

September 2009

[KV 801]

Sub. Code: 3801

**DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION**

**(Regulations 2008 - 2009)**

**(Candidates admitted from 2008-2009 onwards)**

**FIRST YEAR**

**Paper I – HUMAN ANATOMY AND PHYSIOLOGY**

**Q.P. Code : 383801**

**Time : Three hours**

**Maximum : 70 marks**

**Answer All questions**

**I. Essay Questions :**

**(2 x 20 = 40)**

1. Give an account of the composition and functions of blood. Mention the disorders of blood components.
2. Describe the structure, secretions and functions of anterior pituitary gland.  
Add a note on hyperthyroidism.

**II. Write Short Notes :**

**(6 x 5 = 30)**

1. Spinal Cord.
2. Cardiac cycle.
3. Liver.
4. Muscle in exercise.
5. Contraceptive devices.
6. Drugs and athletics.

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2019

March 2010

[KW 801]

Sub. Code: 3801

**DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION**

**(Regulations 2008 - 2009)**

**(Candidates admitted from 2008-2009 onwards)**

**FIRST YEAR**

**Paper I – HUMAN ANATOMY AND PHYSIOLOGY**

**Q.P. Code : 383801**

**Time : Three hours**

**Maximum : 70 marks**

**Answer All questions**

**I. Essay Questions :**

**(2 x 20 = 40)**

1. With a neat and labelled diagram, describe the structure and functions of heart.  
Write briefly on pulmonary circulation.
2. With a neat and labelled diagram, describe the structure and functions of the kidney.  
Explain how urine is formed.

**II. Write Short Notes :**

**(6 x 5 = 30)**

1. Cranial nerves.
2. Epithelial tissue.
3. Types of movements of joints.
4. Ovulation.
5. Regulation of respiration.
6. Digestion and absorption of proteins.



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September 2010

Sub. Code: 3801

[KX 801]

**DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION**

(Regulations 2008 - 2009)

(Candidates admitted from 2008-2009 onwards)

**FIRST YEAR**

**Paper I – HUMAN ANATOMY AND PHYSIOLOGY**

*Q.P. Code : 383801*

Time : Three hours

Maximum : 70 marks

Answer All questions

(2 x 20 = 40)

**I. Essay Questions :**

1. Define a Cardiac cycle. Describe the various events taking place in a cardiac cycle with time sequences.
2. a) List out the secretions from pituitary gland with its Physiological functions.  
b) Explain the Structure and Physiological functions of Thyroid gland.  
c) Add a note on the disorders of Thyroid gland.

(6 x 5 = 30)

**II. Write Short Notes :**

1. Classify Joints with the possible movements of joints from its location.
2. Enumerate the functions of blood.
3. Define the following: i) Hypertension ii) Myocardial infarction  
iii) Hypoxia iv) Resuscitation
4. Differentiate the terms Digestion and Absorption.
5. Describe the contraceptive devices for both Male and Female based on temporary method.
6. Write a brief note on Drug docking.

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2019

May 2011

[KY 801]

Sub. Code: 3801

DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION

(Regulations 2008 - 2009)

(Candidates admitted from 2008-2009 onwards)

FIRST YEAR

PAPER I – HUMAN ANATOMY AND PHYSIOLOGY

Q.P. Code : 383801

Time : Three hours

Maximum : 70 marks

Answer All questions

I. Essay Questions :

(2 x 20 = 40)

1. a) Discuss about pancreatic islets and its hormones functions. Explain the diabetes mellitus and its complications.
- b) Explain the structure of skin with labelled diagram. Write about the functions of skin.
2. a) Explain the menstrual cycle. (7)
- b) Draw the neat diagram of heart and label it. Explain the structure of heart. Discuss about the blood flow process in the heart. (2+6+5)

II. Write Short Notes :

(6 x 5 = 30)

1. White blood cells and its function.
2. Define following terms a) Megaloblastic anaemia b) Hypertension c) Gastritis d) Osteoarthritis.
3. Salivary glands and its functions.
4. Clotting mechanism.
5. Adrenal medulla.
6. Disorders of pituitary glands.



2019

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October 2011

Sub. Code: 3801

[KZ 801]

DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION

FIRST YEAR

PAPER I – HUMAN ANATOMY AND PHYSIOLOGY

Q.P. Code : 383801

Time : 3 hours  
(180 Min)

Maximum : 100 marks

Answer ALL questions in the same order.

I. Elaborate on :

- |  | Pages<br>(Max.) | Time<br>(Max.) | Marks<br>(Max.) |
|--|-----------------|----------------|-----------------|
| 1. Describe the anatomy of lungs and physiology of respiration with diagram. | 17              | 40 min.        | 20              |
| 2. What are the endocrine glands of our body and give their functions?       | 17              | 40 min.        | 20              |

II. Write notes on :

- |  |   |         |   |
|--|---|---------|---|
| 1. Enumerate the functions of blood.                                     | 4 | 10 min. | 6 |
| 2. Write the vital centres in brain.                                     | 4 | 10 min. | 6 |
| 3. Explain in brief structure and functions of skin.                     | 4 | 10 min. | 6 |
| 4. Write the various types of clotting factors.                          | 4 | 10 min. | 6 |
| 5. Write a note on<br>a) Hypothalamus b) Cranial nerves.                 | 4 | 10 min. | 6 |
| 6. Describe briefly about the mechanism of micturition.                  | 4 | 10 min. | 6 |
| 7. Write a note on electrocardiogram.                                    | 4 | 10 min. | 6 |
| 8. Write about muscle in exercise.                                       | 4 | 10 min. | 6 |
| 9. Discuss about any three disorders involved in gastrointestinal tract. | 4 | 10 min. | 6 |
| 10. Write three phases involved in gastric juice.                        | 4 | 10 min. | 6 |

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2019

April 2012

[LA 801]

Sub. Code: 3801

DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION

FIRST YEAR

PAPER I – HUMAN ANATOMY AND PHYSIOLOGY

Q.P. Code : 383801

Time : 3 hours  
(180 Min)

Maximum : 100 marks

Answer ALL questions in the same order.

I. Elaborate on :

	Pages (Max.)	Time (Max.)	Marks (Max.)
1. Draw a neat labeled diagram of different parts of nephron. Explain the mechanism and hormones regulating urine formation.	17	40	20
2. Discuss the anatomy of pituitary gland and name the hormones secreted by pituitary gland Describe briefly the physiological functions and abnormalities of growth hormone.	17	40	20

II. Write notes on :

1. Briefly explain the Rennin Angiotensin system and its importance in blood pressure maintenance.	4	10	6
2. Write the Non auditory functions of ear and name the nerves of audition.	4	10	6
3. Explain the factors controlling erythropoiesis.	4	10	6
4. Define the following terms: a)Atherosclerosis b)Oliguria c)Jaundice d)Apnoea e)Leucocytosis f)Ataxia.	4	10	6
5. Discuss the transport of oxygen in blood. What are the factors influencing oxygen dissociation curve?	4	10	6
6. List out the cranial nerves and its functions.	4	10	6
7. Name the clotting factors. Add a note on clotting and bleeding disorders.	4	10	6
8. Describe the physiological changes during severe exercise.	4	10	6
9. Anatomy and functions of liver.	4	10	6
10. Write a note contraceptive device.	4	10	6



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2019

[LB 801]

OCTOBER 2012  
PHARM. D DEGREE EXAMS  
FIRST YEAR  
PAPER I – HUMAN ANATOMY AND PHYSIOLOGY  
Q.P. Code : 383801

Sub. Code: 3801

Time : 3 hours  
(180 Min)

Maximum : 100 marks

Answer ALL questions in the same order.

I. Elaborate on :

	Pages (Max.)	Time (Max.)	Marks (Max.)
1. Describe the mechanism of coagulation of blood with clotting factors involved. How do intrinsic and extrinsic pathways differ? Add note on erythropoietin.	17	40	20
2. Explain in detail about the mechanism and regulation of respiration. Explain the following terms (i) End Diastolic Volume (EDV) (ii) Vital Capacity (VC) (iii) Glomerular Filtration Rate.	17	40	20

II. Write notes on :

1. Name the elementary tissues of the human body and give their silent features.	4	10	6
2. Define Micturition. Explain the mechanism of Micturition.	4	10	6
3. What are the various refractive errors of eye? How it can be corrected?	4	10	6
4. Explain with a diagram the knee joint.	4	10	6
5. Explain various phases of ECG.	4	10	6
6. Name the hormones of adrenal gland. Add note on Addison's disease.	4	10	6
7. Discuss the digestion and absorption of proteins.	4	10	6
8. Explain Oogenesis.	4	10	6
9. Write the physiological functions of sympathetic system.	4	10	6
10. Draw a neat labeled diagram of human brain structure.	4	10	6

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2019

September 2009

[KV 802]

Sub. Code: 3802

**DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION**

(Regulations 2008 - 2009)

(Candidates admitted from 2008-2009 onwards)

**FIRST YEAR**

**Paper II – PHARMACEUTICS**

*Q.P. Code : 383802*

**Time : Three hours**

**Maximum : 70 marks**

**Answer All questions**

**(2 x 20 = 40)**

**I. Essay Questions :**

1. Define prescription. Write in detail about the various parts and handling of prescriptions.
2. Classify powders. Give example for each type of powder. Mention the advantages and disadvantages of powders.

**(6 x 5 = 30)**

**II. Write Short Notes :**

1. Gargles and mouthwash.
2. Stability and evaluation of emulsions.
3. Methods of preparation of spirits.
4. Sutures and ligatures.
5. Lotions and liniments.
6. Calculation of children doses.

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2019



March 2010

Sub. Code: 3802

[KW 802]

**DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION**

(Regulations 2008 - 2009)

(Candidates admitted from 2008-2009 onwards)

**FIRST YEAR**

**Paper II – PHARMACEUTICS**

**Q.P. Code : 383802**

**Maximum : 70 marks**

**Time : Three hours**

**Answer All questions**

**(2 x 20 = 40)**

**I. Essay Questions :**

1. Write the historical background and development of pharmacy and pharmaceutical industry.
2. Define posology. Write the methods of calculation of children and infant doses. Write the factors affecting dose selection.

**(6 x 5 = 30)**

**II. Write Short Notes :**

1. Suspensions and suspending agents.
2. Throat paints.
3. Methods of preparation of suppositories
4. Classify and identification of types of emulsion.
5. Surgical dressings.
6. Physical and chemical incompatibility

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2019

September 2010

[KX 802]

Sub. Code: 3802

**DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION**

(Regulations 2008 - 2009)

(Candidates admitted from 2008-2009 onwards)

**FIRST YEAR**

**Paper II – PHARMACEUTICS**

*Q.P. Code : 383802*

**Time : Three hours**

**Maximum : 70 marks**

**Answer All questions**

**I. Essay Questions :**

**(2 x 20 = 40)**

1. Classify Suppository bases. What are the characteristics of an ideal base? Give a detailed method of preparation.
2. Define Emulsion. Classify Emulsifying agents and Explain in detail.

**II. Write Short Notes :**

**(6 x 5 = 30)**

1. Write about the formulation criteria for effervescent granules.
2. Write about the preparation of calamine lotion.
3. What is therapeutic incompatibility? How do you overcome it?
4. Classify medicated bandages and its uses.
5. How much water should be mixed with 6000 ml of 40% (v/v) alcohol to make 20% (v/v) alcohol?
6. Give a short note on preparation of spirits.

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2019

September 2010

[KX 802]

Sub. Code: 3802

**DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION**

(Regulations 2008 - 2009)

(Candidates admitted from 2008-2009 onwards)

**FIRST YEAR**

**Paper II – PHARMACEUTICS**

*Q.P. Code : 383802*

Time : Three hours

Maximum : 70 marks

Answer All questions

(2 x 20 = 40)

**I. Essay Questions :**

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2. Define Emulsion. Classify Emulsifying agents and Explain in detail.

(6 x 5 = 30)

**II. Write Short Notes :**

1. Write about the formulation criteria for effervescent granules.
2. Write about the preparation of calamine lotion.
3. What is therapeutic incompatibility? How do you overcome it?
4. Classify medicated bandages and its uses.
5. How much water should be mixed with 6000 ml of 40% (v/v) alcohol to make 20% (v/v) alcohol?
6. Give a short note on preparation of spirits.

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2019

May 2011

[KY 802]

Sub. Code: 3802

**DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION**

(Regulations 2008 - 2009)

(Candidates admitted from 2008-2009 onwards)

**FIRST YEAR**

**PAPER II – PHARMACEUTICS**

*Q.P. Code : 383802*

**Time : Three hours**

**Maximum : 70 marks**

**Answer All questions**

**(2 x 20 = 40)**

**I. Essay Questions :**

1. Define and classify monophasic liquid dosage forms.  
Discuss the various adjuvant used in the formulation of oral liquid dosage forms.
2. Define incompatibility and classify them with suitable example.  
Discuss physical incompatibility and therapeutic incompatibility with the help of suitable example.

**(6 x 5 = 30)**

**II. Write Short Notes :**

1. Discuss different factors affecting fixation of dose of a drug.
2. Convert 40% v/v alcohol into proof strength.
3. Describe the identification tests for emulsion.
4. Displacement value and its importance.
5. Soxhlet extraction process.
6. Differentiate between the procedures followed in the preparation of tinctures from organized and unorganized drugs.

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2019

October 2011

[KZ 802]

Sub. Code: 3802

DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION

FIRST YEAR

PAPER II – PHARMACEUTICS

Q.P. Code : 383802

Time : 3 hours  
(180 Min)

Maximum : 100 marks

Answer ALL questions in the same order.

I. Elaborate on :

- |  | Pages<br>(Max.) | Time<br>(Max.) | Marks<br>(Max.) |
|--|-----------------|----------------|-----------------|
| 1. Discuss about posology. Explain about the factors affecting the dose and action of drugs with examples. | 17              | 40 min.        | 20              |
| 2. Explain in detail about suppository bases with examples.  | 17              | 40 min.        | 20              |

II. Write notes on :

- |   |   |         |   |
|---|---|---------|---|
| 1. a) Give the Latin terms for the following<br>1. Food 2. Twice a day 3. apply   |   |         |   |
| b) Give the English meaning for the following<br>1. Pulvis 2. Recepte 3. Solve  | 4 | 10 min. | 6 |
| 2. Explain about soxhlation?  | 4 | 10 min. | 6 |
| 3. What are colouring agents? Explain them with example   | 4 | 10 min. | 6 |
| 4. What are advantages and disadvantages of suppositories?  | 4 | 10 min. | 6 |
| 5. What is the percentage of zinc oxide in an ointment prepared by mixing 200 g of 10% ointment, 50 g of 20% ointment and 100 g of 5 % ointment?  | 4 | 10 min. | 6 |
| 6. What are the ingredients used in powder formulation?   | 4 | 10 min. | 6 |
| 7. Rx<br>a) Atropine sulphate 0.006<br>Phenobarbital 0.015<br>Aspirin 0.3<br>Sig: One capsule t.i.d<br>Find out the incompatibility problem in the above prescription and the steps to correct it | 4 | 10 min. | 6 |
| b) If 1500g solution containing 75g of a drug substance what is the percentage strength (w/w) of the solution   |   |         |   |
| 8. What is effervescent powder and explain this with example.   | 4 | 10 min. | 6 |
| 9. Explain in brief about surgical sutures.   | 4 | 10 min. | 6 |
| 10. Write about the formulation of suspensions.   | 4 | 10 min. | 6 |

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[LA 802]

April 2012

Sub. Code: 3802

DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION

FIRST YEAR

PAPER II – PHARMACEUTICS

Q.P. Code : 383802

Maximum : 100 marks

Time : 3 hours  
(180 Min)

Answer ALL questions in the same order.

I. Elaborate on :

Pages  
(Max.)

Time  
(Max.)

Marks  
(Max.)

- |   |    |    |    |
|---|----|----|----|
| 1. (a) Define prescription. Explain the various parts of prescription.  |    |    |    |
| (b) Write the historical background and development of pharmacy   | 17 | 40 | 20 |
| 2. Define 'Surgical dressings'. Write the ideal characteristics of surgical dressings and explain about bandages. | 17 | 40 | 20 |

II. Write notes on :

- |  |   |    |   |
|--|---|----|---|
| 1. What are the various factors that influence done?<br>Explain with examples.     | 4 | 10 | 6 |
| 2. Write a short note on sutures and sutures materials.                            | 4 | 10 | 6 |
| 3. Identification test available for the types of emulsion.                        | 4 | 10 | 6 |
| 4. Pharmaceutical Powders.   | 4 | 10 | 6 |
| 5. Define and differentiate lotions and liniments.                                 | 4 | 10 | 6 |
| 6. Suppository Bases.  | 4 | 10 | 6 |
| 7. Convert 70% of Alcohol to proof spirit.   | 4 | 10 | 6 |
| 8. Discuss about suspending agent  | 4 | 10 | 6 |
| 9. Soxhlet extraction process  | 4 | 10 | 6 |
| 10. Write the various adjuvant used in the formulation of oral liquid dosage forms | 4 | 10 | 6 |

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2019

September 2009

[KV 803]

Sub. Code: 3803

**DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION**

(Regulations 2008 - 2009)

(Candidates admitted from 2008-2009 onwards)

**FIRST YEAR**

**Paper III – MEDICINAL BIOCHEMISTRY**

*Q.P. Code : 383803*

**Time : Three hours**

**Maximum : 70 marks**

**Answer All questions**

**I. Essay Questions :**

**(2 x 20 = 40)**

1. a) Define and classify enzymes. Discuss the various factors affecting enzyme activity.
- b) Explain Glycolysis with its energetics.
2. a) What are ketone bodies. Write in detail about Ketogenesis.
- b) Discuss in detail about radioimmuno assay and enzyme linked immunosorbent assay.

**II. Write Short Notes :**

**(6 x 5 = 30)**

1. Oxidative phosphorylation.
2. Urea – cycle.
3. Replication.
4. Vanden – Berg reaction.
5. Lipoproteins.
6. Urine concentration tests.

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2019

March 2010

[KW 803]

Sub. Code: 3803

**DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION**

(Regulations 2008 - 2009)

(Candidates admitted from 2008-2009 onwards)

**FIRST YEAR**

**Paper III – MEDICINAL BIOCHEMISTRY**

*Q.P. Code : 383803*

**Time : Three hours**

**Maximum : 70 marks**

**Answer All questions**

**(2 x 20 = 40)**

**I. Essay Questions :**

1. a) Explain TCA cycle in detail with its energetics.  
b) Discuss the  $\beta$  – oxidation of saturated fatty acids.
2. a) Write the biosynthesis of pyrimidine nucleotides.  
b) Enumerate the various liver function test and discuss the tests for serum bilirubin and urine bilirubin.

**(6 x 5 = 30)**

**II. Write Short Notes :**

1. Transport across cell membranes.
2. Co enzymes.
3. GTT.
4. Various components of electron transport chain.
5. Protein biosynthesis.
6. Jaundice.

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2019



September 2010

[KX 803]

Sub. Code: 3803

**DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION**

(Regulations 2008 - 2009)

(Candidates admitted from 2008-2009 onwards)

**FIRST YEAR**

**Paper III – MEDICINAL BIOCHEMISTRY**

*Q.P. Code : 383803*

**Time : Three hours**

**Maximum : 70 marks**

**Answer All questions**

**(2 x 20 = 40)**

**I. Essay Questions :**

1. Describe the reaction, regulation and metabolic significance of citric acid cycle.
2. Discuss in detail about the metabolism of Cholesterol.

**(6 x 5 = 30)**

**II. Write Short Notes :**

1. Cyclic AMP and their biological significance.
2. Anaerobic dehydrogenases involved in biological oxidation.
3. Therapeutic and diagnostic applications of Coenzyme A.
4. Metabolic disorders of Amino acids.
5. DNA replication.
6. Kidney Function Tests.

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2019

JKY 8031

May 2011

Sub. Code: 3803

**DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION**

(Regulations 2008 - 2009)

(Candidates admitted from 2008-2009 onwards)

FIRST YEAR

**PAPER III – MEDICINAL BIOCHEMISTRY**

*Q.P. Code : 383803*

Maximum : 70 marks

Time : Three hours

Answer All questions

(2 x 20 = 40)

**I. Essay Questions :**

1. a) Define enzymes. Classify them and describe the factors affecting enzyme activity. (14)
  - b) What are coenzymes? Describe the biochemical role of niacin and pyridoxine. (14)
  2. a) Define lipids and Explain beta oxidation of fatty acids with its energetics. (14)
  - b) Atherosclerosis. (6)
- (6 x 5 = 30)

**II. Write Short Notes :**

1. Explain in detail about ATP and its biological significance.
2. Write a brief note on metabolic disorders of carbohydrates.
3. Radio immuno assay.
4. Hyperbilirubinemia.
5. Lipoproteins - Types and functions.
6. HMP Shunt- A brief account.

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2019

October 2011

Sub. Code: 3803

[KZ 803]

DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION

FIRST YEAR

PAPER III – MEDICINAL BIOCHEMISTRY

Q.P. Code : 383803

Maximum : 100 marks

Time : 3 hours  
(180 Min)

Answer ALL questions in the same order.

I. Elaborate on :

1. a. Reactions of Oxidative Phosphorylation  
b. Components of respiratory chain  
c. Chemiosmotic theory.

17 40 min. 20

2. a. Reactions of TCA  
b. Energetics of TCA  
c. Reactions of  $\beta$  Oxidation

17 40 min. 20

II. Write notes on :

1. Active transport.
2. Structure of cholesterol and its functions.
3. Determination of sodium in serum.
4. Transamination.
5. Porphyrins.
6. Purine catabolism.
7. Maple syrup urine and alkatonuria.
8. ELISA.
9. Vandenburg.
10. Creatinine clearance test.

4 10 min. 6

4 10 min. 6

4 10 min. 6

4 10 min. 6

4 10 min. 6

4 10 min. 6

4 10 min. 6

4 10 min. 6

4 10 min. 6

4 10 min. 6



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[LA 803]

April 2012

Sub. Code: 3803

DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION

FIRST YEAR

PAPER III – MEDICINAL BIOCHEMISTRY

Q.P. Code : 383803

Time : 3 hours  
(180 Min)

Maximum : 100 marks

I. Elaborate on :

Answer ALL questions in the same order.

	Pages (Max.)	Time (Max.)	Marks (Max.)
1. Write a detailed note on the Urea cycle with reactions. Mention its major metabolic disorders.	17	40	20
2. Explain the semi conservative replication of a double stranded DNA molecule. Add a note on its repair mechanism.	17	40	20
II. Write notes on :			
1. Explain the Van den Bergh reaction.	4	10	6
2. Discuss the biological significance of cyclic – adenosine monophosphate (c-AMP).	4	10	6
3. Write a note on Atherosclerosis.	4	10	6
4. Explain the mechanism of Transamination.	4	10	6
5. Explain the biochemical organisation of a cell.	4	10	6
6. Enumerate the IUB classification of enzymes with example.	4	10	6
7. Explain the Galactose tolerance test.	4	10	6
8. What are the various types of Porphyrrias.	4	10	6
9. Write a note on Urine analysis.	4	10	6
10. Write a note on Urea clearance.	4	10	6



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20 19

September 2009

[KV 804]

Sub. Code: 3804

DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION

(Regulations 2008 - 2009)

(Candidates admitted from 2008-2009 onwards)

FIRST YEAR

Paper IV – PHARMACEUTICAL ORGANIC CHEMISTRY

Q.P. Code : 383804

Maximum : 70 marks

Time : Three hours

Answer All questions

(2 x 20 = 40)

I. Essay Questions :

1. a) Explain the nucleophilic substitution reactions with suitable examples.  
b) Add a note on mechanisms and kinetics involved in  $SN^1$  and  $SN^2$  reactions.
2. Explain the mechanisms of following name reactions.
  - a) Benzoin condensation.
  - b) Wittig reaction.
  - c) Cannizaro reaction.
  - d) Kolh's reaction.

(6 x 5 = 30)

II. Write Short Notes :

1. Preparation, tests for purity, assay and uses of aspirin.
2. Explain the reaction mechanisms of sandmeyer's reduction with suitable examples.
3. Explain the bimolecular displacement mechanism for nucleophilic aromatic substitution with suitable examples.
4. Explain the conversion of acid to acid chloride and acid to esters with suitable examples.
5. Describe the effect of substituent groups on aromatic nucleus.
6. Outline any two methods of preparation of ketones.

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2019

[KW 804]

March 2010

Sub. Code: 3804

**DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION**

(Regulations 2008 - 2009)

(Candidates admitted from 2008-2009 onwards)

**FIRST YEAR**

**Paper IV – PHARMACEUTICAL ORGANIC CHEMISTRY**

*Q.P. Code : 383804*

**Time : Three hours**

**Maximum : 70 marks**

**Answer All questions**

**(2 x 20 = 40)**

**I. Essay Questions :**

1. Explain the preparation of alcohol with special reference to gniguard synthesis, reduction of carbonyl compounds, acids and esters.
2. Explain the mechanisms of following name reactions.
  - a) Claisen condensation.
  - b) Knorvenagel reaction.
  - c) Michael addition.
  - d) Perkin condensation.

**(6 x 5 = 30)**

**II. Write Short Notes :**

1. Explain fries rearrangement and hofmann rearrangement.
2. Preparation, tests for purity, assay and uses of methyl salicylate.
3. Explain the diazotization and coupling reactions of amioes.
4. Explain the 1,2 addition and 1,4 addition reactions of conjugated dienes.
5. Outline the important chemical properties of aldehydes.
6. What are cycloalkanes? Give egs. How the cycloalkanes are prepared?

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2019

September 2010

[KX 804]

Sub. Code: 3804

DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION

(Regulations 2008 - 2009)

(Candidates admitted from 2008-2009 onwards)

FIRST YEAR

Paper IV – PHARMACEUTICAL ORGANIC CHEMISTRY

Q.P. Code : 383804

Time : Three hours

Maximum : 70 marks

Answer All questions

I. Essay Questions :

(2 x 20 = 40)

1. a) Write the Mechanism, reactivity, orientation of aromatic electrophilic substitution reaction with suitable examples.
- b) Explain briefly about hybridization.
2. a) Why are aldehydes more reactive than ketone? Give an account of the nucleophilic additions of aldehyde with the help of general mechanism.
- b) What are Organometallic compounds? How they are prepared? Give its synthetic applications.

II. Write Short Notes :

(6 x 5 = 30)

1. Give the general methods of preparations of alcohols with examples?  
How will you differentiate between 1°, 2°, 3° alcohols?
2. Explain the following reactions: –  
i) Cannizaro reaction ii) Diel's Alder reaction.
3. Give the preparations of Ethers by Williamson's synthesis.
4. Add a note on Isomerism.
5. Explain Bayer's Strain Theory.
6. Add a note on Free Radicals.



2019

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May 2011

[KY 804]

Sub. Code: 3804

**DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION**  
(Regulations 2008 - 2009)

(Candidates admitted from 2008-2009 onwards)

FIRST YEAR

**PAPER IV – PHARMACEUTICAL ORGANIC CHEMISTRY**

Time : Three hours

Q.P. Code : 383804

Maximum : 70 marks

Answer All questions

I. Essay Questions :

(2 x 20 = 40)

1. Describe the two mechanisms of aliphatic nucleophilic substitution reactions. Compare and contrast these two reactions in detail.
2. Describe in detail free radical halogenation of methane explaining the thermodynamics of the reaction with respect to the halogens: F, Cl, Br, & I.

II. Write Short Notes :

(6 x 5 = 30)

1. Preparation, tests for purity, assay, and uses of Aspirin.
2. Aldol condensation and cyanohydrin reaction of aldehydes.
3. Explain Sandmeyer's reaction with suitable examples.
4. Two methods of preparations of aldehydes.
5. Explain Schotten-Bauman reaction.
6. Write a note on the advantages of Friedal Crafts Acylation over Alkylation.



2019

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October 2011

[KZ 804]

Sub. Code: 3804

DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION

FIRST YEAR

PAPER IV – PHARMACEUTICAL ORGANIC CHEMISTRY

Q.P. Code : 383804

Maximum : 100 marks

Time : 3 hours  
(180 Min)

Answer ALL questions in the same order.

I. Elaborate on :

Pages (Max.) Time (Max.) Marks (Max.)

1. (a) Define Electrophilic aromatic substitution reaction. Explain the mechanism of nitration, sulphonation, halogenation and Friedel craft's alkylation reactions with examples.

17 40 min. 20

(b) Write a note on activating and deactivating O, P, and M directing groups.

2. (a) Compare aliphatic nucleophilic bimolecular and unimolecular reaction. ( $SN_2$  vs  $SN_1$ ).

17 40 min. 20

(b) Explain the mechanism and kinetics of 1, 2 Elimination reactions. ( $E_2$  and  $E_1$ ).

II. Write notes on :

1. Write a note on Markownikoff's rule and Peroxide effect.

4 10 min. 6

2. Explain about electrophilic addition of conjugated dienes. (1, 2 versus 1, 4 addition).

4 10 min. 6

3. Write about the mechanism of Cannizaro's reaction with example.

4 10 min. 6

4. Define polarity of molecules and intermolecular forces with examples.

4 10 min. 6

5. Explain Bayer's strain theory with its merits and limitations.

4 10 min. 6

6. Explain Kolbe's reaction and Reimer -Tiemann's reaction.

4 10 min. 6

7. Write a note on allyl radical as a resonance hybrid.

4 10 min. 6

8. Write a note on oxidation-reduction reactions with examples.

4 10 min. 6

9. Give an example for free radical halogenation of alkenes with respect to carbon - carbon double bond acting as substituent.

4 10 min. 6

10. Define orientation, reactivity and stability.

4 10 min. 6

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[LA 804]

APRIL 2012  
DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION  
FIRST YEAR

Sub. Code: 3804

PAPER IV – PHARMACEUTICAL ORGANIC CHEMISTRY

Q.P. Code : 383804

Time : 3 hours  
(180 Min)

Maximum : 100 marks

I. Elaborate on : Answer ALL questions in the same order.

Pages Time Marks  
(Max.) (Max.) (Max.)

- |  |    |    |    |
|--|----|----|----|
| 1. (a) Elaborate the mechanism , kinetic and stereochemistry of aliphatic nucleophilic Substitution (SN <sup>1</sup> and SN <sup>2</sup> ) reaction. |    |    |    |
| (b) Explain about the role of phase transfer catalysis in substitution reaction.   | 17 | 40 | 20 |
| 2. (a) Illustrate about the Kinetic, mechanism and isotopic effect of E1 and E2 reactions.   |    |    |    |
| (b) Add a note on dehydration of acid catalysis.   | 17 | 40 | 20 |

II. Write notes on :

- |   |   |    |   |
|---|---|----|---|
| 1. Give an account of acid and base on the basis of Lewis theories.                   | 4 | 10 | 6 |
| 2. Preparation, test for purity, assay and uses of vanillin.                          | 4 | 10 | 6 |
| 3. Explain the mechanism of halogenations of alkanes. Give the evidence for the same. | 4 | 10 | 6 |
| 4. Outline any two methods of conversion of acids to acid chloride and amide.         | 4 | 10 | 6 |
| 5. Discuss the mechanism and synthetic uses of benzoin condensation reaction.         | 4 | 10 | 6 |
| 6. Describe the preparation methods for esters.                                       | 4 | 10 | 6 |
| 7. Outline briefly about Bayer strain theory.   | 4 | 10 | 6 |
| 8. Discuss the mechanism and synthetic uses of witting reaction.                      | 4 | 10 | 6 |
| 9. Write a note on Diels alder reaction.  | 4 | 10 | 6 |
| 10. Preparation, test for purity, assay and uses of Aspirin.                          | 4 | 10 | 6 |

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2019

September 2009

[KV 805]

Sub. Code: 3805

**DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION**

(Regulations 2008 - 2009)

(Candidates admitted from 2008-2009 onwards)

**FIRST YEAR**

**Paper V – PHARMACEUTICAL INORGANIC CHEMISTRY**

*Q.P. Code : 383805*

**Time : Three hours**

**Maximum : 70 marks**

**Answer All questions**

**I. Essay Questions :**

**(2 x 20 = 40)**

1. a) Describe the various sources of impurities in pharmaceutical substances.  
b) What is cerimetry? Explain its advantage over other oxidizing agents.  
c) List out various volumetric methods and explain back titration with example.
2. a) What is complexometric titrations. Explain its principle with suitable examples.  
b) Explain the various theories of indicators.  
c) Describe the principle and procedure involved in the limit test for Iron.

**(6 x 5 = 30)**

**II. Write Short Notes :**

1. What are antacid? Classify them with examples. Give the method of preparation of any one of them.
2. Explain the role of fluorides as anti caries agent.
3. Define the following terms: a) Cathartics b) Disinfectant.  
c) Aantiseptic d) Astringent e) Dentritrices.
4. Write the composition of Ringer's solution. Explain its importance.
5. Describe the principle involved in modified volhard's method with example.
6. Write short notes on pharmaceutical aid.

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2019

March 2010

[KW 805]

Sub. Code: 3805

**DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION**

(Regulations 2008 - 2009)

(Candidates admitted from 2008-2009 onwards)

**FIRST YEAR**

**Paper V – PHARMACEUTICAL INORGANIC CHEMISTRY**

Time : Three hours

Q.P. Code : 383805

Maximum : 70 marks

**I. Essay Questions :**

Answer All questions

(2 x 20 = 40)

1. a) Describe the principle and procedure involved in conducting limit test for arsenic with neat diagram.
- b) List out various volumetric methods. Explain redox titration with suitable example.
- c) What are cathartics? Give examples. Give the method of preparation of any one of them.
2. a) What is gravimetric method? Explain the various steps involved in it with example.
- b) What is non aqueous titration? Explain its principle with suitable example.
- c) What are antimicrobials? List out various official preparation. Explain the assay of any one of them.

**II. Write Short Notes :**

(6 x 5 = 30)

1. Write any one method to measure radio activity.
2. Write short notes on masking and demasking agents.
3. What are dentritrices? List out the official compounds.
4. List out various official compounds of iodine. Give the principle involved in the assay of weak iodine solution.
5. Give the principle and reaction involved in the preparation of boric acid and magnesium sulphate.
6. Write a note pharmaceutical importance of medicinal gases.

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2019

[KX 805]

September 2010

Sub. Code: 3805

**DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION**  
(Regulations 2008 - 2009)

(Candidates admitted from 2008-2009 onwards)

**FIRST YEAR**

**Paper V – PHARMACEUTICAL INORGANIC CHEMISTRY**

*Q.P. Code : 383805*

**Time : Three hours**

**Maximum : 70 marks**

**I. Essay Questions :**

**Answer All questions**

**(2 x 20 = 40)**

1. a) Write in detail the preparation, properties assay, identification test and uses of oxygen.
- b) Write the preparation, acid consuming capacity and assay of aluminium hydroxide gel.
2. a) Write the principle involved in the non aqueous titration.
- b) Preparation and Standardisation of perchloric acid.
- c) Explain the experimental techniques of gravimetric analysis.

**II. Write Short Notes :**

**(6 x 5 = 30)**

1. Explain the theory of Indicators.
2. Write a note on the preparation assay and uses of Boric acid.
3. Write the Medicinal uses of the following compounds
  - a) Potassium Bromide.
  - b) Sodium Nitrate.
  - c) Ferrous Sulphate.
  - d) Carbon dioxide.
  - e) Hydrogen Peroxide.
4. Define error and write its types.
5. Write about the Pm indicator used in complexometric titration.
6. Write any five radio pharmaceuticals and their uses.



2019

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May 2011

[KY 805]

Sub. Code: 3805

**DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION**  
(Regulations 2008 - 2009)

(Candidates admitted from 2008-2009 onwards)

**FIRST YEAR**

**PAPER V – PHARMACEUTICAL INORGANIC CHEMISTRY**

*Q.P. Code : 383805*

**Time : Three hours**

**Maximum : 70 marks**

**Answer All questions**

**I. Essay Questions :**

**(2 x 20 = 40)**

1. a) Describe the sources of impurities in pharmaceutical substances.  
b) Explain the principle and procedure involved in the limit test for arsenic with neat labeled diagram of the apparatus.
2. a) What are the various errors that occurs during analysis?  
b) Write briefly about Complexometric titrations.

**II. Write Short Notes :**

**(6 x 5 = 30)**

1. Explain the principle of Redox titrations with suitable examples.
2. Give the preparation, assay and uses of calcium gluconate.
3. Explain the theory of precipitation titrations.
4. What are antidotes? Explain about any one antidote used for cyanide poisoning.
5. Write a note on various pharmaceutical aids with examples.
6. Clinical applications of Radio-Pharmaceuticals.

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2019

[KZ 805]

October 2011

DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION  
FIRST YEAR

Sub. Code: 3805

PAPER V – PHARMACEUTICAL INORGANIC CHEMISTRY

Time : 3 hours  
(180 Min)

Q.P. Code : 383805

Maximum : 100 marks

Answer ALL questions in the same order.

I. Elaborate on :

	Pages (Max.)	Time (Max.)	Marks (Max.)
1. (a) What is gravimetric analysis? Discuss the steps involved in gravimetric analysis. (12)	17	40 min.	20
(b) Discuss about organic precipitants. (8)			
2. (a) What are antacids? Give the classification of antacids. (3)			
(b) What are the qualities of an ideal antacid? (3)	17	40 min.	20
(c) Give the preparation, identification test, assay and medicinal uses of aluminium hydroxide gel and magnesium carbonate. (12)			

II. Write notes on :

1. Define acidifier. Discuss the preparation, assay and medicinal uses of ammonium chloride.	4	10 min.	6
2. Write notes on non-aqueous solvents.	4	10 min.	6
3. Explain the role of fluorides as anticaries agents.	4	10 min.	6
4. Write a note on respiratory stimulants with an example.	4	10 min.	6
5. Explain the physiological role of Iron and copper.	4	10 min.	6
6. What are cathartics? Give an example.	4	10 min.	6
7. How do you minimize errors in pharmaceutical analysis?	4	10 min.	6
8. Discuss oral rehydration therapy.	4	10 min.	6
9. Describe the principle involved in Modified Volhard's method with an example.	4	10 min.	6
10. What are the fundamentals of volumetric analysis?	4	10 min.	6

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2019

**DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION**

(Regulations 2008 - 2009)

(Candidates admitted from 2008-2009 onwards)

**FIRST YEAR****Paper VI – REMEDIAL MATHEMATICS****Q.P. Code : 383806****Time : Three hours****Answer All questions****Maximum : 70 marks****(2X 20 = 40)****I. Essay Questions :**

1. a) Define matrix,

$$\text{Given } A = \begin{pmatrix} 1 & 2 \\ 2 & 1 \end{pmatrix} \quad B = \begin{pmatrix} 2 & 1 \\ 2 & 4 \end{pmatrix} \quad C = \begin{pmatrix} 1 & 0 \\ 0 & -1 \end{pmatrix}$$

b) Define Leibnitz's linear differential equation and solve  
 $X \log X \quad \frac{DY}{DX} + Y = 2 \log X$ 

$$\frac{DX}{DX} \quad X+Y-2$$

2. Find the differential coefficients of the following function.

$$\text{a) } \frac{X + \sin X}{X + \cos X}$$

$$\text{b) } \sin^m x \cos^n x$$

**(6 X 5 = 30)****II. Write Short Notes :**

1. Define column matrix, determinants and multiplication of two matrices.

2. Find the equation of two straight lines through (1-1) inclined at  $45^\circ$  at the line  
 $2X-5Y+7=0$ 3. Differentiate the function  $6X-4Y=12$ , to obtain  $DY/DX$ .

$$\text{4. } \frac{L + 5X^2 - 4}{X \rightarrow 1} \quad \frac{3X^2 + 1}{X \rightarrow 1}$$

5. What is fundamental formulae of integration and evaluate the integral

$$\int_a^b \frac{\log x}{x} dx = ?$$

6. Draw graph of function  $Y = ax^2 + bx + c$ , where a, b and c are constants and  $a \neq 0$ .

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2019



IKV 8061

March 2010

Sub. Code: 3806

**DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION**  
(Regulations 2008 - 2009)

(Candidates admitted from 2008-2009 onwards)  
FIRST YEAR

**Paper VI - REMEDIAL MATHEMATICS**

*Q.P. Code : 383806*

Maximum : 70 marks

Time : Three hours

Answer All questions

(2X 20 = 40)

**I. Essay Questions :**

1. a) Define matrix,  
$$A = \begin{pmatrix} 2 & 5 & 9 \\ 6 & 1 & 3 \\ -2 & 2 & -3 \end{pmatrix} \quad B = \begin{pmatrix} -2 & -2 & -4 \\ 0 & 4 & 6 \\ 1 & 3 & 5 \end{pmatrix}$$

b) Show that  
$$\begin{pmatrix} a+b & b+c & c+a \\ b+c & c+a & a+b \\ c+a & a+b & b+c \end{pmatrix} = 2 \begin{pmatrix} a & b & c \\ b & c & a \\ c & a & b \end{pmatrix}$$

2. a) If  $x^2y + xy^2 = 25$  verify  
$$\frac{dy}{dx} \cdot \frac{dx}{dy} = 1.$$

b) If  $y = x^2 + x \log x$ , prove that,  
$$\frac{dy}{dx} = x^2 (1 + \log x) x^{\log x - 1} (2 \log x).$$
  
(6 X 5 = 30)

**II. Write Short Notes :**

1. Give the methods for evaluation of limits.
2. Define and explain about scalar matrix.
3. Find  $dy/dx$  of the function :  $x^2 + 5x^2y + yx = 5$ .
4. Draw graph of function  $Y = 2x^2$ .
5. Define laplace trans form and solve  $\sin^2$  (at)<sup>3</sup>.
6. L+  $x^2 + 5x + 6$   
----- solve.  
 $x \rightarrow 2$   $x + 2$

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[KX 806]

September 2010

Sub. Code: 3806

DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION  
(Regulations 2008 - 2009)

(Candidates admitted from 2008-2009 onwards)  
FIRST YEAR

Paper VI - REMEDICAL MATHEMATICS

Time : Three hours

Q.P. Code : 383806

Maximum : 70 marks

I. Essay Questions :

Answer All questions

(2X 20 = 40)

1. (a) For the Square Matrix  $A = \begin{pmatrix} 1 & 1 & 1 \\ 1 & 2 & -3 \\ -2 & -1 & 3 \end{pmatrix}$

Prove that  $A (\text{adj } A) = |A| I$ .

(b) If  $A = \begin{pmatrix} 2 & 3 \\ 4 & 5 \end{pmatrix}$ . Show that  $A^2 - FA - 2I = 0$

2. (a) Find the equation of the circle passing through the points (1, 1), (2, -1) & (3, 2).

(b) If  $x = a \cos \theta + b \sin \theta$  and  $y = a \sin \theta - b \cos \theta$ . Prove that  $x^2 + y^2 = a^2 + b^2$ .

II. Write Short Notes :

(6 X 5 = 30)

1. Find the ad joint of  $\begin{pmatrix} 3 & 1 & 2 \\ 2 & 2 & 5 \\ 4 & 1 & 0 \end{pmatrix}$

2. Find the equation of the parabola whole focus if (1, 2) and directive is  $x + y - 2 = 0$ .

3. Integrate  $x^2 e^x dx$ .

4. Verify the Euler's theorem.

if  $u = x^3 + y^3 + 3x^2y + 3xy^2$ .

5. Solve  $(D^2 - 6D + a)y = e^{3x}$ .

6. Find the area of the triangle whole vertices are (4, 7), (2, -3) and (-1, 3).



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JKY/8061

May 2011

DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION  
Sub. Code: 3806

(Regulations 2008 - 2009)  
(Candidates admitted from 2008-2009 onwards)

FIRST YEAR

PAPER VI - REMEDICAL MATHEMATICS

Q.P. Code : 383806

Time : Three hours

Maximum : 70 marks

I. Essay Questions :

Answer All questions

(2X 20 = 40)

1.a. Find the Inverse of

$$\begin{vmatrix} 1 & -1 & 2 \\ -3 & 0 & 4 \\ 1 & 2 & 5 \end{vmatrix}$$

b. If  $A = \begin{vmatrix} 1 & 0 & -2 \\ 2 & 1 & 3 \\ 1 & -1 & 0 \end{vmatrix}$ ,  $B = \begin{vmatrix} 3 & 1 & 0 \\ -2 & 0 & 3 \\ 2 & 0 & 1 \end{vmatrix}$

Find (i)  $AB - BA$  (ii)  $(A+B)(A-B)$

2.a. Integrate  $\frac{3x+1}{(x-1)^2(x+3)}$  dx

b. If  $\cos\alpha = -12/13$  and  $\cos\beta = 24/7$ , where  $\alpha$  lies in the second quadrant and  $\beta$  lies in fourth quadrant, find the values of

- (i)  $\sin(\alpha+\beta)$
- (ii)  $\cos(\alpha+\beta)$
- (iii)  $\tan(\alpha+\beta)$



(PTO)

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II. Write Short Notes :

(6 X 5 = 30)

1. Define Square matrix and Diagonal matrix with examples.

2. Differentiate:  $\frac{(x+3)(x-2)}{(x-1)(x-3)}$

3. Integrate  $\int_1^2 (x^2+3x+1)dx$

4. Prove that,  
 $\tan 13A - \tan 9A - \tan 4A = (\tan 13A \tan 9A \tan 4A)$

5. Using Euler's theorem, if  $u = \log (\tan x + \tan y + \tan z)$ , prove that  $\sum \sin 2x (\partial u / \partial x) = 2$

6. Find the area of the triangle whose vertices are:  
i) (3,8), (-4,2), and (5,-1)

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2019

October 2011

[KZ 806]

DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION  
FIRST YEAR

Sub. Code: 3806

PAPER VI - REMEDIAL MATHEMATICS

Q.P. Code : 383806

Time : 3 hours  
(180 Min)

Maximum : 100 marks

I. Elaborate on :

Answer ALL questions in the same order.

1. Find the inverse of  $\begin{vmatrix} 1 & -1 & 2 \\ -3 & 0 & 4 \\ 1 & 2 & 5 \end{vmatrix}$

Pages Time Marks  
(Max.) (Max.) (Max.)

17 40 20

2. Solve the differential equation  $(D^2 - 4D + 4)y = 8(x^2 + e^{2x} + \sin 2x)$

17 40 20

II. Write notes on:

1. If  $A = \begin{vmatrix} 2 & -2 & -4 \\ -1 & 3 & 4 \\ 1 & -2 & -3 \end{vmatrix}$

4 10 6

Show that  $A^2 = A$ .

2. Define i) Square matrix, (ii) Diagonal matrix, (iii) Transpose matrix.

4 10 6

3. Prove that  $\tan 13A - \tan 9A - \tan 4A = \tan 13A \tan 9A \tan 4A$

4 10 6

4. Find the distance between the points,

4 10 6

$(\cos \alpha, \sin \alpha)$  and  $(\cos \beta, \sin \beta)$

5. Differentiate :  $\frac{(x+3)(x-2)}{(x-1)(x-3)}$

4 10 6

4 10 6

6. Integrate:  $\int \log x \, dx$

4 10 6

7. Solve:  $(D^2 + D + 1)y = 0$

4 10 6

8. Find laplace transform

$F(t) = e^{2t} + 4t^3 - 2\sin 3t + 3\cos 2t$

4 10 6

9. Evaluate :  $\int_1^2 (x^2 + 3x + 1) dx$

4 10 6

10. Solve  $(D^2 + 6D + 9)y = 0$



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[LA 806]

DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION  
FIRST YEAR  
PAPER VI - REMEDIAL MATHEMATICS

APRIL 2012

Sub. Code: 3806

Time : 3 hours  
(180 Min)

Q.P. Code : 383806

Maximum : 100 marks

Answer ALL questions in the same order.

I. Elaborate on :

Pages (Max.)	Time (Max.)	Marks (Max.)
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1. Integrate  $\int \frac{dx}{X^2+5x+6}$

17 40 20

2. If  $A = \begin{vmatrix} 2 & -1 \\ 4 & 3 \end{vmatrix}$  find  $A^3 - 3A + 2A - 4I$

17 40 20

II. Write notes on:

1. Find the value of a, b, c, d, e that satisfy the matrix relationship

$$\begin{vmatrix} a-1 & b+3 & 3 \\ 2 & 5 & e+2 \end{vmatrix} = \begin{vmatrix} c-2 & -5 & 3 \\ d+4 & -3+c & 2 \end{vmatrix}$$

4 10 6

2. Find the inverse of  $\begin{vmatrix} 3 & -1 \\ -4 & 2 \end{vmatrix}$

4 10 6

3. Prove that:  $\cos 20^\circ \cos 40^\circ \cos 80^\circ = 1/8$

4 10 6

4. Find the area of triangle (3,8), (-4,2), and (5, -1)

4 10 6

5. Find the equation of the line through the points (-1, -2) and (-5, 2)

4 10 6

6. Differentiate  $\sin^2(3x+4)$

4 10 6

7. Differentiate  $\{ax^3+bx^2+cx+d\}$

4 10 6

8. Evaluate

4 10 6

$$\int_0^1 \{x^2 - 3x^{2/3} + (1/x^2)\} dx$$

4 10 6

9. Solve :  $(D^2 + 4D + 13)y = \cos 3x$

4 10 6

10. Find the laplace transforms :  $e^{-3t}(2 \cos 5t - 3 \sin 5t)$

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