)
- B. Define Liquefaction time and melting range with regard to the quality control of suppositories. (5)

Question 2.

- A. Provide detail about various parts of official apparatus used for the disintegration testing of tablets. Also describe how the disintegration of enteric coated tablets is performed? (15)
- B. Name various official apparatuses used for the dissolution testing of solid dosage forms and also provide their Pharmaceutical applications. (5)

Question 3.

- A. Define dissolution. Describe methods for the dissolution testing of compressed tablets. (10)
- B. Provide names of various compendial and non compendial quality control tests for capsules and tablets. Explain friability test in detail. (10)

Question 4.

- A. Why quality testing of glass is important in Pharmaceuticals? Write down procedure for testing of Type I glass. (10)
- B. What is importance of pyrogen testing in Pharmaceuticals? Name two types of pyrogens tests and shortly describe the principal involved in these two methods. (10)

Question 5.

- A. How media is tested before sterility testing and why it is important to do. (6)
- B. Describe in detail the procedure of sterility testing on semi-solid dosage forms in accordance with interpretation of results. (14)

Question 6.

Write a note on the followings:

(5 each)

- A. Loss on drying
- B. Ash test
- C. Precautions in distillation method of alcohol determination
- D. Particle size determination in ointments

Question 7.

- A. Enlist different quality control tests for Elixers. Explain in detail various apparatuses used for viscosity determination of syrups. (12)
- B. How the *in-vitro* evaluation of sustained release dosage forms is performed? (8)

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Final Prof. 2nd A/2016
Examination: Doctor of Pharmacy
(Pharm.D.)

Roll No.

Subject: Pharmaceutical Chemistry-III (Medicinal Chemistry)
PAPER: 1

TIME ALLOWED: 3 hrs.
MAX. MARKS: 100

NOTE: Attempt any FIVE questions, Each question carries equal marks.

Paper -I

Note: Attempt five questions, each question carries equal marks

Q. 1: Describe the Medicinal chemistry, including SAR and therapeutic uses of Thiazide diuretics. (20)

Q. 2: Discuss the Medicinal chemistry of Anti-Viral Drugs.(20)

Q. 3: Discuss the medicinal chemistry of beta lactam antibiotics and discuss SAR of penicillins. (20)

Q. 4 Discuss the medicinal chemistry, synthesis and SAR of Barbiturates (20)

Q. 5: Write note on the following (8+6+6)

- a- Silver sulfadiazine
- b- Formaldehyde
- c- Vitamin K

Q. 6: Discuss the mechanism of action, synthesis, SAR and uses of 4-aminoquinolines.(20)

Q. 7: Write note on the followins. (10+10=20)

(i) Isoniazid

(ii) Indomethacin

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Final Prof. 2nd A/2016
Examination: Doctor of Pharmacy
(Pharm.D.)

Roll No.

Subject: Pharmaceutics-IX (Clinical Pharmacy-II)
PAPER: 2

TIME ALLOWED: 3 hrs.
MAX. MARKS: 100

NOTE: Attempt any FIVE questions. All questions carry equal marks.

Q. # 1: (a) Briefly explain the followings (10)

(i) Pharmaco-economics (ii) Quality Adjusted Life Years (iii) Steady State
(iv) Incretin effect (v) Stratified Sampling

(b) Describe Drug Utilization Review Categories and process of establishing review criteria and thresholds. (7 marks)

(c) Write a brief note on Non-probability Sampling methods. (3 marks)

Q. # 2: (a) Write a detailed note on therapeutic drug monitoring of Gentamicin. (8 marks)

(b) Enlist Pharmaco-economic methodologies for partial, full and humanistic evaluation and discuss with examples cost minimization and cost effectiveness analysis in detail. (8 marks)

(c) Factors affecting therapeutic drug monitoring (4 marks)

Q. # 3: (a) Discuss in detail the diabetic emergencies and how as a pharmacist you can educate and manage these patients (8 marks)

(b) Write a note on the problems associated with irrational use of drugs related to patient diagnosis? (8 marks)

(c) What are health facility indicators. (4 marks)

Q. # 4: (a) Describe the organization of community pharmacy in detail. (10 marks)

(b) Enlist the sign and symptoms and mode of transmission of HIV/AIDS and Hepatitis in detail. (10 marks)

Q. # 5: (a) Write a detailed note on angiotensin converting enzyme inhibitors/angiotensin receptor blockers-induced acute kidney failure (8 marks)

(b) Role of a Pharmacist in Drug Utilization Review process (4 marks)

(c) Write a detail note on therapeutic drug monitoring of Digoxin. (8 marks)

Q. # 6. Define chronic kidney disease and describe its stages (5 Marks)

b) Write a detailed note on analgesics-induced chronic kidney disease (8 marks)

(c) What is the etiology and clinical presentation of patient afflicted with meningitis (7 marks)

Q. # 7. (a) Differentiate between antiplatelet, anticoagulant and thrombolytics used for IHD (7 marks)

(b) Briefly discuss first line antihypertensive treatment option for black people (8 marks)

(c) Enlist the names of 1st and 2nd line antibiotics that can be used for URTIs (5 marks)

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Final Prof. 2nd A/2016
Examination: Doctor of Pharmacy
(Pharm.D.)

Roll No.

Subject: Pharmaceutical Technology
PAPER: 3

TIME ALLOWED: 3 hrs.
MAX. MARKS: 100

NOTE: Attempt any FIVE questions. All questions carry equal marks.

Q. No	Question	Marks
1	a Define solubility, what are its various types? Describe the thermodynamics of solution formation that determines the solubility of a compound.	10
	b How the followings are important at the stage of product development. i) Excipient compatibility ii) Particle size and shape	10
2	a What is salt screening? Give its importance in pharmaceutical drug development	10
	b A. Define following terms i. Polymorphism ii. Co crystallization iii. Amorphization iv. Stable and metastable compounds v. Prodrug	10
3	a Describe different methods for sterilization of pharmaceutical preparations?	10
	b What are liposomes? How these are different from nisosomes? Give their applications	10
4	a Differentiate between active and passive drug targeting, describe some strategies to achieve the targeting of drugs.	10
	b Define the followings and give their application i) Organic coating ii) Feedback regulated drug delivery systems. iii) Acrylic polymers.	10
5	a Differentiate between immediate and extended release drug delivery systems, why we need these systems?	10
	b Describe various dissolution based formulation designs to achieve extended release of drugs.	10
6	a Describe briefly the process analytical technique (PAT) and design space in formulation development.	10
	b Write a note on swell-able gastro-retentive drug delivery system (GRDDS), describe in-vivo characterization of GRDDS?	10
7	a What are the practical problems associated with enzymes and how these are addressed?	10
	b Describe steps involved in the production of monoclonal antibodies, Describe their applications.	10

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Final Prof. 2nd A/2016
Examination: Doctor of Pharmacy
(Pharm.D.)

Roll No.

Subject: Forensic Pharmacy
PAPER: 4

TIME ALLOWED: 3 hrs.
MAX. MARKS: 100

NOTE: Attempt any FIVE questions. All questions carry equal marks.

Q.No	Question	Marks
1	Give brief answers of the following under the Drugs Act 1976 i. Spurious drug ii. Types of drug manufacturing licenses iii. Qualification of Federal Inspector iv. IMS data v. Quarantine	4 each
2	a) Discuss Good Manufacturing Practices (GMP) related to location and surrounding and size of building for License to manufacture by way of formulation (Schedule B-II)	10
	b) Is the advertisement of every drug legal? Provide a list of drug categories that cannot be advertised.	10
3	a) Define the following terms as per DRAP Act 2012. i) Drug ii) Medical devices iii) Therapeutic goods	5+3+2
	b) What is the composition of Drug Regularity Authority of Pakistan (DRAP)?	10
4	a) Describe the following under Drug (labeling and packing) Rules 1986 i) Labelling of medical devices. ii) Labelling of drugs for Government supply.	5+5
	b) Describe prohibitions and penalties related to possession, import/export and trafficking of narcotic drugs given under Control of Narcotic Substances Act 1997.	10
5	a) Discuss the following under Factory Act: i) Inspecting staff and their powers. ii) Safety of workers.	5+5
	b) Discuss following under Pharmacy Act 1967 (i) Preparation and maintenance of registers under section 24 (ii) Procedure for registration under section 26	5+5
6	a) Enlist various types of drug sale license. How you will apply for the new license of your pharmacy?	10
	b) What are conditions of drug sale license related with i) Registered Medical Practitioner (RMP) ii) Schedule E drugs	5+5
7	Describe the following under Drug Act 1976 i) Conditions under which a drug is registered. ii) Reports of Govt. Analyst	10 10

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Final Prof. 2nd A/2016
Examination: Doctor of Pharmacy
(Pharm.D.)

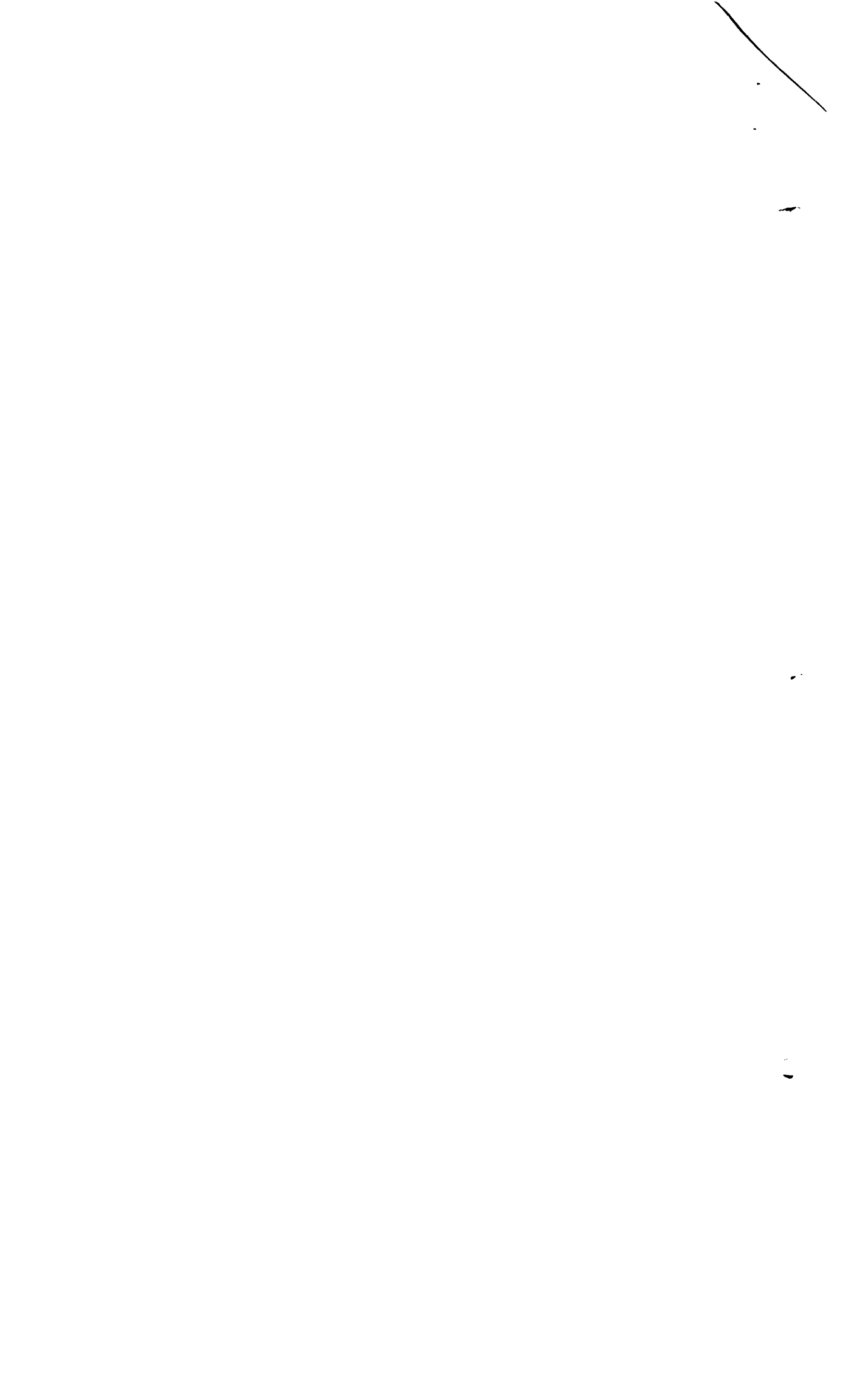
Roll No.

Subject: Pharmaceutical Management & Marketing
PAPER: 5

TIME ALLOWED: 3 hrs.
MAX. MARKS: 100

NOTE: Attempt any FIVE questions. All questions carry equal marks.

- Q. NO.1:(a) Write a note on basic functions of marketing (8)
(b) Define Product and discuss New Product Development Process. (12)
- Q. NO. 2: (a) What is the difference between Creativity and Innovation? Explain the Personality traits of creative people. (10)
(b) Explain how four cognitive creativity skills are promoted by creativity techniques. (10)
- Q. NO. 3: (a) Define Promotion and its objectives? Discuss how you would design a Promotion Mix. (12)
(b) Write a note on Regulation of Promotion for Pharmaceutical Product. (08)
- Q. NO. 4: (a) Define Price and discuss factors affecting price setting of a product. (12)
(b) Discuss different types of price strategies. (8)
- Q. NO. 5: Discuss Cost Control and Operational Management as elements of production management. (20)
- Q. NO. 6: Define motivation and discuss in detail two motivation theories. (20)
- Q. NO. 7: (a) Write a note on different components of Cost Control. (12)
(b) Discuss Package as a promotional tool. (8)



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Final Prof. 2nd A/2016
Examination: Doctor of Pharmacy
(Pharm.D.)

Roll No.

Subject: Computer and its Applications in Pharmacy
PAPER: 6

TIME ALLOWED: 3 hrs.
MAX. MARKS: 50

Instructions:

- Solve entire paper (both Objective and Subjective Parts) on Answer Book.
- In case of MCQs, write the Correct Option only, cutting / overwriting is not allowed.
- There is no choice among questions, you have to attempt all questions.
- Read the Questions carefully before attempting.
- No lead pencils, only BLUE or BLACK ink is allowed to solve the paper.

"BEST OF LUCK"

OBJECTIVE SECTION

[20 Marks]

Determine the correct option for each of the following questions. Write the **Question Number** and your selected option like **(A, B, C or D)** in **CAPITAL** letters on the **Answer Book** only in a clear manner. You do not need to write the question statement on the Answer Book.

Q.1. A CPU contains

- A. a card reader and a printing device
- B. an analytical engine and a control unit
- C. a control unit and an arithmetic logic unit
- D. an arithmetic logic unit and a card reader

Q.2. CD-ROM stands for

- A. Compactable Read Only Memory
- B. Compact Data Read Only Memory
- C. Compact Disk Read Only Memory
- D. Compactable Disk Read Only Memory

Q.3. VGA is

- A. Video Graphics Array
- B. Visual Graphics Array
- C. Video Graphics Adapter
- D. Volatile Graphics Array

Q.4. A normal CD- ROM usually can store up to _____ data?

- A. 680 KB
- B. 680 Bytes
- C. 680 MB
- D. 680 GB

Q.5. The main role of data de-fragmentation is to

- A. Secure your data from viruses
- B. Stop unauthorized use of data
- C. Increase the data access speed
- D. None of the Above

- Q.6.** System Restore Utility can enable us to restore
- A. drives data where OS is not installed
 - B. your personal files
 - C. option a & b both
 - D. system state
- Q.7.** The physical arrangement in a computer that contains the computer's basic circuitry and components is called.
- A. Processor
 - B. Hard Disk
 - C. RAM
 - D. Motherboard
- Q.8.** Background pictures may have the following file extensions.
- A. exe, doc, pdf
 - B. dll, lib, ppt
 - C. txt, zip
 - D. bmp, gif, jpg
- Q.9.** _____ is a programming language and it can be used for development of Websites.
- A. C++
 - B. Fortran
 - C. MIS
 - D. HTML
- Q.10.** A _____ website is one whose content is regenerated at all a user visits or reloads the site.
- A. Static
 - B. Informative
 - C. Entertainment
 - D. Dynamic
- Q.11.** How to use Format Painter multiple times
- A. By click on lock format painter icon
 - B. By double click on the format painter icon
 - C. By selecting Edit -> format painter -> multiple use
 - D. Format painter cannot be use multiple times
- Q.12.** Microsoft Word is a very common example of _____ software.
- A. Messaging
 - B. Application
 - C. Communication
 - D. Development
- Q.13.** What is the default font used in MS Word 2007 document?
- A. Times New Roman
 - B. Calibri
 - C. Arial
 - D. Preeti

- Q.14.** As you type in MS Word, the insertion point moves automatically to the next line when you reach the right margin is called.
- A. AutoComplete
 - B. Word Wrap
 - C. AutoCorrect
 - D. Spell & Grammar
- Q.15.** Getting data from a cell located in a different sheet is called....
- A. Accessing
 - B. Referencing
 - C. Updating
 - D. Functioning
- Q.16.** A _____ is a built-in or predefine formula that makes it easy to perform a complex calculation in MS Excel.
- A. Function
 - B. Label
 - C. Value
 - D. Argument
- Q.17.** In a computer network, there are number of ways to join computers to speed up the performance and fault tolerance, which are called as Network.
- A. Topologies
 - B. Terminologies
 - C. Resources
 - D. Processing
- Q.18.** An unintelligent network device that sends one signal to all of the connected stations is known as.
- A. HUB
 - B. Switch
 - C. Bridge
 - D. Router
- Q.19.** A cable, consisting of a center glass core surrounded by layers of plastic that transmits data using light rather than electricity is called.
- A. Fiber optic
 - B. Coaxial Cable
 - C. Twisted pair Cable
 - D. None of the above
- Q.20.** _____ resides on Layer 3 (Network Layer) of the OSI model.
- A. Router
 - B. HUB
 - C. Switch
 - D. Bridge

SUBJECTIVE SECTION [30 Marks]

Question 1 [06 Marks]

How does the computer technology be used to enhance the performance of a pharmaceutical professional?

Question 2 [06 Marks]

What is Data Processing and Data Processing Cycle, and also describe the difference between Batch Processing and Real-Time Processing.

Question 3 [06 Marks]

Define the following terms briefly. Each term should be defined no more than six lines.

1. Disk Controller
2. ROM & RAM
3. Computer Viruses & Anti-Viruses
4. Access Time of Memory
5. Interactive Whiteboard
6. Ports and Bays in a System Unit

Question 4 [06 Marks]

You have established an office of graphic designing and you have to purchase a computer for this office. Please list down the specifications of the following devices that will fulfill your needs as a graphic designer.

- a. Processor
- b. Memory
- c. Input Devices
- d. Storage Devices
- e. Communication Devices

Question 5 [06 Marks]

Consider the following UCP Pharmacy Voucher. You are required to write MS Excel Formulae by considering the following constraints.

- **Article Price** is a product of Rate and Quantity
- **Gross Total** is a sum of all articles' prices.
- **Calculate Tax** 5% of Gross Total IF Gross Total is up to Rs.800/- otherwise Tax would be 10% of Gross Total.
- **Calculate Discount** 8% of Gross Total IF Gross Total is up to Rs.600/- otherwise Discount would be 12% of Gross Total.
- **Payable Amount** is the calculation of Gross Total, Tax and Discount.

	A	B	C	D	E
1	UCP Pharmacy				
2	Sr. No.	Article Name	Rate	Quantity	Price
3	1	Omega	90	4	360
4	2	Panadole	10	3	30
5	3	Concor	80	3	240
6	4	Desprine	10	6	60
7	5	Simva	50	4	200
8	Gross Total				890
9	Tax				89
10	Discount				106.8
11	Payable Amount				872.2