

Code No.6375

FACULTY OF PHARMACY

Pharm. D. (6 YDC) I — Year (MaT0' & Backlog) Examination, December 2020

Subject : Pharmaceutics

Time: 2 Hours

Max. Marks: 70

PART- A

Note: Answer any Six questions.

(6x5=30 Marks)

1. What is the difference between infusion and decoction?
2. Write a brief account on effervescent granules.
3. Write the principle involved in the preparation of Soap solution with cresol.
4. Explain the difference between emulsions and suspensions.
5. What will be the dose for a child of 5 years if the adult dose of a drug is 400 mg?
6. Calculate the amount of 95% alcohol required to prepare 400 ml; of 45% alcohol.
7. Define Isotonic solutions. What is its significance?
8. What are collodions?
9. Write the importance of flavours in pharmaceutical formulations.
10. Define incompatibility. What are different types of incompatibilities?

PART- B

Note: Answer any Four questions.

(4x10=40 Marks)

11. Explain the parts of prescription with typical example.
12. Write a note on (a) U.S.P. (b) LP.
13. (a) Write a note on development of pharmacy profession in India.
(b) Explain the different methods of Mixing Powders.
14. (a) Differentiate between Liniments and Lotions.
(b) Classify different dosage forms with example.
15. (a) Write short note on formulation of suspension.
(b) What are the instabilities of emulsions and describe the factors that improve the stability of emulsions?
16. Write in detail about the steps involved in Percolation Process.
17. Write short notes on classification of bases and general methods of preparation of suppositories.
18. (a) Write a note on Medicated bandages.
(b) Explain different physical Incompatibilities.

FACULTY OF PHARMACY

Pharm D (6-YDC) I-Year (Main & Backlog) Examination, December 2020

Subject : Human Anatomy and Physiology

Time: 2 Hours

Max. Marks: 70

PART- A

Note: Answer any Six Questions

(6 x 5=30 Marks)

- 1 Discuss the structure and functions of skin in brief.
- 2 Write briefly about peptic ulcer and duodenal ulcer.
- 3 Explain synovial joints and its movement.
- 4 Explain the anatomical features of the spleen.
- 5 Write a note on testes.
- 6 Mention the functions of the blood.
- 7 What are the various components of reflex arc.
- 8 What are the functions of sympathetic nervous system.
- 9 What are the functions of the various respiratory organs.
- 10 What is the composition of pancreatic juice.

PART- B

Note: Answer any Four Questions

(4 x 10=40 Marks)

- 11 Draw a neat labeled diagram of section of eye. And add a note on physiology of vision.
- 12 Discuss the internal structure of the heart and write in detail about ECG.
- 13 Describe the structure and functions of cerebrum in detail.
- 14 Describe the histology of skeletal muscles and physiology of muscle contraction.
- 15 Define and classify various tissues and write a note on epithelial tissue.
- 16 With the help of neat labeled diagram describe the anatomical features of pituitary gland and enumerate its secretions and mention its functions in detail.
- 17 Discuss the anatomy of gastrointestinal tract and role of GIT and its accessory organs in digestion.
- 18 Draw a neat labeled diagram of urinary system and discuss the physiology of urine formation.

FACULTY OF PHARMACY

Pharm. D. (6 YDC) I – Year (Main & Backlog) Examination, December 2020

Subject: Remedial Mathematics

Time : 2 Hours

Max. Marks: 70

PART-A

Note : Answer any Six questions.

(6x5=30 Marks)

1. If $A = \begin{bmatrix} 1 & 2 \\ -2 & 3 \end{bmatrix}$, $B = \begin{bmatrix} 2 & 1 \\ 2 & 3 \end{bmatrix}$, find AB.

2. Write any two properties of Determinants.

3. Find the centre and the radius of the circle $x^2 + y^2 + 4x - 6y + 4 = 0$.

4. Find vertex and focus of the parabola $y^2 = 4x + 12$.

5. If $y = x^4 + 2e^{2x} + \sin x$, find $\frac{dy}{dx}$

6. Show that $\lim_{x \rightarrow \pi} \frac{\cos x}{\pi - x} = 1$.

7. Find the equation of the straight line passing through (2, 3) and with slope -5.

8. Find centre and radius of the circle given by $x^2 + y^2 + 4x + 6y + 13 = 0$.

9. Evaluate $\int_0^{\pi} (1 + \cos x) dx$.

10. Find $L \{ (t^2 - 2t - 3) e^{2t} \}$.

PART-B

Note : Answer any Four questions.

(4x10=40 Marks)

11. (a) If $A = \begin{bmatrix} 3 & -3 & 4 \\ 2 & -3 & 4 \\ 0 & -1 & 1 \end{bmatrix}$, find A^{-1} .

(b) If $\begin{vmatrix} a & a^2 & a^3 - 1 \\ b & b^2 & b^3 - 1 \\ c & c^2 & c^3 - 1 \end{vmatrix} = 0$, in which a, b, c are different. Show that $abc = 1$.

12. (a) Find the equation of the circle whose centre is (-1, 2) and radius is 3.

(b) Find the equation of the parabola, whose vertex (2, 2) and directrix is $x=6$.

-2-

13. (a) If $r = \theta \sin \theta + \cos \theta$, find $dr/d\theta$.

(b) If $z = \log(x^2 + y^2)$, find $\partial z/\partial x$ and $\partial z/\partial y$.

14. (a) If $u = \cos^{-1}\left(\frac{x+y}{\sqrt{x} + \sqrt{y}}\right)$, prove that $x \frac{\partial u}{\partial x} + y \frac{\partial u}{\partial y} = \frac{1}{2} \cot u$.

(b) Find $\lim_{x \rightarrow 0} \frac{1 - \cos x}{x \sin x}$.

15. (a) Use substitution to evaluate the integral $\int_0^{\pi/6} (1 - \cos 3t) \sin 3t \, dt$.

(b) Solve $\frac{d^3 y}{dx^3} + \frac{d^2 y}{dx^2} - \frac{dy}{dx} - y = 0$.

16. (a) Solve $\frac{dy}{dx} = 4x^3 e^{-y}$, $y(1) = 0$.

(b) Find the general solution of first order linear differential equation $\frac{dy}{dx} + y = \sin x$.

17. (a) Find (i) $L\{(t-2)^2 e^{3t}\}$. (ii) $\{\sinh 2t + \cos h 2t\}$.

(b) Find $L^{-1}\left\{\frac{s+6}{s^2+6s+13}\right\}$.

18. (a) If angles of a triangle are 30° , 60° , 90° , find sides of a triangle.

(b) State Leibnitz theorem for the n^{th} derivative and find the n^{th} derivative of the function $e^{2x}(3x+5)^4$.

Code. No: 6381

FACULTY OF PHARMACY

Pharm D (6-YDC) I-Year (Main & Backlog) Examination, December 2020

Subject : Biology

Time : 2 Hours

Max. Marks: 70

PART-A

Note : Answer any Six questions.

(6x5=30 Marks)

- 1 Yeast
- 2 Lymphocytes
- 3 Pollination
- 4 Metamorphosis
- 5 Sclerenchyma
- 6 Poikilotherms
- 7 Venom of Snake
- 8 Mitochondria
- 9 Ovipary
- 10 Neuron

PART-B

Note : Answer any Four questions.

(4x10=40 Marks)

- 11 Write about Bentham & Hooker's classification of plant kingdom
- 12 a) Describe the anatomy of Dicot stem
b) Describe the TS of leaf
- 13 Write a note on root system & in detail about root modifications.
- 14 Give on account of Glycolysis & Krebscycle
- 15 Explain in detail the respiration in frog
- 16 Describe the light reactions of photosynthesis
- 17 a) What are fungi? Give the pharmaceutical importance of fungi
b) Write the distinguishing general characters of class mammals.
- 18 a) Describe the economic importance & medicinal values of solanaceae plants.
b) Write a note on poisonous animals.

FACULTY OF PHARMACY**Pharm. D. (6 YDC) I – Year (Main & Backlog) Examination, December 2020****Subject: Pharmaceutical Inorganic Chemistry****Time: 2 Hours****Max. Marks: 70****Part – A****Note: Answer any Six questions.****(6x5 = 30 Marks)**

1. Mention the uses of Hydrogen peroxide.
2. What are anti-caries agents? Give examples.
3. Define antidote. What antidote is used in heavy metal poisoning?
4. Write the preparation of 0.1N Perchloric acid.
5. Write the composition of oral rehydration salt.
6. Differentiate Iodometry and Iodimetry.
7. Define Co-precipitation and post precipitation.
8. Write the mechanism of action and uses of sodium bisulphite.
9. Define Pharmaceutical aids and classify with examples.
10. Give one preparation method and uses of nitrous oxide.

Part – B**Note: Answer any Four questions.****(4x10 = 40 Marks)**

11. Explain in detail the neutralization curve for the following titrations.
 - (a) Strong acid – Strong Base.
 - (b) Strong acid – Weak base.
12. (a) Explain the limit test of sulphates.
(b) Write the preparation and uses of oxygen.
13. Define Redox Reaction. Explain the preparation and standardization and application of any one redox titrations.
14. (a) Explain the various theories of indicators.
(b) Explain the various end point determination methods in redox titration.
15. (a) Write a note on various types of solvents in non-aqueous titrations.
(b) Write a note on volhards method.

16. (a) Write a note on essential trace elements.
(b) Write a note on clinical applications of radiopharmaceuticals.
17. Define antimicrobial agents. Write a note on the preparation, mechanism of action and uses of any two antimicrobial agents.
18. Write the method of preparation, assay and uses of calcium gluconate and aluminium hydroxide gel.

FACULTY OF PHARMACY**Pharm. D. (6 YDC) I – Year (Main & Backlog) Examination, December 2020****Subject : Pharmaceutical Organic Chemistry****Time : 2 Hours****Max. Marks: 70****PART-A****Note : Answer any Six questions.****(6 x 5=30 Marks)**

1. Define polarity of bonds and Dipole moment with examples.
2. Write the structure and IUPAC names of the following
(a) Isopropyl alcohol (b) Isobutane.
3. What is Free radical? Classify and give the order of stability.
4. Write the reaction of propene with HBr in the presence and absence of peroxide.
5. Write a short note on hyper conjugation.
6. Explain the concept of aromaticity and Huckels rule.
7. What are activating and deactivating groups give examples?
8. Write a note on acidity of Carboxylic acids.
9. Compare the basicity among ammonia, Ethylamine, tertiary butylamine and dimethylamine.
10. Explain o-nitrophenol is more acidic than phenol.

PART-B**Note : Answer any four questions.****(4x10=40 Marks)**

11. (a) What are cycloalkanes? Explain Bayers theory for Stability of cycloalkanes.
(b) Discuss the molecular orbital structure of cycloalkanes.
12. What are nucleophilic aliphatic substitution reactions? Explain the mechanism, kinetics, factors affecting, stereochemistry for these reactions with example.
13. (a) Give the mechanism of Dehydrohalogenation of alkylhalides.
(b) Give four differences between E₁ and E₂.
14. Write the mechanism involved in the following:
(a) Fries Migration.
(b) Wittig reaction.
15. (a) Explain 1, 2 and 1, 4 additions in conjugated dienes with mechanism.
(b) Explain the stability of conjugated dienes.
16. What are electrophilic aromatic substitution reactions? Discuss the reaction and mechanism involved in Nitration and Sulphonation of Benzene.
17. Write the mechanism involved in the following:
(a) Cannizzaro reaction.
(b) Reformatsky's reaction.
18. (a) Discuss the mechanism of Reimer-Tiemann's reaction.
(b) Write the Sandmeyer's reaction.

FACULTY OF PHARMACY

Pharm. D. (6 YDC) I – Year (Main & Backlog) Examination, December 2020

Subject: Medicinal Biochemistry

Time: 2 Hours

Max. Marks: 70

PART- A

Note: Answer any Six questions.

(6x5=30 Marks)

1. Define co-enzymes and their role in biochemical process.
2. Write the biological significance of cyclic AMP.
3. Define Gluconeogenesis and its significance.
4. Write about Galactose tolerance test.
5. Write about defective metabolism of lipids.
6. Define oxidative phosphorylation and write its significance.
7. Explain about nitrogen balance.
8. Write a note on Kidney function tests.
9. Define and classify Enzymes.
10. How to determine electrolytes in body fluids?

PART- B

Note: Answer any Four questions.

(4x10=40 Marks)

11. Explain TCA cycle and Glycogenolysis with energetics.
12. Explain β -oxidation of fatty acids with energetics.
13. Discuss about factors effecting enzyme activity and write about enzyme inhibition.
14. Discuss about Urea cycle and its metabolic disorders.
15. Discuss about Purine and Pyrimidine nucleotide metabolism.
16. Discuss about various Liver function tests in detail.
17. Discuss in detail about RIA and ELISA.
18. Discuss about Election transport chain mechanism regulation and inhibition.

FACULTY OF PHARMACY

Pharm. D (6 YDC) I- Year (Instant) Examination, January / February 2020

Subject: Medicinal Biochemistry

Time: 3 Hours

Max. Marks: 70

Note: Answer all questions from Part –A. Any five questions from Part-B

PART-A (10x2 = 20)

- 1 Write the physiological importance of HMGCoA reductase.
- 2 Write a note on oxidative phosphorylation.
- 3 Give the tests for any three abnormal constituents of urine.
- 4 What are Iso enzymes? Write their significance.
- 5 Write the IUB classification of enzymes.
- 6 What are lipoproteins? Give the composition of lipoproteins in human.
- 7 Write about the un-couplers of ETC.
- 8 Write a note on ELISA.
- 9 Write the diagnostic importance of Glucose oxidase and peroxidase.
- 10 Write the importance of insulin in glucose uptake and utilization.

PART B (5X10 = 50)

- 11 Explain the replication process in prokaryotes.
- 12 Explain Krebs cycle and discuss the energetics.
- 13 Discuss the factors affecting enzyme activity and add a note on isoenzymes used in diagnosis.
- 14 List out various liver function tests and explain the tests based on synthetic function and excretory functions of liver.
- 15 Explain urea cycle and discuss the metabolic disorders of urea.
- 16 List out the tests for non protein nitrogen and discuss tests for urea , uric acid and creatinine clearance in Urine and mention their diagnostic importance.
- 17 Discuss in detail about ELISA and discuss its applications in diagnosis.
- 18 Write the steps involved in ketogenesis and explain its regulation. Add a note on ketoacidosis.

FACULTY OF PHARMACY
Pharm. D (6 YDC) I-Year (Instant) Examination, February 2020

Subject: Pharmaceutical Organic Chemistry

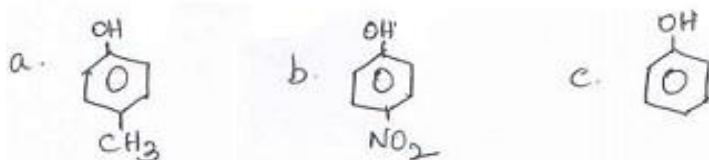
Time: 3 Hours

Max Marks: 70

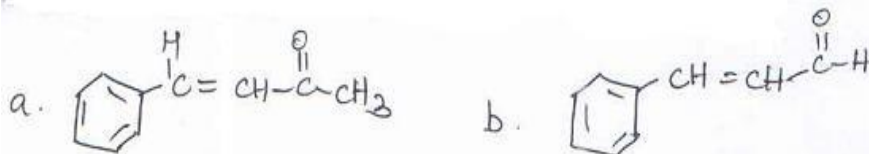
Note: Answer all questions from Part-A, Answer any Five questions from Part- B.

Part-A (10x2=20 Marks)

- 1 Arrange the following in the increasing order of acidity.



- 2 Phenol is more acidic than alcohol. Why?
 3 Explain Saytzeff's rule.
 4 Define Protic and Aprotic solvents?
 5 Give the Reimer tieman's reaction
 6 Write IUPAC name of the following



- 7 Write the structural formula for the following
 a. 4-Methyl-3-Penten-2-one
 b. 2-Iodo-2,3dimethyl butane.
 8 Explain Haloform reaction.
 9 Explain Bayers stain theory.
 10 Write the medicinal uses of Saccharin sodium.

Part-B (5x10=50 Marks)

- 11 a. Explain the Hinsberg test in the analysis of amines.
 b. Explain the theory of orientation in Alkenes.
 12 Compare between
 a. SN_1 reaction verses SN_2 reaction
 b. E_1 reaction verses E_2 reaction.
 13 Explain the following reactions of Alkenes
 (a) Oxymercuration –Demercuration (b) Hydration
 (c) Epoxidation (d) Ozonolysis (e) Hydroxylation
 14 a. Explain the Free radical addition reaction of Propylene with HBr.
 b. Explain the effect of halogen on electrophilic aromatic substitution in alkyl benzene
 15 Write short notes on following
 (a) Claisen condensation (b) Williamson's synthesis.
 16 Write the mechanism for the following
 (a) Cannizaro reaction (b) Perkin condensation.
 17 Write the methods for preparation and medicinal uses of
 (a) Aspirin (b) Vanillin
 19. a. Write the test for purity and uses of Glyceryl trinitrate.
 b. Explain 1,2 and 1,4 addition reaction of conjugated dienes.

FACULTY OF PHARMACY
Pharm D (6-YDC) I-Year (Instant) Examination, February 2020

Subject : Pharmaceutical Inorganic Chemistry

Time: 3 Hours

Max. Marks: 70

Note: Answer all Questions from Part-A, Answer any Five Questions from Part-B.

PART- A (10x2 = 20 Marks)

- 1 Define accuracy & precision.
- 2 Explain primary standard.
- 3 Define P^H indicators and give 2 examples of P^H indicators.
- 4 Outline the Principle involved in mohr's method with equation.
- 5 What are the uses of magnesium stearate.
- 6 Define error classify the various types of error.
- 7 What are masking and demasking agents
- 8 Define cathartics and expectorants
- 9 How will you prepare 0.1N NaOH
- 10 List the radiopharmaceuticals and their uses

PART- B (5x10 = 50 Marks)

- 11 Explain in detail the neutralization curve for the following Titrations with calculation of equivalence point. 5+5
 - a) Strong acid – strong base
 - b) Weak acid – strong base
- 12 Explain the principle and procedure involved in the limit test of 5+5
 - a) Chlorides
 - b) Lead
- 13 Write the preparation, properties, assay and uses of sodium chloride in replacement therapy 10
- 14 Define essential trace elements and list out the various essential trace elements. Write the physiological uses of copper and iodine (2+2+6)
- 15 a) Write about the method of preparation, assay and uses of calcium gluconate 6
 b) Classify antacids 4
- 16 Explain the various steps involved in gravimetry with one example 10
- 17 a) Write the preparation and uses of ammonium chloride & Nitrous Oxide (2+2)
 b) Explain the various solvents used in non aqueous titrations 6
- 18 Define antidote. Write the method of preparation, uses and mechanism of action of any two antidotes. 10

FACULTY OF PHARMACY**Pharm. D. (6 YDC) I-Year (Instant) Examination, February 2020****Subject: Remedial Mathematics****Time: 3 Hours****Max. Marks: 70****Note: Answer all questions from Part A, Answer any five questions from Part B.****PART-A (10x2 = 20 Marks)**

1. If $A = \begin{bmatrix} 3 & -1 & 2 \\ 3 & 1 & 2 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 4 & 6 \\ 1 & 3 & -1 \end{bmatrix}$ find $2A - 3B$.
2. If $\begin{vmatrix} x & 12 \\ 12 & x \end{vmatrix} = 0$, find x .
3. Find the distance between the points $(0, -2)$ and $(-1, 0)$.
4. Find the centre and the radius of the circle $x^2 + y^2 - 4x - y - 5 = 0$.
5. Evaluate $\int \tan x \, dx$.
6. Find the order and degree of the differential equation $a^2 \frac{d^2 y}{dx^2} = 1 + \left| \frac{dy}{dx} \right|^2$.
7. Find $\lim_{x \rightarrow 3} (7x^3 + 4x^2 + 3x)$.
8. Solve $\frac{dy}{dx} = \sec(x + y)$.
9. Find the Laplace transform of $\{\cos at\}$.
10. If $u = xy - y^3 - 4$, find $\frac{\partial u}{\partial x}$ and $\frac{\partial u}{\partial y}$.

PART-B (5x10=50)

11. (a) If $A = \begin{bmatrix} 1 & 2 & 2 \\ 2 & 1 & 2 \\ 1 & 2 & 1 \end{bmatrix}$ show that $A^2 - 4A - 5I = 0$.

(b) Show that $\begin{vmatrix} 1 & 1 & 1 \\ a & b & c \\ a^3 & b^3 & c^3 \end{vmatrix} = (a-b)(b-c)(c-a)(a+b+c)$

10M

12. (a) If $\sin A = 4/5$ and $\sin B = 5/13$ then find the value of $\sin(A+B)$, $\cos(A+B)$

(b) Eliminate θ from $x = a \sec \theta$, $y = b \tan \theta$, Prove that $\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$

10M

13. (a) Find the equation of the circle passing through the points $(0,2)$ $(3,0)$ $(3,2)$
 (b) Find the equation of the parabola whose Focus is $(-1, 1)$ and directrix is

$$x + y + 7 = 0$$

10M

14. (a) If $u = \sin^{-1} \left(\frac{x^2 + y^2}{x + y} \right)$, then $\frac{\partial u}{\partial x} + y \frac{\partial u}{\partial y} = \tan u$.

(b) Find $\frac{dy}{dx}$ if $y = \frac{\log x}{1 + \log x}$.

10M

15. (a) Evaluate $\int_0^4 \frac{1}{\sqrt{16 - x^2}} dx$.

(b) Evaluate $\int x^2 \sin 3x dx$.

10M

16. (a) Solve $(e^x + 1) y dy = (y + 1) e^x dx$.

(b) Solve $\frac{dy}{dx} = \frac{x^2 + y^2}{xy}$.

10M

17. (a) Find the Laplace transforms of $e^{2t} (2t^2 - 3t + 4)$.

(b) Find the Laplace transforms of $\cos 3t \cdot \sin 2t$.

10M

18. (a) Find the equation of the circle whose centre is (-2, 3) and passing through the centre of the circle $x^2 + y^2 - 6x + 4y + 9 = 0$.

(b) Show that $\lim_{x \rightarrow 2} \frac{\tan^{-1}(x-2)}{x^2 - 4} = \frac{1}{4}$.

10M

FACULTY OF PHARMACY

Pharm. D. (6 YDC) I-Year (Instant) Examination, February 2020

Subject: Remedial Biology

Time: Hours

Max. Marks: 70

Note: Answer all questions from Part A, Answer any five questions from Part B.

PART-A (10x2 = 20 Marks)

Write about the following:

- 1 Collenchyma
- 2 Thallophyta
- 3 Muscle tissue
- 4 Flower
- 5 Morphology of seed
- 6 Chloroplast
- 7 Placentation
- 8 Lung fishes
- 9 Pollination
- 10 Penicillin

PART-B (5x10=50)

- | | |
|---|----|
| 11 Give an account of cytoplasmic inclusions in plant and animal cells. | 10 |
| 12 Give a brief account of pollination mechanisms. | 10 |
| 13 Write about antivenom and its preparation. | 10 |
| 14 Describe the structure of dicot and monocot seed. | 10 |
| 15 Explain the transverse section of leaf and structure of mitochondria. | 10 |
| 16 Describe the respiration in fish and frog. | 10 |
| 17 Explain the economic importance and medicinal values of solanaceae plants. | 10 |
| 18 Explain the structure and features of skin of frog. | 10 |

FACULTY OF PHARMACY
Pharm. D (6-YDC) I-Year (Instant) Examination, January 2020

Subject: Human Anatomy and Physiology

Time: 3 Hours

Max. Marks: 70

Note: Answer all questions from part A, Answer any five questions from Part B.

PART - A (10x2 = 20 Marks)

- 1 Define the terms
 - a) Dorsal
 - b) Proximal
- 2 Define Reflex action
- 3 Write about the functions of skin
- 4 Define
 - a) Atherosclerosis
 - b) Cardiac arrhythmia
- 5 Classify WBC with their functions
- 6 What is Resuscitation?
- 7 Write about various movements of GI tract.
- 8 Draw labelled diagram of nephron
- 9 List out secretions of pancreas
- 10 Describe the structure and functions of RNA

PART - B (5x10 = 50 Marks)

- | | |
|---|----|
| 11 Define tissue and explain in detail about Epithelial tissue. | 10 |
| 12 a) Write composition and functions of blood. | 6 |
| b) Write a note on Anemia. | 4 |
| 13 Define and explain various events of cardiac cycle. | 10 |
| 14 a) Define : i) Hypoxia ii) Asphyxia | 2 |
| b) Write about physiology of respiration | 8 |
| 15 Write in detail about physiology of digestion and role of digestive enzymes. | 10 |
| 16 Discuss the anatomy and functions of kidney with a neat labeled diagram. | 10 |
| 17 a) Write note on hormones of pituitary gland. | 8 |
| b) Enlist the disorders of thyroid hormone. | 2 |
| 18 Write a note on | |
| a) Spermatogenesis | 5 |
| b) Anatomy of Eye | 5 |

FACULTY OF PHARMACY
Pharm. D (6-YDC) I-Year (Instant) Examination, January 2020

Subject: Pharmaceutics

Time: 3 Hours**Max. Marks: 70**

Note: Answer all questions from part A, Answer any five questions from Part B.

PART – A (10 × 2 = 20 Marks)

1. Differentiate eye drops and ear drops.
2. Write about parts of Prescription.
3. Define lotions with examples?
4. Classify dosage forms?
5. Write a brief note on colors in pharmaceutical preparations.
6. Define Eutectic mixtures with examples.
7. Calculate amount of 60% alcohol required to prepare 300ml of 40% alcohol.
8. Write about surgical dressings.
9. Define procured and deflocculated suspensions.
10. Write a brief note on chemical incompatibilities.

PART – B (5 × 10 = 50 Marks)

11. Explain different steps involved in procuration.
12. Explain about “Gargles” and “throat points”
13. Write preparation methods of
 - a. Insufflations
 - b. Dusting powder
 - c. Eutectic mixture.
14. Define posology? Add a note on factors affecting selection of dose?
15. Define incompatibility and write a note on therapeutic incompatibility with examples
16. a) Mention applications of colloids and its components.
b) Describe the characteristic features of surgical aids.
17. Explain the reasons for instability of emulsions and mention the remedies for the minimize them.
18. Explain different methods for mixing powders!

FACULTY OF PHARMACY

Pharm. D (6 YDC) I- Year (Instant) Examination, January / February 2020

Subject: Medicinal Biochemistry

Time: 3 Hours

Max. Marks: 70

Note: Answer all questions from Part –A. Any five questions from Part-B

PART-A (10x2 = 20)

- 1 Write the physiological importance of HMGCoA reductase.
- 2 Write a note on oxidative phosphorylation.
- 3 Give the tests for any three abnormal constituents of urine.
- 4 What are Iso enzymes? Write their significance.
- 5 Write the IUB classification of enzymes.
- 6 What are lipoproteins? Give the composition of lipoproteins in human.
- 7 Write about the un-couplers of ETC.
- 8 Write a note on ELISA.
- 9 Write the diagnostic importance of Glucose oxidase and peroxidase.
- 10 Write the importance of insulin in glucose uptake and utilization.

PART B (5X10 = 50)

- 11 Explain the replication process in prokaryotes.
- 12 Explain Krebs cycle and discuss the energetics.
- 13 Discuss the factors affecting enzyme activity and add a note on isoenzymes used in diagnosis.
- 14 List out various liver function tests and explain the tests based on synthetic function and excretory functions of liver.
- 15 Explain urea cycle and discuss the metabolic disorders of urea.
- 16 List out the tests for non protein nitrogen and discuss tests for urea , uric acid and creatinine clearance in Urine and mention their diagnostic importance.
- 17 Discuss in detail about ELISA and discuss its applications in diagnosis.
- 18 Write the steps involved in ketogenesis and explain its regulation. Add a note on ketoacidosis.

FACULTY OF PHARMACY
Pharm. D (6 YDC) I-Year (Instant) Examination, February 2020

Subject: Pharmaceutical Organic Chemistry

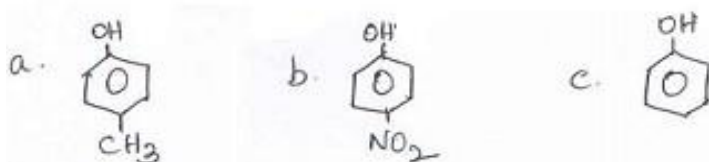
Time: 3 Hours

Max Marks: 70

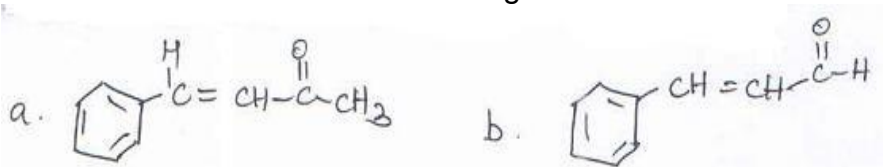
Note: Answer all questions from Part-A, Answer any Five questions from Part- B.

Part-A (10x2=20 Marks)

- 1 Arrange the following in the increasing order of acidity.



- 2 Phenol is more acidic than alcohol. Why?
 3 Explain Saytzeff's rule.
 4 Define Protic and Aprotic solvents?
 5 Give the Reimer tieman's reaction
 6 Write IUPAC name of the following



- 7 Write the structural formula for the following
 a. 4-Methyl-3-Penten-2-one
 b. 2-Iodo-2,3dimethyl butane.
 8 Explain Haloform reaction.
 9 Explain Bayers stain theory.
 10 Write the medicinal uses of Saccharin sodium.

Part-B (5x10=50 Marks)

- 11 a. Explain the Hinsberg test in the analysis of amines.
 b. Explain the theory of orientation in Alkenes.
- 12 Compare between
 a. SN_1 reaction verses SN_2 reaction
 b. E_1 reaction verses E_2 reaction.
- 13 Explain the following reactions of Alkenes
 (a) Oxymercuration –Demercuration (b) Hydration
 (c) Epoxidation (d) Ozonolysis (e) Hydroxylation
- 14 a. Explain the Free radical addition reaction of Propylene with HBr.
 b. Explain the effect of halogen on electrophilic aromatic substitution in alkyl benzene
- 15 Write short notes on following
 (a) Claisen condensation (b) Williamson's synthesis.
- 16 Write the mechanism for the following
 (a) Cannizaro reaction (b) Perkin condensation.
- 17 Write the methods for preparation and medicinal uses of
 (a) Aspirin (b) Vanillin
18. a. Write the test for purity and uses of Glyceryl trinitrate.
 b. Explain 1,2 and 1,4 addition reaction of conjugated dienes.

FACULTY OF PHARMACY
Pharm D (6-YDC) I-Year (Instant) Examination, February 2020

Subject : Pharmaceutical Inorganic Chemistry

Time: 3 Hours

Max. Marks: 70

Note: Answer all Questions from Part-A, Answer any Five Questions from Part-B.

PART- A (10x2 = 20 Marks)

- 1 Define accuracy & precision.
- 2 Explain primary standard.
- 3 Define P^H indicators and give 2 examples of P^H indicators.
- 4 Outline the Principle involved in mohr's method with equation.
- 5 What are the uses of magnesium stearate.
- 6 Define error classify the various types of error.
- 7 What are masking and demasking agents
- 8 Define cathartics and expectorants
- 9 How will you prepare 0.1N NaOH
- 10 List the radiopharmaceuticals and their uses

PART- B (5x10 = 50 Marks)

- 11 Explain in detail the neutralization curve for the following Titrations with calculation of equivalence point. 5+5
 - a) Strong acid – strong base
 - b) Weak acid – strong base
- 12 Explain the principle and procedure involved in the limit test of 5+5
 - a) Chlorides
 - b) Lead
- 13 Write the preparation, properties, assay and uses of sodium chloride in replacement therapy 10
- 14 Define essential trace elements and list out the various essential trace elements. Write the physiological uses of copper and iodine (2+2+6)
- 15 a) Write about the method of preparation, assay and uses of calcium gluconate 6
 b) Classify antacids 4
- 16 Explain the various steps involved in gravimetry with one example 10
- 17 a) Write the preparation and uses of ammonium chloride & Nitrous Oxide (2+2)
 b) Explain the various solvents used in non aqueous titrations 6
- 18 Define antidote. Write the method of preparation, uses and mechanism of action of any two antidotes. 10

FACULTY OF PHARMACY**Pharm. D. (6 YDC) I-Year (Instant) Examination, February 2020****Subject: Remedial Mathematics****Time: 3 Hours****Max. Marks: 70****Note: Answer all questions from Part A, Answer any five questions from Part B.****PART-A (10x2 = 20 Marks)**

1. If $A = \begin{bmatrix} 3 & -1 & 2 \\ 3 & 1 & 2 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 4 & 6 \\ 1 & 3 & -1 \end{bmatrix}$ find $2A - 3B$.
2. If $\begin{vmatrix} x & 12 \\ 12 & x \end{vmatrix} = 0$, find x .
3. Find the distance between the points $(0, -2)$ and $(-1, 0)$.
4. Find the centre and the radius of the circle $x^2 + y^2 - 4x - y - 5 = 0$.
5. Evaluate $\int \tan x \, dx$.
6. Find the order and degree of the differential equation $a^2 \frac{d^2 y}{dx^2} = 1 + \left| \frac{dy}{dx} \right|^2$.
7. Find $\lim_{x \rightarrow 3} (7x^3 + 4x^2 + 3x)$.
8. Solve $\frac{dy}{dx} = \sec(x+y)$.
9. Find the Laplace transform of $\{\cos at\}$.
10. If $u = xy - y^3 - 4$, find $\frac{\partial u}{\partial x}$ and $\frac{\partial u}{\partial y}$.

PART-B (5x10=50)

11. (a) If $A = \begin{bmatrix} 1 & 2 & 2 \\ 2 & 1 & 2 \\ 1 & 2 & 1 \end{bmatrix}$ show that $A^2 - 4A - 5I = 0$.

(b) Show that $\begin{vmatrix} 1 & 1 & 1 \\ a & b & c \\ a^3 & b^3 & c^3 \end{vmatrix} = (a-b)(b-c)(c-a)(a+b+c)$ 10M

12. (a) If $\sin A = 4/5$ and $\sin B = 5/13$ then find the value of $\sin(A+B)$, $\cos(A+B)$

(b) Eliminate θ from $x = a \sec \theta$, $y = b \tan \theta$, Prove that $\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$ 10M

13. (a) Find the equation of the circle passing through the points $(0,2)$ $(3,0)$ $(3,2)$
 (b) Find the equation of the parabola whose Focus is $(-1, 1)$ and directrix is

$$x + y + 7 = 0$$

10M**Contd..2**

14. (a) If $u = \sin^{-1} \left(\frac{x^2 + y^2}{x + y} \right)$, then $\frac{\partial u}{\partial x} + y \frac{\partial u}{\partial y} = \tan u$.

(b) Find $\frac{dy}{dx}$ if $y = \frac{\log x}{1 + \log x}$. 10M

15. (a) Evaluate $\int_0^4 \frac{1}{\sqrt{16 - x^2}} dx$.

(b) Evaluate $\int x^2 \sin 3x dx$. 10M

16. (a) Solve $(e^x + 1) y dy = (y + 1) e^x dx$.

(b) Solve $\frac{dy}{dx} = \frac{x^2 + y^2}{xy}$. 10M

17. (a) Find the Laplace transforms of $e^{2t} (2t^2 - 3t + 4)$.

(b) Find the Laplace transforms of $\cos 3t$ and $\sin 2t$. 10M

18. (a) Find the equation of the circle whose centre is (-2, 3) and passing through the centre of the circle $x^2 + y^2 - 6x + 4y + 9 = 0$.

(b) Show that $\lim_{x \rightarrow 2} \frac{\tan^{-1}(x-2)}{x^2 - 4} = \frac{1}{4}$. 10M

FACULTY OF PHARMACY**Pharm. D. (6 YDC) I-Year (Instant) Examination, February 2020****Subject: Remedial Biology****Time: Hours****Max. Marks: 70****Note: Answer all questions from Part A, Answer any five questions from Part B.****PART-A (10x2 = 20 Marks)****Write about the following:**

- 1 Collenchyma
- 2 Thallophyta
- 3 Muscle tissue
- 4 Flower
- 5 Morphology of seed
- 6 Chloroplast
- 7 Placentation
- 8 Lung fishes
- 9 Pollination
- 10 Penicillin

PART-B (5x10=50)

- 11 Give an account of cytoplasmic inclusions in plant and animal cells. 10
- 12 Give a brief account of pollination mechanisms. 10
- 13 Write about antivenom and its preparation. 10
- 14 Describe the structure of dicot and monocot seed. 10
- 15 Explain the transverse section of leaf and structure of mitochondria. 10
- 16 Describe the respiration in fish and frog. 10
- 17 Explain the economic importance and medicinal values of solanaceae plants. 10
- 18 Explain the structure and features of skin of frog. 10

FACULTY OF PHARMACY
Pharm. D (6-YDC) I-Year (Instant) Examination, January 2020

Subject: Human Anatomy and Physiology

Time: 3 Hours

Max. Marks: 70

Note: Answer all questions from part A, Answer any five questions from Part B.

PART - A (10x2 = 20 Marks)

- 1 Define the terms
 - a) Dorsal
 - b) Proximal
- 2 Define Reflex action
- 3 Write about the functions of skin
- 4 Define
 - a) Atherosclerosis
 - b) Cardiac arrhythmia
- 5 Classify WBC with their functions
- 6 What is Resuscitation?
- 7 Write about various movements of GI tract.
- 8 Draw labelled diagram of nephron
- 9 List out secretions of pancreas
- 10 Describe the structure and functions of RNA

PART - B (5x10 = 50 Marks)

- | | |
|---|----|
| 11 Define tissue and explain in detail about Epithelial tissue. | 10 |
| 12 a) Write composition and functions of blood. | 6 |
| b) Write a note on Anemia. | 4 |
| 13 Define and explain various events of cardiac cycle. | 10 |
| 14 a) Define : i) Hypoxia ii) Asphyxia | 2 |
| b) Write about physiology of respiration | 8 |
| 15 Write in detail about physiology of digestion and role of digestive enzymes. | 10 |
| 16 Discuss the anatomy and functions of kidney with a neat labeled diagram. | 10 |
| 17 a) Write note on hormones of pituitary gland. | 8 |
| b) Enlist the disorders of thyroid hormone. | 2 |
| 18 Write a note on | |
| a) Spermatogenesis | 5 |
| b) Anatomy of Eye | 5 |

FACULTY OF PHARMACY
Pharm. D (6-YDC) I-Year (Instant) Examination, January 2020

Subject: Pharmaceutics

Time: 3 Hours

Max. Marks: 70

Note: Answer all questions from part A, Answer any five questions from Part B.

PART – A (10 × 2 = 20 Marks)

1. Differentiate eye drops and ear drops.
2. Write about parts of Prescription.
3. Define lotions with examples?
4. Classify dosage forms?
5. Write a brief note on colors in pharmaceutical preparations.
6. Define Eutectic mixtures with examples.
7. Calculate amount of 60% alcohol required to prepare 300ml of 40% alcohol.
8. Write about surgical dressings.
9. Define procured and deflocculated suspensions.
10. Write a brief note on chemical incompatibilities.

PART – B (5 ×10 = 50 Marks)

11. Explain different steps involved in procolation.
12. Explain about “Gargles” and “throat points”
13. Write preparation methods of
 - a. Insufflations
 - b. Dusting powder
 - c. Eutectic mixture.
14. Define posology? Add a note on factors affecting selection of dose?
15. Define incompatibility and write a note on therapeutic incompatibility with examples
16. a) Mention applications of colloids and its components.
b) Describe the characteristic features of surgical aids.
17. Explain the reasons for instability of emulsions and mention the remedies for the minimize them.
18. Explain different methods for mixing powders!

FACULTY OF PHARMACY**Pharm. D (6 YDC) I-Year (Main & Backlog) Examination, July 2019****Subject: Human Anatomy and Physiology****Time: 3 Hours****Max. Marks: 70****Note: Answer all questions from part A, Answer any five questions from Part B.****PART - A****(10×2 = 20 Marks)**

1. Define a) Thrombocytopenia
b) Hemophilia
2. Write composition and functions of Cerebra Spinal Fluid
3. What are the hormones secreted by pituitary gland
4. Write about spermatogenesis
5. List the different types of taste buds with functions
6. Write the functions of liver
7. Define a) Hepatitis
b) Peptic ulcer
8. Define a) Hypertension
b) Angina pectoris
9. Write the functions of spleen
10. Write the functions of bone

PART - B**(5 ×10 =50 Marks)**

11. a) Classify connective tissue 3
b) What are synovial joints describe the types of movements of synovial joints 7
12. Define blood pressure and write about regulation of blood pressure 10
13. a) Define i) Tidal volume
ii) Vital capacity 2
b) Write about physiology of respiration 8
14. a) Describe anatomy of small intestine 3
b) Write a note on digestion of food in small intestine 7
15. Explain different parts of brain with labelled diagram 10
16. a) Write a note on Renin Angiotensin system 4
b) Write a note on Thyroid gland 6
17. Write a note on a) Oogenesis 5
b) Contraceptive methods 5
18. Explain the anatomy and physiology of Ear 10

FACULTY OF PHARMACY

Pharm. D (6 YDC) I-Year (Main & Backlog) Examination, July 2019

Subject: Medicinal Biochemistry

Time: 3 Hours

Max. Marks: 70

Note: Answer all questions from Part –A. Any five questions from Part-B

PART-A (10x2 = 20)

1. Define Co-transport, Symport and antiport with examples
2. Write a note on co-enzymes and cofactors
3. Write a note on lipid storage disease
4. Write the advantages of glucose tolerance test over other blood glucose estimation tests?
5. Write the metabolic disorders of phenylalanine and tyrosine metabolism
6. What is creatinine clearance test? Write its significance
7. What is nitrogen balance?
8. Write a note on immunochemical tests used in diagnosis of viral diseases
9. Write the diagnostic significance of SGOT and SGPT enzymes.
10. Write a note on essential amino acids.

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PART B (5X10 = 50)

11. Explain β –oxidation of palmitic acid with its energetic.
12. Explain HMP shunt and write its significance
13. Explain Line weaver Burk plot. Discuss about reversible enzyme inhibition with examples
14. Explain DNA replication and DNA repair mechanism
15. What is biological oxidation? Explain the mechanism of ETC and its regulation
16. Discuss the tests for hepatic dysfunction
17. Explain in detail about RIA and discuss its applications in diagnosis
18. Discuss in detail about gluconeogenesis and Write a brief account on glycogen storage diseases

FACULTY OF PHARMACY

Pharm. D (6 YDC) I-Year (Main & Backlog) Examination, July 2019

Subject: Pharmaceutical Inorganic Chemistry

Time : 3 Hours

Max. Marks: 70

Note: Answer all questions from Part A and answer any five questions from Part-B.

PART-A (10 x 2 = 20 Marks)

1. Define accuracy and precision.
2. Write about primary and secondary standards.
3. Explain Mohrs and Volhards methods.
4. What are different types of acidifiers?
5. Give reasons for use of combination of aluminium and magnesium salts as antacids.
6. Write the uses of Hydrogen peroxide.
7. What are anticaries agents? Give examples.
8. Define expectorants and emetics.
9. Write the method of preparation and uses of calcium carbonate.
10. Define common ion effect.

PART-B (5 x 10 = 50 Marks)

11. Define Limit test. Write about the principle and procedure involved in the limit test for Lead. (10)
12. Explain in detail about the neutralization curve for the following titrations with calculation of equivalence point and pH. (5)
 - (a) Strong acid-Strong base. (5)
 - (b) Weak acid-Strong base. (5)
13. Explain how end point is detected in Complexometric titrations. (10)
14. (a) What are antimicrobials? (2)
 - (b) Write the mechanism of action of antimicrobial agents. (8)
15. Write in detail about role of solvents used in Non aqueous titration. (10)
16. Explain about the physiological role of copper and iodine. (2x5)
17. (a) What are antacids? Classify them. (4)
 - (b) Write the method of preparation and uses of aluminium hydroxide gel and sodium bicarbonate. (6)
18. Define antidote. Write the method of preparation, uses and mechanism of sodium nitrate and sodium thiosulphate in cyanide poisoning. (10)

FACULTY OF PHARMACY

Pharm. D (6-YDC) I-Year (Main & Backlog) Examination, June/July 2019

Subject: Pharmaceutics

Time: 3 Hours

Max. Marks: 70

Note: Answer all questions from part A, Answer any five questions from Part B.

PART – A (10 × 2 = 20 Marks)

1. Define displacement value and write its importance.
2. If the adult dose of a drug is 500mg, calculate the dose for a 5 year child.
3. Write the principle involved in calamine lotion.
4. Define Tinctures and write their applications
5. Classify dosage forms with examples?
6. Distinguish between o/w and w/o type emulsions.
7. What is the difference between lotion and Liniment?
8. What is a syrup? What is the conc. of sugar w/w & w/v in syrup?
9. Write a note on flavors used in pharmaceutical products.
10. Convert 50.16% v/v strength alcohol into proof spirit.

PART - B (5 ×10 = 50 Marks)

11. What is Posology? Explain factors effecting solution of dose.
12. Write a note on development of pharmaceutical industry in India and its growth prospectus?
13. Write a note on different maceration and percolation methods.
14. Write a note on a. U.S.P
b. I.P.
15. Describe any two chemical incompatibilities and how do you handle them?
16. Explain suspensions and evaluation of stability of suspensions
17. Explain effervescent granules and their preparation.
18. a) Explain the differences between infusion and decoction
b) Explain stability studies of emulsions.

FACULTY OF PHARMACY

Pharm. D. (6 YDC) I-Year (Main & Backlog) Examination, July 2019

Subject: Remedial Mathematics

Time: 3 Hours

Max. Marks: 70

Note: Answer all questions from Part A, Answer any Five questions from Part B.

PART-A (10x2 = 20 Marks)

1. If $A = \begin{bmatrix} 1 \\ 3 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 6 & 7 \end{bmatrix}$ find AS

2. Find the value of $\begin{vmatrix} \tan x & \sec x \\ \sec x & \tan x \end{vmatrix}$

3. Find the value of 'a' if the distance between the points $(a, 2)$ and $(3, 4)$ is $\sqrt{8}$ units.

4. Find the centre and the radius of the circle $2x^2 + 2y^2 - 8x - 12y - 3 = 0$

5. Evaluate $\int \sec x \, dx$

6. Find the order and degree of the differential equation $1 + \left(\frac{dy}{dx}\right)^2 = 7 \left(\frac{d^2y}{dx^2}\right)^3$

7. Find $\lim_{x \rightarrow 2} (3x^3 + 2x^2 + x)$

8. Solve $\frac{dy}{dx} = (x + y)^2$

9. Find the Laplace transform of $\{e^{at}\}$

10. If $z = 2xy + y^3 - 3$, find $\frac{\partial z}{\partial x}$ and $\frac{\partial z}{\partial y}$

PART-B (5x10=50)

11. (a) If $A = \begin{bmatrix} 3 & -5 \\ -4 & 2 \end{bmatrix}$ show that $A^2 - 5A = 14I$

(b) Show that $\begin{vmatrix} 1 & 1 & 1 \\ a & b & c \\ a^2 & b^2 & c^2 \end{vmatrix} = (a-b)(b-c)(c-a)$

10M

12. (a) $\sin \theta = 3/5$ and θ is acute, find the value of $2\tan \theta + 3\sec \theta + 4\sec \theta \cdot \cot \theta$

(b) Eliminate θ from $x = a \cos \theta$, $y = a \sin \theta$ show that $x^2 + y^2 = a^2$

10M

13. (a) Find the equation of the circle passing through the points $(1,1)$ $(-2,2)$ $(-6,0)$

(b) Find the equation of the parabola whose Focus is $(-1,1)$ and directrix is $x + y + 1 = 0$

10M

Contd..2

-2-

14.(a) If $u = \frac{x^3 + y^3}{x - y}$ then $x \frac{\partial u}{\partial x} + y \frac{\partial u}{\partial y} = \sin 2u$

(b) Find $\frac{dy}{dx}$ if $y = \frac{x^2 - 3x + 5}{x^2 + 3x + 5}$ 10M

15. (a) Evaluate $\int \frac{1}{1 + \cot x} dx$

(b) Evaluate $\int x^3 e^{2x} dx$ 10M

16. (a) Solve $(x + 1) \frac{dy}{dx} + 1 = 2e^{-y}$

(b) $x^2 \frac{dy}{dx} = x^2 + xy + y^2$ 10M

17. (a) Find the Laplace transforms of $e^{-3t}(2\cos 5t - 3\sin 5t)$

(b) Find the Laplace transforms of $e^{-4t} + 3e^{-2t}$ 10M

18. (a) Find the equation of the circle whose centre is (-3, 1) and passing through the

centre of the circle $x^2 + y^2 + 2x - 4y + 4 = 0$

(b) Show that $\lim_{x \rightarrow 2} \frac{\tan(x-2)}{x^2 - 4} = \frac{1}{4}$ 10M

FACULTY OF PHARMACY

Pharm. D. (6 YDC) I-Year (Main & Backlog) Examination, July 2019

Subject: Remedial Biology

Time: Hours

Max. Marks: 70

Note: Answer all questions from Part A, Answer any Five questions from Part B.

PART-A (10x2 = 20 Marks)

Write about following:

1. Plastids
2. Fungi
3. Lymphocyte
4. Naja Naja
5. Neuron
6. Monocot Seed
7. Sclerenchyma
8. Taproot
9. Tadpole
10. Ovipary

PART-B (5x10=50)

11. Explain in detail about families and orders of Bentham and Hooker's classification of plant kingdom. 10M
12. Explain the structure of penicillium species and give an account of its economic importance. 10M
13. Write the distinguishing characteristics of mammals and write about the subclasses included in this class. 10M
14. Give an account of Glycolysis and TCA cycle. 10M
15. Give the medicinal importance of classes Pisces and Aves. 10M
16. Describe the light reactions of photosynthesis. 10M
17. Write a note on inflorescence and explain racemose inflorescence. 10M
18. Write a note on aerial stem modification and Structure of flower. 10M

FACULTY OF PHARMACY**Pharm D (6–YDC) I – Year (Main & Backlog) Examination, July 2018****Subject: Human Anatomy and Physiology****Time: 3 Hours****Max.Marks: 70****Note: Answer all questions from Part – A. Any Five questions from Part – B.****PART – A (10x2 = 20 Marks)**

- 1 Define the terms:
 - a) Myocardial infarction
 - b) Cardiac arrhythmia
- 2 Give the composition of intestinal and pancreatic juice.
- 3 Write a note on working status of heart in athletes.
- 4 What is rennin-angiotension-aldosterone system?
- 5 Define the terms IPSP and EPSP with examples.
- 6 Explain the terms:
 - a) Asphyxia
 - b) Resuscitation
- 7 Write the functions of mineralocorticoids.
- 8 Name the different types of synovial joints with examples.
- 9 What is membrane potential?
- 10 Write the differences between sympathetic and para sympathetic nervous system.

PART – B (5x10 = 50 Marks)

- 11 a) Classify tissues. List out the different types of connective tissues. Describe the histology of bone with a neat labeled diagram. 7
- b) Write the composition and functions of blood. 3
- 12 Discuss the physiology of respiration in detail. 10
 - a) **Describe the anatomical features of heart with a neat labeled diagram.** 6
 - b) Define blood pressure and add a note on its regulation. 4
- 13 Describe the anatomical features of ear with a neat labeled diagram and discuss the physiology of hearing. 6+4
- 14 Write a note on:
 - a) Spermatogenesis 5
 - b) Oral contraceptives 5
- 15 List out the cranial nerves and discuss its functions. 10
- 16 Write the process of digestion and absorption in GIT. 10
- 17 Give a detailed note on pituitary gland. 10

FACULTY OF PHARMACY**Pharm D (6–YDC) I – Year (Main & Backlog) Examination, July 2018****Subject: Pharmaceutical Inorganic Chemistry****Time: 3 Hours****Max.Marks: 70****Note: Answer all questions from Part – A. Any Five questions from Part – B.****PART – A (10x2 = 20 Marks)**

- 1 Explain the indicators in complexometric titrations.
- 2 Explain the role of solvents in limit test for iron.
- 3 Mention the method of preparation of nitrous oxide.
- 4 What are the uses of magnesium stearate?
- 5 Mention the units of measurement of radioactivity.
- 6 Calculate the normality for 500 ml solution containing 4 gm of sodium hydroxide.
- 7 Define an error. What are the different types of errors?
- 8 Give examples for mixed and universal indicators.
- 9 Define Mohrs method.
- 10 Write about electrolyte replenishes.

PART – B (5x10 = 50 Marks)

- 11 Explain in detail about the neutralization curve for the following titrations with calculation of equivalence point and pH.
 - a) Strong acid – Strong base 5
 - b) Weak acid – Weak base 5
- 12 a) Name the magnesium compounds used as antacids. Describe the preparation, properties, assay and uses of milk of magnesia. 5
 b) Name the different types of acidifiers and give their examples. 5
- 13 a) How is end point detected in redox titrations? 5
 b) Mention pharmaceutical applications of gravimetry. 5
- 14 What are essential trace elements? Write the physiological role of copper and iodine. 10
- 15 Define limit test. Write about the principle and procedure involved in the limit test of arsenic with neat diagram. 10
- 16 Write the preparation, properties, assay and uses of sodium chloride in replacement therapy. 10
- 17 What are radiopharmaceuticals? Write about its clinical applications. 10
- 18 Explain the mechanism of action of anti-microbial agents. Give a brief account on hydrogen peroxide. 10

FACULTY OF PHARMACY

Pharm D (6–YDC) I – Year (Main / Backlog) Examination, July 2018

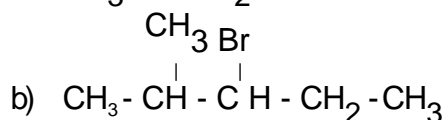
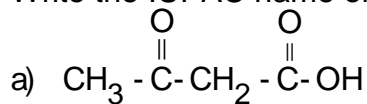
Subject: Pharmaceutical Organic Chemistry

Time: 3 Hours

Max.Marks: 70

Note: Answer all questions from Part – A. Any Five questions from Part – B.**PART – A (10x2 = 20 Marks)**

1 Write the IUPAC name of the following:



2 Give the structural formula of:

a) But-1-en-3-yne

b) 1-Bromo-2-chloro ethane

3 Define the term acidity and basicity.

4 Explain polarity of molecules with example.

5 Explain activating and deactivating groups with example.

6 Arrange the following in decreasing order of their reactivity.

Benzene, Toluene and Nitrobenzene.

7 What is resonance? Give any two example.

8 Write any one method of preparation of lactic acid.

9 Explain hydrogen bonding with example.

10 Explain the acidity of phenol.

PART – B (5x10 = 50 Marks)11 a) Explain in detail the mechanism, stereochemistry and rearrangement reaction of SN^1 with suitable example. 6

b) Explain the mechanism of free radical reaction of methane. 4

12 a) Explain the nucleophilic addition reactions of aldehyde. 5

b) Describe the methods of preparation of acid derivatives. 5

13 Write short notes on the following:

a) Reimer – Tieman's reaction 5

b) Williamson's synthesis 5

- 14 Write the mechanism of:
a) Benzoin condensation 5
b) Reformatsky reaction 5
- 15 Write the “test for purity” and uses for tartaric acid and glyceryl trinitrate. 10
- 16 a) Give 3 methods for the preparation of cyclopropane. 5
b) Explain in detail about bimolecular displacement mechanism. 5
- 17 a) Explain the mechanism of sulphonation reaction of benzene. 5
b) Explain in detail the effect of halogen on electrophilic aromatic substitution in alkyl benzene. 5
- 18 a) Write the preparation and assay method of vanillin and dimercaprol. 5
b) Write the principle involved in the assay of aspirin. 5

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FACULTY OF PHARMACY

Pharm D (6–YDC) I – Year (Main & Backlog) Examination, July 2018

Subject: Medicinal Biochemistry

Time: 3 Hours

Max.Marks: 70

Note: Answer all questions from Part – A. Any Five questions from Part – B.

PART – A (10x2 = 20 Marks)

- 1 Write the structural components of Eukaryotic ribosomes.
- 2 What is free energy and free energy change?
- 3 Write a note on glycogen storage diseases.
- 4 Write the characteristics of vesicular transport systems across cell membranes.
- 5 What is anion gap?
- 6 Explain briefly different states of nitrogen balance.
- 7 Explain the liver enzyme tests.
- 8 What is LDL-cholesterol and how it is measured from other components of lipid profile.
- 9 Write briefly the metabolic derangements in diabetes mellitus.
- 10 What is hemolytic jaundice? How is it diagnosed?

PART – B (5x10 = 50 Marks)

- 11 Explain in detail prokaryotic translation process.
- 12 Write the mechanism involved in regulation of body's acid-base balance and maintenance of blood pH.
- 13 Explain the characteristics of reversible enzyme inhibition with their kinetics.
- 14 List out various renal function tests and explain the tests based on glomerular function of kidneys.
- 15 Explain HMP pathway and its significance.
- 16 a) Write the procedure and interpretation of OGTT.
b) Explain the role of hormones in carbohydrate metabolism.
- 17 a) Explain dye tests for excretory function of liver.
b) Explain calcium and phosphate homeostasis in the body.
- 18 Explain β – oxidation of saturated fatty acids and write the total energy yield from complete oxidation of one molecule of palmitic acid.

FACULTY OF PHARMACY**Pharm D (6–YDC) I – Year (Main & Backlog) Examination, July 2018****Subject: Pharmaceutics****Time: 3 Hours****Max.Marks: 70****Note: Answer all questions from Part – A. Any Five questions from Part – B.****PART – A (10x2 = 20 Marks)**

- 1 Differentiate between Gargles and Throat points.
- 2 Write a note on aromatic spirit of ammonia.
- 3 Calculate the amount of 95% alcohol required to prepare 400 ml of 60% alcohol.
- 4 Mention the various reasons which causes physical incompatibility.
- 5 Write about desirable properties of a colouring agent.
- 6 What will be the dose for a child of 8 years if the adult dose is 200 mg.
- 7 Write a note on absorbable gelatin sponge.
- 8 Define the terms, Elixirs and Linctuses.
- 9 Write in brief about eutectic powders.
- 10 Differentiate between emulsion and suspension.

PART – B (5x10 = 50 Marks)

- 11 Describe different types of suppository bases and mention ideal properties of a suppository base. 10
- 12 a) Write a note on British pharmacopoeia. 6
b) Convert the following:
60 O.P. and 35 U.P. to % v/v of alcohol and 40% v/v and 75% v/v alcohol to proof spirit. 4
- 13 Explain types of instability of emulsions and describe the factors that improve the stability of emulsion. 10
- 14 Write the principle and procedure involved for the preparation of:
 - a) Calamine lotion 5
 - b) Lugol's solution 5
- 15 Define posology. Explain different factors influencing selection of dose. 10
- 16 a) Explain continuous hot percolation. 6
b) Differentiate between decoction and infusion. 4
- 17 Write short notes on:
 - a) Lotions 5
 - b) Liniments 5
- 18 a) Explain different therapeutic incompatibilities 6
b) Write in brief about effervescent granules. 4

FACULTY OF PHARMACY**Pharm D (6 – YDC) I – Year (Main & Backlog) Examination, July 2018****Subject: Remedial Mathematics****Time: 3 Hours****Max.Marks: 70****Note: Answer all questions from Part – A. Any Five questions from Part – B.****PART – A (10x2 = 20 Marks)**

1 If $A = \begin{bmatrix} 1 & -1 \\ 0 & 3 \end{bmatrix}$ and $I = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$, find AI .

2 If $\begin{bmatrix} 0 & 2a \\ 3b & 0 \end{bmatrix} = \begin{bmatrix} 0 & 6 \\ 9 & 0 \end{bmatrix}$ then find a and b .

3 Find the slope of the joining points (x_1, y_1) and (x_2, y_2) .

4 Find the center and radius of $(x-a)^2 + (y-b)^2 = r^2$.

5 Evaluate $\int_0^{\pi/2} \sin x \, dx$.

6 Find the order and degree of differential eqn.

$$y' + (y')^2 + 5y = x^2.$$

7 Solve $x^2 dx + \frac{1}{y} dy = 0$.

8 Find $\lim_{x \rightarrow 1} \frac{x^2 - 2x + 1}{x - 1}$.

9 Find the Laplace transform of $f(t) = t^3 + e^{-t}$

10 Find $\frac{\partial u}{\partial x}$ and $\frac{\partial u}{\partial y}$ if $u(x, y, z) = x^2 + xyz$.

PART – B (5x10 = 50 Marks)

11 a) If $A = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$ and $B = \begin{bmatrix} 0 & 1 \\ -1 & 0 \end{bmatrix}$ then find $(\sin \theta)A + (\cos \theta)B$.

b) Show that $\begin{vmatrix} a^2 + 2a & 2a + 1 & 1 \\ 2a + 1 & a + 2 & 1 \\ 3 & 3 & 1 \end{vmatrix} = (a-1)^3$.

12 a) If $(A+B) = \pi/4$ then prove that $(1+\tan A)(1+\tan B) = 2$.

b) If $\sin A = \frac{12}{13}$ and $\cos B = \frac{3}{5}$ then find $\sin^2 A + \cos^2 A$ and $\sin^2 B + \cos^2 B$.

- 13 a) Find the radius and center of the circle $x^2 + y^2 + 2ax - 2by + b^2 = 0$.
 b) Find the coordinates of vertex and focus and directors of the parabola $y^2 = 25x$.

14 a) If $\lim_{x \rightarrow 1} \frac{ax^2 + x + 5}{x - 2} = 3$ then find value of a.

b) If $u = \sin^{-1} \left[\frac{x^3 - y^3}{x + y} \right]$ then find $x \frac{\partial u}{\partial x} + y \frac{\partial u}{\partial y}$.

15 a) Evaluate $\int_{\pi/4}^2 \log x \, dx$.

b) Evaluate $\int_0^{\pi/4} \frac{x \tan^{-1} x}{1 + x^2} \, dx$.

16 a) Solve $\frac{dy}{dx} = \frac{1 + y^2}{1 + x^2}$.

b) Solve $\frac{dy}{dx} = e^{ax+by}$.

17 a) Find the Laplace transform of $e^t \cos^2 t$.

b) Show that $L[af(t) + bg(t)] = aL[f(t)] + bL[g(t)]$.

18 a) Show that $\lim_{x \rightarrow 2} \frac{\tan(x-2)}{x^2 - 4} = \frac{1}{4}$.

b) Evaluate $\int_0^2 x^2 e^x \, dx$.

FACULTY OF PHARMACY

Pharm D (6–YDC) I – Year (Main & Backlog) Examination, July 2018

Subject: Biology

Time: 3 Hours

Max.Marks: 70

Note: Answer all questions from Part – A. Any Five questions from Part – B.

PART – A (10x2 = 20 Marks)

Write about:

- 1 Collenchyma
- 2 Thallophyta
- 3 Muscle tissue
- 4 Flower
- 5 Metamorphosis
- 6 Hydathodes
- 7 Placentation
- 8 Lung fishes
- 9 Pollination
- 10 Venom of snake

PART – B (50 Marks)

- 11 a) Give an account of cell inclusions in plants.
b) Explain about the complex tissue system in plants.
- 12 a) Give an account on aerial stem modifications.
b) Write about Bentham and Hooker's classification of plant kingdom.
- 13 a) Write a note on root system and brief about root modifications.
b) Describe the structural features of seed coat.
- 14 a) Write a note on inflorescence and explain Racemose inflorescence.
b) Describe the role of yeasts in fermentation.
- 15 a) Give an account on floral characters of liliaceae.
b) Describe the economic importance and medicinal values of solanaceae plants.
- 16 a) Give an account on TCA cycle.
b) Write a detailed note on respiration in frog.
- 17 a) Describe the anatomy of dicot stem.
b) Write a note on simple fruits.
- 18 a) Write the distinguishing general characters of class mammals.
b) Give the medicinal importance of classes Pisces and Aves.

FACULTY OF PHARMACY
Pharm. D (6 YDC) I-Year (Instant) Examination, March 2018

Subject : Human Anatomy and Physiology

Time : 3 Hours**Max. Marks: 70**

Note: Answer all questions from Part – A, answer any five questions from Part-B.

PART – A (10 x 2 = 20 Marks)

- 1 Define the terms ipsilateral, proximal with examples.
- 2 Draw the diagram of osteon with labelling.
- 3 What is sickle cell disease?
- 4 Define cardiac cycle. What is cardiac cycle time?
- 5 Name the posterior pituitary hormones and what are their functions.
- 6 List the cranial nerves with cholinergic functions.
- 7 Mention different muscles of eye and their functions.
- 8 What are the functions of WBC?
- 9 Define the term myasthenia gravis.
- 10 Write about the functioning of different valves of heart.

PART – B (5 x 10 = 50 Marks)

- 11 (a) What are different cells present in connective tissues? (2)
(b) Write a note on different types of connective tissue. (8)
- 12 (a) Write about the two divisions of skeletal system. (3)
(b) Write in detail about pectoral girdle. (7)
- 13 Compare the anatomy and physiology of the two divisions of autonomic nervous system.
- 14 Define B.P. and write a note on control and regulation of B.P.
- 15 Write a note on thyroid gland anatomy, regulation and functions of its secretions.
- 16 (a) Write in detail about the formation of urine. (7)
(b) What is juxtaglomerular apparatus? (3)
- 17 Describe the anatomy and physiology of tongue with labelled diagrams.
- 18 Write a note on:
(a) Chemical and mechanical methods of contraception. (5)
(b) Digestion and absorption of proteins and carbohydrates. (5)

FACULTY OF PHARMACY
Pharm. D (6 YDC) I-Year (Instant) Examination, March 2018

Subject : Medicinal Biochemistry

Time : 3 Hours

Max. Marks: 70

Note: Answer all questions from Part – A, answer any five questions from Part-B.

PART – A (10 x 2 = 20 Marks)

- 1 What is genetic code? Write characteristics of genetic code.
- 2 What is creatinine clearance? Write its diagnostic significance.
- 3 What are frame shift mutations and write its consequences?
- 4 Define Michaelis Menten constant and write its significance.
- 5 Give a short note on Gout.
- 6 Mention the effect of pH on enzymes activity.
- 7 Give a note on HDC and CDC ratio and its clinical significance.
- 8 Enumerate briefly functions of plasma membrane.
- 9 Explain briefly ketogenesis.
- 10 Write significance of glucose tolerance test.

PART – B (5 x 10 = 50 Marks)

- 11 Write components of electron transport chain and explain the mechanism of electron transport.
- 12 Explain methods for determination of sodium, potassium and bicarbonates in body fluids.
- 13 (a) Explain DNA repair mechanisms.
(b) Describe HMP shunt pathway.
- 14 Describe in detail protein Biosynthesis.
- 15 Describe in detail about urine analysis.
- 16 (a) Explain about water balance and its regulation in Body.
(b) Discuss disorders of Acid-base balance.
- 17 Discuss in detail about Radio Immuno Assay.
- 18 Explain β -oxidation of saturated fatty acids and write the total energy yield from complete oxidation of one molecule of Palmitic Acid.

FACULTY OF PHARMACY**Pharm D (6-YDC) I – Year (Instant) Examination, March 2018****Subject: Remedial Mathematics****Time: 3 Hours****Max.Marks: 70****Note: Answer all questions from Part – A. Any Five questions from Part – B.****PART – A (10x2 = 20 Marks)**

- 1 If $A = \begin{bmatrix} -2 & 1 \\ 5 & 0 \\ -1 & 4 \end{bmatrix}$ and $B = \begin{bmatrix} -2 & 3 & 1 \\ 4 & 0 & 2 \end{bmatrix}$ then find $A + 2B$.
- 2 Find the distance between $(a \cos \alpha, a \sin \alpha)$ and $(0, 0)$.
- 3 If $\sin A = \frac{3}{5}$ then find $\cos A + \tan A$.
- 4 Find the $\frac{dy}{dx}$ if $y = (ax+b)^n$.
- 5 Find $\int \log x \, dx$.
- 6 Find the order and degree of differential equation $\frac{d^2y}{dx^2} + \left(\frac{dy}{dx}\right)^2 + y = x^2$.
- 7 Find Laplace transform of $e^t \sin t$.
- 8 Find the center and radius of the circle $3x^2 + 3y^2 - 6x + 12y + 3 = 0$.
- 9 Find the $\lim_{x \rightarrow 2} \frac{x^4 - 2^4}{x^2 - 2^2}$.
- 10 If $Z = yx^2z + xy^2$ then find $\frac{\partial Z}{\partial x}$ and $\frac{\partial Z}{\partial y}$.

PART – B (5x10 = 50 Marks)

- 11 a) Show that $\begin{vmatrix} 1 & a & a^2 \\ 1 & b & b^2 \\ 1 & c & c^2 \end{vmatrix} = (a-b)(b-c)(c-a)$.
- b) If $\begin{bmatrix} 2x+1 & 0 \\ 2y+4 & 0 \end{bmatrix} = \begin{bmatrix} 3 & 0 \\ & \end{bmatrix}$ then find x and y .
- 12 a) If $\tan A = \frac{5}{12}$ then find $\tan (A+B)$.
- b) If $x = r \cos \theta \cos \alpha$, $y = r \cos \theta \sin \alpha$ and $z = r \sin \theta$ then find $x^2 + y^2 + z^2$.

13 a) Find the equation of the circle passing through (0, 0), and having center at (-4, -3).

b) Find the vertex and focus of $4y^2 + 12x - 20y + 67 = 0$.

14 a) Find $\lim_{x \rightarrow 1} \frac{\tan(x-1)}{x^2 - 1}$.

b) Using Euler's theorem show that $x \frac{\partial u}{\partial x} + y \frac{\partial u}{\partial y} = \frac{1}{2} \tan u$ for the function

$$u = \sin^{-1} \left(\frac{x+y}{\sqrt{x} + \sqrt{y}} \right)$$

15 a) Evaluate $\int \frac{c^x(1+x)}{\cos^2(xe^x)} dx$.

b) Evaluate $\int_0^{\pi} \frac{1}{1 + \sin x} dx$.

16 a) Solve $\frac{dy}{dx} = \frac{1+y^2}{1+x^2}$.

b) Solve $(x^3 - 3xy^2) dx + (3x^2y - y^3) dy = 0$.

17 a) Find the Laplace transform of $e^{-2t} + t^2 - \cos 3t$.

b) Find the Laplace transform of $e^t \cos^2 t$.

18 a) Solve $\cos^2 x \frac{dy}{dx} + y = \tan x$.

b) If $x^3 + y^3 = 3axy$ then prove that $\frac{d^2y}{dx^2} = - \frac{2a^2xy}{(y^2 - ax)^3}$.

FACULTY OF PHARMACY
Pharm. D (6 YDC) I-Year (Instant) Examination, March 2018

Subject : Biology

Time : 3 Hours

Max. Marks: 70

Note: Answer all questions from Part – A, answer any five questions from Part-B.

PART – A (10 x 2 = 20 Marks)

- 1 Ribosome
- 2 Algae
- 3 Legums
- 4 Differences between Animal cell and plant cell
- 5 Placentation
- 6 Root system
- 7 Rhizome
- 8 Guttation
- 9 Metamorphosis
- 10 Venom of snake

PART – B (5 x 10 = 50 Marks)

- 11 (a) Give an account of cell inclusions in plants.
(b) Explain complex tissue system in plants (5+5)
- 12 (a) Write about Bentham and Hooker's classification of plant kingdom.
(b) Write a note on aerial stem modification. (5+5)
- 13 (a) Describe the structure of flower. (3)
(b) Write a note on inflorescence and explain Racemose inflorescence. (7)
- 14 (a) Give an account of TCA cycle.
(b) Discuss the structure of penicillium and give an account of its economic importance. (5+5)
- 15 (a) Describe the anatomy of dicot root.
(b) Write a detailed note on simple fruits. (5+5)
- 16 (a) Describe the economic importance and medicinal values of solanaceae plants.
(b) Give an account on floral character of Liliaceae. (5+5)
- 17 (a) Describe the salient features of skin of frog.
(b) Write a detailed note on respiration in frog. (5+5)
- 18 (a) Write the distinguishing general character of class mammals and write about the subclasses included in this class.
(b) Give the medicinal importance of classes Pisces and Aves. (5+5)

FACULTY OF PHARMACY
Pharm. D (6 YDC) I-Year (Instant) Examination, March 2018

Subject : Pharmaceutical Inorganic Chemistry

Time : 3 Hours**Max. Marks: 70**

Note: Answer all questions from Part – A, answer any five questions from Part-B.

PART – A (10 x 2 = 20 Marks)

- 1 Write the preparation of 0.2M perchloric acid.
- 2 Define primary and secondary standards with examples?
- 3 Define errors and classify them?
- 4 What is Common ion effect?
- 5 What are masking and demasking agents?
- 6 Write the preparation and uses of Magnesium sulphate.
- 7 Define antiacids with examples.
- 8 Explain the uses of bentonite.
- 9 Write the composition of Oral rehydration salt.
- 10 Write the preparation and uses of sodium bisulphate.

PART – B (5 x 10 = 50 Marks)

- 11 Explain the neutralization curve of following titrations and calculate equivalence point and pH
(a) Strong acid – strong base (5)
(b) Weak acid – strong base (5)
- 12 Explain various steps involved in gravimetric analysis and enlist any two applications. (8+2)
- 13 (a) List out various pM indications and explain in detail about any two indicators. (3+3)
(b) Explain Volhard's method. (4)
- 14 Explain the preparation, properties, assay and uses of aluminum hydroxide gel. (2+2+4+2)
- 15 Explain the physiological role of copper and zinc. (5+5)
- 16 Write the principles, apparatus and procedure involved in limit test for Arsenic. (3+3+4)
- 17 (a) Write about method of preparation, assay and uses of calcium gluconate. (2+3+1)
(b) Write about end point detection in Redox titrations. (4)
- 18 (a) Write about types of solvents used in non-aqueous titrations. (6)
(b) Write the preparation and uses of Ammonium chloride and Nitrous oxide. (2+2)

FACULTY OF PHARMACY
Pharm. D (6 YDC) I-Year (Instant) Examination, March 2018

Subject : Pharmaceutical Organic Chemistry

Time : 3 Hours**Max. Marks: 70**

Note: Answer all questions from Part – A, answer any five questions from Part-B.

PART – A (10 x 2 = 20 Marks)

- 1 Define electrophile with examples.
- 2 Write the structural formula for the following:
 - (a) 2-ethyl -1-methyl butane
 - (b) 2 – hydroxyl-4-pentanone
- 3 Define Baye's strain theory.
- 4 Why chlorobenzene undergoes electrophonic?
- 5 Why acetic acid is stronger than ethanol?
- 6 Write the structure and medicinal uses of the following:
 - (a) Dimercaprol (b) Lactic acid
- 7 Why phenols are much more acidic than alcohols?
- 8 Write about Wittig Reaction.
- 9 Describe the various rules governing Resonance.
- 10 Define free radicals with examples.

PART – B (5 x 10 = 50 Marks)

- 11 Define free radical substitution reaction. Explain the mechanism of halogenations of alkanes.
- 12 Explain a note on E₁ and E₂ mechanism.
- 13 Explain the following:
 - (a) Markovnikov's addition
 - (b) Free radical addition
- 14 Explain in detail about acyl substitution reaction with four examples.
- 15 Describe the mechanism and stereochemistry of S_N¹ reaction.
- 16 Write the reaction and mechanism of
 - (a) Cannizaro reaction
 - (b) Reformatsky reaction
- 17 Write the structure, preparation, assay and uses of the following:
 - (a) Asprin
 - (b) Saccharin sodium
- 18 Explain the following:
 - (a) Basicity of amines
 - (b) Benzoin condensation

FACULTY OF PHARMACY
Pharm. D (6 YDC) I-Year (Instant) Examination, March 2018

Subject : Pharmaceutics

Time : 3 Hours**Max. Marks: 70**

Note: Answer all questions from Part – A, answer any five questions from Part-B.

PART – A (10 x 2 = 20 Marks)

- 1 Define Lotions and liniments with examples.
- 2 Differentiate eye drops and ear drops.
- 3 Write a note on handling of prescription.
- 4 What will be the dose of a child of age 8 years when adult dose of a drug is 400 mg?
- 5 Write a brief note on British Pharmacopoeia.
- 6 Write the importance of colors in pharmaceutical preparations.
- 7 Write a note on sutures.
- 8 What is the principle involved in the preparation of turpentine liniment?
- 9 Define Eutectic mixtures with examples.
- 10 Identify the Incompatibility and suggest a remedy for the following prescription.

R_x

Castor oil - 'X' ml
Purified water – Q.S.
Make an emulsion

PART – B (5 x 10 = 50 Marks)

- 11 Define posology. Add a note on factors affecting selection of dose.
- 12 Write a note on development of pharmaceutical industry in India and its growth prospects.
- 13 Write a note on:
(a) LISP
(b) I.P.
- 14 Write preparation methods of
(a) Insufflations (b) Dusting powder
(c) Eutectic mixture (d) Explosive powders
- 15 Write a brief note on formulation of
(a) Gargles (b) mouth washes (c) Liniments
- 16 Define suspensions. Add a note on advantages, disadvantages and classification of suspensions.
- 17 Write a note on different maceration and percolation methods.
- 18 Define Incompatibility and write a note on therapeutic incompatibility with examples.

FACULTY OF PHARMACY
Pharm. D (6 YDC) I-Year (Main) Examination, July 2017

Subject : Human Anatomy and Physiology

Time : 3 Hours

Max. Marks: 70

Note: Answer all questions from Part - A and answer any five questions from Part-B.

PART – A (10 x 2 = 20 Marks)

- 1 What is reflex and reflex arc?
- 2 What are the functions of skin?
- 3 Define peptic ulcer and gastritis.
- 4 Write a note on heart valves.
- 5 Give the composition of blood and lymph.
- 6 Define the terms action potential and membrane potential.
- 7 List out the bones of orbit.
- 8 Discuss transcytosis with example.
- 9 Write a note on posterior pituitary gland secretion and its functions.
- 10 Explain symport and antiport with examples.

PART – B (5 x 10 = 50 Marks)

- 11 (a) Classify muscular tissue. Describe the anatomical features of skeletal muscle tissue.
(b) Write a note on sliding mechanism of skeletal muscle contraction.
- 12 (a) Enumerate the events of cardiac cycle.
(b) Write a note on pulmonary circulation.
- 13 (a) Describe the structure of kidney with a neat labeled diagram.
(b) Explain the physiology of urine formation.
- 14 (a) Describe the events of clotting mechanism.
(b) Write a note on skeletal muscle pump and respiratory pumps.
- 15 (a) Describe the structure and functions of cerebral hemispheres with a neat labeled diagram.
(b) Give a note on basal ganglia.
- 16 (a) Describe the anatomical features of GIT with a neat labeled diagram.
(b) Write a note on salivary glands and taste buds.
- 17 (a) Discuss in detail about the synthesis, storage, transportation, and functions of thyroid gland.
(b) Write a note on lung volumes and lung capacities.
- 18 Write a note on :
(a) Oogenesis
(b) Physiology of menstruation

FACULTY OF PHARMACY
Pharm. D (6 YDC) I-Year (Main) Examination, July 2017

Subject : Remedial Mathematics

Time : 3 Hours

Max. Marks: 70

Note: Answer all questions from Part - A and answer any five questions from Part-B.

PART – A (10 x 2 = 20 Marks)

- 1 If $A = \begin{bmatrix} 1 & 2 \\ 0 & -1 \end{bmatrix}$ and $B = \begin{bmatrix} 0 & -1 \\ 2 & 3 \end{bmatrix}$ then find AB^{-1} .
- 2 Find the slope of the line joining points (2, 5) and (-4, 6).
- 3 If $\cos A = \frac{12}{13}$ then find $\cot A$.
- 4 If $y = (3x^2 + 2x + 1)^{1/3}$ find $\frac{dy}{dx}$.
- 5 Find $\int_0^{\pi/2} \cos^2 x dx$.
- 6 Find order and degree of the differential equation

$$\frac{d^3 y}{dx^3} + \frac{d^2 y}{dx^2} + \left(\frac{dy}{dx} \right)^3 + y = 0.$$
- 7 Find the Laplace transform of $\cos^2 t$.
- 8 Find the center and radius of the circle $x^2 + y^2 + 2x - 4y + 5 = 0$.
- 9 Find $\lim_{x \rightarrow -7} \frac{2x^2 - 98}{x + 7}$.
- 10 If $u = 3xy - y^3 + (y^2 - 2x)^{3/2}$ then find $\frac{\partial^2 u}{\partial x^2}$.

PART – B (5 x 10 = 50 Marks)

- 11 (a) Show that $\begin{vmatrix} 1 & a & a^2 - bc \\ 1 & b & b^2 - ca \\ 1 & c & c^2 - ab \end{vmatrix} = 0$.
- (b) If $A = \begin{bmatrix} 2 & 3 & 1 \\ 6 & -1 & 5 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 2 & -1 \\ 0 & -1 & 3 \end{bmatrix}$
 Then find C such that $A + B - C = 0$.
- 12 (a) $\sin A = 8/17$ then find $\cos (A + B)$.
- (b) Simplify $\sqrt{\frac{1 + \tan^2 A}{1 + \cot^2 A}}$
- 13 (a) Find the equation of the circle passing through (1, 1), (2, 1) and (3, 2).
- (b) Find the value of k if the line $2y = 5x + k$ is a tangent the parabola $y^2 = 6x$.

..2..

14 (a) $\lim_{x \rightarrow 2} (2x^2 + 3a + 5) = 3$ then find 'a'.

(b) If $z = \log(\tan x + \tan y)$ then show that

$$\sin 2x \frac{\partial z}{\partial x} + \sin 2y \frac{\partial z}{\partial y} = 2$$

15 (a) Evaluate $\int \frac{\cot x}{\log(\sin x)} dx$.

(b) Evaluate $\int_0^4 \frac{x^2}{1+x} dx$.

16 (a) Solve $(x^2 + y^3)dx = 2xydy$

(b) Solve $\frac{dy}{dx} - \frac{2y}{1+x} = (1+x)^3$.

17 (a) Find the Laplace transform of $e^t \sin^2 t$.

(b) Find the Laplace transform of
 $t^6 + e^{-t} \sin t + e^t \cos t$

18 (a) If $u = \tan^{-1}\left(\frac{y}{x}\right) + e^{-\frac{x}{y}}$ then find $x \frac{\partial u}{\partial x} + y \frac{\partial u}{\partial y}$.

(b) Solve $\frac{dy}{dx} = \frac{y^2}{x^2}$.

ST PAULS COLLEGE OF PHARMACY

FACULTY OF PHARMACY
Pharm. D (6 YDC) I-Year (Main) Examination, July 2017

Subject : Biology

Time : 3 Hours

Max. Marks: 70

Note: Answer all questions from Part - A and answer any five questions from Part-B.

PART – A (10 x 2 = 20 Marks)

- 1 What is a Bulb?
- 2 Explain Poikilothermy.
- 3 Write about Mitochondria.
- 4 Explain Guttation.
- 5 What are Fungi?
- 6 What is Thallus?
- 7 Explain about monocot seed.
- 8 Write about Leaf.
- 9 What is Schlerenchyma?
- 10 Explain Taproot system.

PART – B (5 x 10 = 50 Marks)

- 11 (a) Explain the natural system of plant classification.
(b) Describe different elements and functions of phloem.
- 12 (a) Write about shoot system and explain the stem modifications.
(b) Describe the cymose inflorescence.
- 13 (a) Describe the anatomy of dicot leaf.
(b) Write about penicillins.
- 14 (a) Write about general characters of leguminosae and list out the economic importance and medicinal uses.
(b) Give an account on floral characters of solanaceae plants.
- 15 (a) Describe the light reactions of photosynthesis.
(b) Write an note on absorption of water and minerals in plants.
- 16 (a) Give a detailed note on typical animal cell.
(b) Write about various types of fruits.
- 17 (a) Describe the respiration in pisces.
(b) Write the salient features of Aves.
- 18 (a) Explain about the circulatory system in frog.
(b) Write in detail about the structural features of frog belonging to class Amphibia.

FACULTY OF PHARMACY**Pharm. D (6 YDC) I-Year (Main) Examination, July 2017****Subject : Pharmaceutical Inorganic Chemistry****Time : 3 Hours****Max. Marks: 70*****Note: Answer all questions from Part - A and answer any five questions from Part-B.*****PART – A (10 x 2 = 20 Marks)**

- 1 Calculate the normality for 500 ml solution containing 4 gm of sodium hydroxide
- 2 Define accuracy and precision.
- 3 What are co-precipitation, occlusion and post-precipitation?
- 4 Distinguish Iodometry and Iodimetry.
- 5 What is Mohr's method?
- 6 Explain the use of fluorides as anticaries agents.
- 7 What is an impurity? How inorganic impurities are reduced in pharmaceutical preparation?
- 8 Write about electrolyte replenishes.
- 9 Write the mechanism of action and uses of sodium bisulphate.
- 10 What is an Arrhenius acid and Arrhenius base? Give an example of each.

PART – B (5 x 10 = 50 Marks)

- 11 Explain in detail about the neutralization curve for the following titration with calculation of equivalence point and pH.
 - (a) Strong acid-Strong base
 - (b) Weak acid-Weak base
- 12
 - (a) Write about the different types of acidifiers and give their examples.
 - (b) Write the method of preparation, properties and uses of calcium carbonate.
- 13
 - (a) What are antimicrobials?
 - (b) Write the method of preparation, assay and uses of potassium permanganate and silver nitrate.
- 14 What is an antidote? Write the method of preparation, assay and uses of sodium metabisulphite.
- 15 Explain about the physiological role of Copper and Iodine.
- 16
 - (a) Give the general procedure for the limit test of sulphates.
 - (b) Write the preparation and uses of oxygen and carbon-dioxide.
- 17
 - (a) What is replacement therapy? Write the importance of calcium in the body.
 - (b) Mention the method of preparation, assay and uses of calcium chloride.
- 18
 - (a) Write about the clinical applications of Radiopharmaceuticals.
 - (b) Define and classify Pharmaceutical aids.

FACULTY OF PHARMACY
Pharm. D (6 YDC) I-Year (Main) Examination, July 2017

Subject : Pharmaceutics

Time : 3 Hours

Max. Marks: 70

Note: Answer all questions from Part - A and answer any five questions from Part-B.

PART – A (10 x 2 = 20 Marks)

- 1 Differentiate between lotion and liniment.
- 2 Calculate the amount of 95% alcohol required to prepare 400 ml of 60% alcohol.
- 3 Write a note on Aromatic spirit of Ammonia.
- 4 Differentiate between Decoction and infusion.
- 5 What will be the dose for a child of 8 years if the adult dose is 200 mg?
- 6 Mention the various reasons which causes therapeutic incompatibility.
- 7 Write a note on absorbable gelatin sponge.
- 8 Define the terms, collodions and linctuses.
- 9 Write the brief about dusting powders.
- 10 What are official compendia and non-official compendia?

PART – B (5 x 10 = 50 Marks)

- 11 Explain the reasons for instability of emulsions and mention the remedies to minimize them.
- 12 Define suppositories. Discuss in detail various kinds of bases used for the preparation of suppositories.
- 13 (a) Write a note on British pharmacopoeia.
(b) Convert the following:
60° O.P. and 35° U.P. to % v/v of alcohol and 40% v/v and 75% v/v alcohol to proof spirit.
- 14 (a) Explain parts of prescription with typical example.
(b) Describe the procedure adopted by pharmacist while handling prescription.
- 15 Write the principle and procedure for the preparation of :
(a) Calamine Lotion
(b) Turpentine Liniment
- 16 Explain different physical incompatibilities and describe the remedies to handle them.
- 17 (a) Explain the maceration methods for organized and unorganized drugs with examples.
(b) Write a note on medicated bandages.
- 18 Define posology. Explain different factors influencing selection of dose.

FACULTY OF PHARMACY
Pharm. D (6 YDC) I-Year (Main) Examination, July 2017

Subject : Medicinal Biochemistry

Time : 3 Hours

Max. Marks: 70

Note: Answer all questions from Part - A and answer any five questions from Part-B.

PART – A (10 x 2 = 20 Marks)

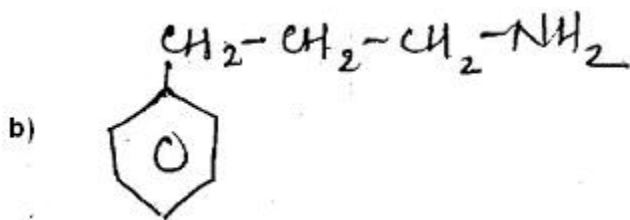
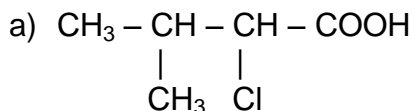
- 1 Explain briefly the role of hormones in water and sodium homeostasis in the body.
- 2 What are apoproteins ? Write their functions.
- 3 What is RIA? Write any two clinical applications of the same.
- 4 What are coenzymes? Write the biochemical role of Nicotinamide coenzymes.
- 5 Write the biochemical organization and functions of plasma membrane.
- 6 What is Fatty liver? Write the different causes.
- 7 What is urine concentration test? Write the diagnostic significance.
- 8 Write briefly about metabolic acidosis and compensatory mechanisms for its correction.
- 9 What is Biological oxidation?
- 10 Write the significance of Glucose tolerance test.

PART – B (5 x 10 = 50 Marks)

- 11 Explain in detail DNA replication process in prokaryotes.
- 12 What is ELISA? Explain the principle and techniques involved in various types with their applications.
- 13 (a) Explain the nomenclature and classification of enzymes.
(b) Write the biological significance of ATP.
- 14 (a) List out various abnormal constituents in urine sample. Explain the tests to detect glucose, proteins and ketone bodies in urine.
(b) Explain hormonal regulation of Lipid metabolism.
- 15 Explain the steps involved in gluconeogenesis and explain its significance.
- 16 Explain Krebs's cycle with its regulation.
- 17 (a) Explain the synthesis of Bile salts from cholesterol.
(b) Write short notes on disorders of Lipoproteins.
- 18 (a) Explain DNA repair mechanisms.
(b) Explain urea cycle and its metabolic disorders.

FACULTY OF PHARMACY**Pharm D (6 – YDC) I – Year (Main) Examination, July 2017****Subject: Pharmaceutical Organic Chemistry****Time: 3 Hours****Max.Marks: 70****Note: Answer all questions from Part – A. Any Five questions from Part – B.****PART – A (10x2 = 20 Marks)**

1 Write IUPAC names of the following:



- 2 Explain different types of intermolecular forces.
- 3 Write any one preparation methods of cyclopentane.
- 4 Explain the stability of carbocations.
- 5 Write a note on hyper conjugation.
- 6 Write the uses of citric acid and saccharin sodium.
- 7 Why is acetylene acidic in nature?
- 8 Define electrophiles and nucleophiles and give examples.
- 9 What is optical isomerism?
- 10 What is resonance? Give examples.

PART – B (5x10 = 50 Marks)

- 11 a) Explain the reaction and mechanism of Markownikoff addition of alkene. 5
- b) Explain Bayer's strain theory and give its limitations. 5
- 12 Explain the mechanism and stereochemistry of SN_1 and SN_2 reactions with examples. 10
- 13 a) Discuss the effect of halogen on electrophilic aromatic substitution of alkyl benzene. 5
- b) Write the reaction and mechanism of Aldol condensation. 5

- 14 Explain the mechanism of E_1 and E_2 reactions with examples. 10
- 15 Write the preparation, assay and uses of following:
- a) Aspirin 3
 - b) Urea 3
 - c) Tartaric acid 4
- 16 Explain the reaction and mechanism of:
- a) Reformat sky reaction
 - b) Fries Rearrangement
- 17 Discuss the electrophilic substitution reactions of benzene with examples. 10
- 18 Write notes on:
- a) Polarity of molecules 3
 - b) Geometrical isomerism 3
 - c) Acidity of phenol 4

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FACULTY OF PHARMACY**Pharm D (6 – YDC) I – Year (Main & Backlog) Examination, August 2016****Subject: Pharmaceutics****Time: 3 Hours****Max.Marks: 70****Note: Answer all questions from Part – A. Any Five questions from Part – B.****PART – A (10x2 = 20 Marks)**

- 1 How will you distinguish between w/o and o/w type emulsions.
- 2 Define displacement value. Write its importance in the preparation of suppository.
- 3 What will be the dose for a child of 5 years if the adult dose of a drug is 400 mg.
- 4 Write about the principle involved in the preparation of calamine lotion.
- 5 Define the following:
 - a) Tinctures
 - b) Collodions
- 6 Classify dosage forms with suitable examples.
- 7 Why pharmaceutical preparations are coloured?
- 8 Write a note on absorbable gelatin sponge.
- 9 Convert 50.16% v/v strength of alcohol into proof spirit.
- 10 Define prescription, name the parts of prescription.

PART – B (50 Marks)

- 11 a) Discuss the formulation of suspensions with suitable examples. 6
b) Write a note on USP. 4
- 12 Explain different parts of percolator with help of neat diagram and describe methodology of percolation. 10
- 13 What is posology? Explain different factors influencing selection of dose. 10
- 14 a) Explain different therapeutic incompatibilities and describe the remedies to handle them. 8
b) Differentiate between maceration and percolation. 2
- 15 a) Describe history of pharmacy education and pharmaceutical industry in India. 6
b) Write a note on sutures and ligatures. 4
- 16 Explain different ingredients present in effervescent granules and preparation of effervescent granules. 10
- 17 a) What are suppositories? Write a note on evaluation of suppositories. 6
b) Discuss in brief types of flavours used in pharmaceutical products. 4
- 18 Write short notes on: 10
 - a) Enemas
 - b) Nasal drops

FACULTY OF PHARMACY**Pharm. D I-Year (6-YDC) (Main & Backlog) Examination, August 2016****Subject : Pharmaceutical Inorganic Chemistry****Time : 3 Hours****Max. Marks: 70*****Note: Answer all questions from Part - A and answer any five questions from Part-B.*****PART – A (10 x 2 = 20 Marks)**

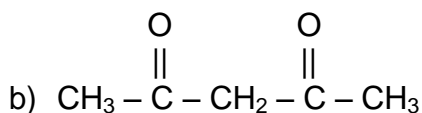
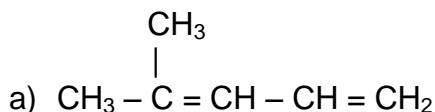
- 1 Write the ideal properties of antacids.
- 2 What is an impurity? How the impurities are reduced in pharmaceutical preparation?
- 3 Define an Error. What are the different types of errors?
- 4 Calculate the normality for 250 ml solution containing 10 gm of Calcium carbonate.
- 5 Write the principle involved in the Mohr titration method.
- 6 What is the Law of Mass Action?
- 7 Write the physiological role of Zinc as an essential trace element.
- 8 Mention the method of preparation of "Milk of magnesia".
- 9 Give one preparation method and uses of Hydrogen peroxide.
- 10 What are pharmaceutical aids? Give classification with examples.

PART – B (5 x 10 = 50 Marks)

- 11 Explain in detail about the neutralization curve for the following titrations with calculation of equivalence point and PH.
 - (a) Strong acid – Strong base (5)
 - (b) Weak acid – Strong base (5)
- 12 (a) Explain how the end point is detected in Complexometric titrations. (5)
(b) Write a note on theories of indicators. (5)
- 13 (a) Give the general procedure for the limit test of iron. (5)
(b) Write the preparation and uses of oxygen and carbon-dioxide. (5)
- 14 (a) Explain the mechanism of action of anti-microbial agents with examples. (5)
(b) Discuss the role of sodium fluoride in Dental caries. (5)
- 15 (a) Give the importance of chloride ions in Replacement therapy. (5)
(b) What is gravimetric analysis? What are the factors influencing the solubility of precipitation in gravimetric analysis. (5)
- 16 Write a note on Limit test for Arsenic with a neat labeled diagram. (10)
- 17 (a) What are Expectorants? Write the mechanism of action with examples. (5)
(b) Write the preparation, properties and uses of purified water. (5)
- 18 What are Radio pharmaceuticals? Write about its properties and add a note on units used for its measurement. (10)

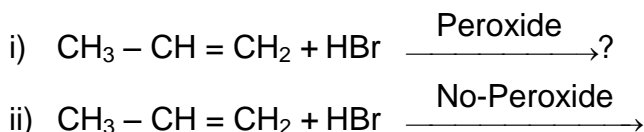
FACULTY OF PHARMACY**Pharm D (6 – YDC) I – Year (Main / Backlog) Examination, August 2016****Subject: Pharmaceutical Organic Chemistry****Time: 3 Hours****Max. Marks: 70****Note: Answer all questions from Part – A. Any Five questions from Part – B.****PART – A (10x2 = 20 Marks)**

- 1 Write the IUPAC name of the following:



- 2 Give the step involved in the conversion of aniline into para-nitro aniline.
- 3 Give the structure formula of
- Methyl-1-penten-4-yne
 - 5-Hydroxy-3-hexenal
- 4 Comment on ethanol and dimethyl ether are isomer, but differ in the boiling point.
- 5 Briefly explain Bayer's strain theory.
- 6 Write the different between SN_1 and SN_2 .
- 7 Explain Saytzeff rule.
- 8 Classify each of the following nucleophil or electrophil
- 1) NH_2 2) H_3O^+ 3) CN^- 4) Cl_2

- 9 Predict the product



- 10 Explain Cannizzaro reaction.

PART – B (5x10 = 50 Marks)

- 11 Explain the nucleophilic substitution reaction with Mechanism. 10
- 12 Explain with mechanism: 10
- Aldol-condensation
 - Sadmeier's reaction

- 13 Define rearrangement reaction. Explain mechanism of following reaction. 10
- i) Fries rearrangement reaction
 - ii) Hoffman rearrangement reaction.
- 14 Explain the mechanism of electrophilic substitution reaction taking a suitable example. 10
- 15 Write the short notes on: 10
- i) Resonance concept
 - ii) Acid-Base theory.
- 16 Explain mechanism involved in following reaction: 10
- i) Kolbe reaction
 - ii) Michael addition
- 17 a) Explain Friedel-Craft Alkylation reaction and write its drawback.
- b) Write a note on activating and deactivating O, P and M directing group.
- 18 a) Explain diazo-coupling reaction with mechanism.
- b) Write a note on elimination reaction.

FACULTY OF PHARMACY

Pharm D (6 – YDC) I – Year (Main) Examination, August 2016

Subject: Medicinal Biochemistry

Time: 3 Hours

Max.Marks: 70

Note: Answer all questions from Part – A. Any Five questions from Part – B.

PART – A (10x2 = 20 Marks)

- 1 What is genetic code? Write characteristic features of genetic code.
- 2 What is cystinuria? Write its clinical consequence.
- 3 What is Atherosclerosis? Explain briefly its pathogenesis.
- 4 Write the characteristics of carrier mediated transport systems.
- 5 Define Michaelis menten constant and write its significance.
- 6 What is an isoenzyme? Write clinical applications of isoenzymes.
- 7 What is creatinine clearance? Write its diagnostic significance.
- 8 What are frame shift mutations? Write the consequences of the same.
- 9 What are transamination reactions? Give one example.
- 10 Explain the role of various DNA polymerases in prokaryotic replication process.

PART – B (5x10 = 50 Marks)

- 11 Outline various steps involved in Eukaryotic protein synthesis.
- 12 Write notes on blood buffers and explain disorders of acid-base balance.
- 13 a) Explain the factors influencing enzyme action.
b) Write the biosynthesis and biological significance of cyclic AMP.
- 14 a) List out various liver function tests and explain the tests based on synthetic function of liver.
b) Write notes on urinary calculi.
- 15 Explain the steps involved in glycolytic pathway and explain energetics under aerobic and anaerobic conditions.
- 16 Write the structural components of electron transport chain and explain the mechanism of electron transport.
- 17 Write the steps involved in ketogenesis and explain its regulation. Add a note on ketoacidosis.
- 18 Explain the methods for determination of sodium, potassium and bicarbonates in body fluids.

FACULTY OF PHARMACY**Pharm D (6 – YDC) I – Year (Main / Backlog) Examination, August 2016****Subject: Remedial Mathematics****Time: 3 Hours****Max.Marks: 70****Note: Answer all questions from Part – A. Answer any Five questions from Part – B.****PART – A (10x2 = 20 Marks)**

1 If $A = \begin{bmatrix} -1 \\ 2 \\ 3 \end{bmatrix}$ and $B = \begin{bmatrix} 3 \\ -1 \\ 2 \end{bmatrix}$, find AB^T .

2 If $\begin{vmatrix} -2 & 5 \\ 6 & x \end{vmatrix} = 0$, find x.

3 Find the slope of the line joining points (1, 2) and (-3, -4).

4 Find the centre and radius of the circle $x^2 + y^2 - 6x + 1 = 0$.

5 Evaluate $\int_0^1 x e^x dx$.

6 Find the order and degree of differential equation $\left(\frac{d^2y}{dx^2}\right)^2 + \frac{dy}{dx} + y = 0$.

7 Find $\lim_{x \rightarrow 2} \frac{x^2 - 1}{x - 1}$.

8 Solve $y dx + x dy = 0$.

9 Find the Laplace transform of $5e^{2t} + e^{5t}$.

10 If $z = x^2 + \log(1+y^2)$, find $\frac{\partial z}{\partial x}$ and $\frac{\partial z}{\partial y}$.

PART – B (5x10 = 50 Marks)

11 a) Show that $\begin{vmatrix} y+z & x & x \\ y & z+x & y \\ z & x+y & x \end{vmatrix} = 4xyz$.

b) If $A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$, $B = \begin{bmatrix} 2 & 3 \\ 4 & 5 \end{bmatrix}$ and $A + B - C = 0$, then find C.

12 a) If $\sin A = \frac{3}{5}$ and $\sin B = \frac{5}{3}$, then find $\sin(A+B)$.

b) If $x = r \cos \theta \cos \alpha$, $y = r \cos \theta \sin \alpha$ and $z = r \sin \theta$, then find $x^2 + y^2 + z^2$.

13 a) Find the equation of the circle passing through (3, 4), (3, 2) and (1, 4).

b) Find vertex and focus of $x^2 - 6x - 6y + 6 = 0$.

14 a) Show that $\lim_{x \rightarrow 1} \frac{\sin(x-1)}{x^2-1} = \frac{1}{2}$.

b) If $u = \sec^{-1} \left(\frac{x^3 - y^3}{x + y} \right)$, then show that $x \frac{\partial u}{\partial x} + y \frac{\partial u}{\partial y} = 2 \cot u$.

15 a) Evaluate $\int_0^{1/2} \frac{x \sin^{-1} x}{\sqrt{1-x^2}} dx$.

b) Evaluate $\int_0^{\pi/3} \frac{\cos x}{3 + 4 \sin x} dx$.

16 a) Solve $\frac{dy}{dx} + y \tan x = \sin x$.

b) Solve $\frac{dy}{dx} = \frac{y}{xy + x}$.

17 a) Find the Laplace transform of $e^{2t} + 4t^3 - 2 \sin 3t$.

b) Find the Laplace transform of $e^{-t} \sin^2 t$.

18 a) Solve $\frac{dy}{dx} = \frac{\log x + 1}{\sin y + y \cos y}$.

b) If $\lim_{x \rightarrow \frac{\pi}{2}} x(1 + a \sin x) = 1$, then find 'a'.

FACULTY OF PHARMACY

Pharm D (6 – YDC) I – Year (Main / Backlog) Examination, August 2016

Subject: Biology

Time: 3 Hours

Max.Marks: 70

Note: Answer all questions from Part – A. Answer any Five questions from Part – B.

PART – A (10x2 = 20 Marks)

- 1 What are plastids?
- 2 Write about parenchyma.
- 3 What is leaf?
- 4 Explain Tyloses.
- 5 What is Corm?
- 6 Explain Aestivation.
- 7 What is Penicillin?
- 8 Explain Ovary.
- 9 Write about common Indian Frog.
- 10 Briefly explain Naja Naja.

PART – B (5x10 = 50 Marks)

- 11 a) Write a note on phylogenetic system of classification.
b) Describe the structure of typical plant cell.
- 12 a) Explain about the permanent tissues in plants with a detailed note on phloem.
b) Write a note on leaf modifications.
- 13 a) Describe the cymose inflorescence.
b) Describe the structure of flower.
- 14 a) Give the general characters of solanaceae.
b) Write about the general characters, economic importance and medicinal uses of umbelliferae plants.
- 15 a) What are fungi? How are they classified? Give the pharmaceutical importance of yeasts.
b) Write a note on animal tissues.
- 16 a) What is transpiration? Give an account of the mechanism of opening and closing of stomata.
b) Describe the various steps in Krebs cycle.
- 17 a) Describe the respiration in Pisces.
b) Write the salient features of Aves.
- 18 a) Describe the circulatory system in frog.
b) Write a note on poisonous animals.

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FACULTY OF PHARMACY

Pharm. B. Year (I-Yr) (Main & Backlog) Examination, August 2015

Subject: Human Anatomy and Physiology

Time : 3 Hours

Code No. 8102

Max. Marks: 70

Note: Answer all questions from Part - A and answer any five questions from Part-B.

PART - A (10 x 2 = 20 Marks)

- 1 Describe how the skeleton is divided into axial and appendicular divisions.
- 2 Describe the functions of blood.
- 3 What is the role of thymus in immunity?
- 4 Define pulse, systolic and diastolic pressure.
- 5 What is the difference between a lung volume and lung capacity?
- 6 How is pancreatic juice secretion regulated?
- 7 What is micturition? How does the micturition reflex occur?
- 8 What is the function of lacrimal apparatus?
- 9 Where are sperm cells produced?
- 10 Define the terms:
(a) Miosis (ii) Mydriasis

PART - B (5 x 10 = 50 Marks)

- 11 How are connective tissues classified? Write a note on epithelial and muscular tissues.
- 12 Describe the location, histology, hormones and functions of the pancreatic islets.
- 13 Compare the anatomical components of the sympathetic and parasympathetic divisions of the autonomic nervous system.
- 14 Describe the anatomy of the structures in the three main regions of the ear.
- 15 Describe the location, anatomy, histology and functions of small intestine.
- 16 Draw a neat labeled diagram of heart. Explain in detail about cardiac cycle.
- 17 Describe the events that cause inhalation and exhalation. Explain how the nervous system controls breathing.
- 18 Describe the gross anatomical features of the kidney and write the functions of urinary system.

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Code No. 8103

6th Year (6-YDC) (Main & Backlog) Examination, August 2015

Subject: Pharmaceutics

Time : 3 Hours

Max. Marks: 70

Note: Answer all questions from Part - A and answer any five questions from Part-B.

PART – A (10x2=20 Marks)

- 1 Differentiate between flocculated and deflocculated suspensions.
- 2 Write about coloring agents used in the preparation of monophasic dosage forms.
- 3 What are surgical ligatures?
- 4 Write in brief about handling of prescription.
- 5 Mention the ideal properties of suppositories bases.
- 6 Write about insufflations.
- 7 What percent strength of alcohol corresponds to 30° O/P?
- 8 What are dusting powders?
- 9 How many milliliters of 2.5% liquefied phenol required to compound 240 ml calamine lotion?
ant
$$\frac{2.5\% \times 240}{100}$$
 vol req.
- 10 How are 'tooth powders' prepared?

PART – B (5x10=50 Marks)

- 11 Discuss the various instability problems associated with emulsion.
- 12 Explain the history of Indian Pharmacopoeia and United State Pharmacopoeia.
- 13 Describe the various methods of preparation of spirits and tinctures with some official examples.
- 14 Explain the background and progress in pharmacy education and pharmaceutical industry in India.
- 15 (a) Find the concentration of NaCl required to make 1% solution of Boric acid iso-osmotic with blood plasma. [F.P. of 1% w/v solution of NaCl is -0.576°C and F.P. of 1% w/v solution of Boric acid is -0.288°C].
(b) Prepare 250 ml of sucrose 10%, using sucrose 5% and sucrose 50%. How many milliliters of each will be needed?
- 16 Write short notes on following:
(a) Physical Incompatibilities
(b) Evaluation of suppositories
- 17 Explain the various methods of preparation of emulsion.
- 18 What is dosage form? Give detail classification along with definition of various dosage forms.

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Code No. 8105

Time : 3 Hours

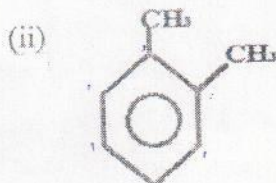
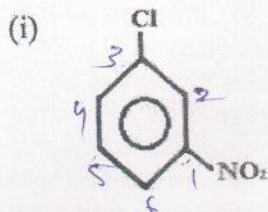
Max. Marks: 70

Note: Answer all questions from Part - A and answer any five questions from Part-B.

PART - A (10x2=20 Marks)

1 Define Isomerism with suitable examples.

2 Write the IUPAC names of the following:



3 Write the structure and uses of Vanillin.

4 Explain the acidic nature of acetylene.

5 How do you identify the alcohols?

6 Alcohols have higher boiling point compared to the corresponding alkanes. Why?

7 Explain the Saytzev's rule.

8 Write any method for the synthesis of cyclopentane.

9 Explain the Friedel-Crafts Alkylation.

10 Write the structure of the product of the Diels-Alder reaction between maleic anhydride and isoprene.

PART - B (5x10=50 Marks)

11 (a) Explain the stereochemistry of SN1 and SN2 reactions. (7)

(b) Why conjugated dienes are more stable compared to non-conjugated dienes? (3)

12 (a) Mention any three methods for synthesis of alcohols. (7)

(b) How do you distinguish 1°, 2°, 3° alcohols in laboratory and explain the reactions? (3)

13 (a) Discuss the Halogenation of alkanes including its mechanism. (6)

(b) Explain in detail about Hoffmann rearrangement. (4)

14 (a) Explain the sequence rules with examples. (5)

(b) Describe the chemical reactions of Aldehydes and Ketones. (5)

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**G.PULLA REDDY COLLEGE OF PHARMACY
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FACULTY OF PHARMACY

Pharm. D I-Year (6-YDC) (Main & Backlog) Examination, August 2015

Subject : Medicinal Biochemistry

Time : 3 Hours

Max. Marks: 70

Note: Answer all questions from Part - A and answer any five questions from Part-B.

PART – A (10x2=20 Marks)

- 1 Define isoenzyme and comment on their clinical significance.
- 2 Differentiate between passive transport and facilitated diffusion.
- 3 Principle and application of ELISA.
- 4 Mechanism of inhibition of protein synthesis by chloramphenicol.
- 5 Name the enzymes involved in DNA replication.
- 6 Phenyl ketonuria
- 7 Glucose Tolerance test and its clinical significance.
- 8 With suitable example explain about coenzymes and cofactors.
- 9 Reaction of Krebs cycle.
- 10 Apo lipoprotein

PART – B (5x10=50 Marks)

- 11 How insulin and epinephrine regulate glycogen metabolism?
- 12 Outline various liver function tests.
- 13 Outline the role of ribosomes in protein synthesis.
- 14 Salient features of Genetic code.
- 15 Write about different modes of Enzyme inhibition.
- 16 Point out site of inhibition by various respiratory inhibitors in the mitochondrial electron transport sequence.
- 17 How electrolyte balance is regulated in the body fluids?
- 18 Write about various steps involved in protein synthesis.

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15 Explain the mechanism involved in the following reactions :
(a) Wittig reaction (b) Aldol condensation

(5+5)

16 (a) Explain the basicity of Amines

(5)

(b) Explain the mechanism and uses of Williamson synthesis.

(5)

17 Write preparation, test for purity, assay and uses of following:

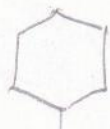
(5+5)

(a) Benzoyl benzoate

(b) Methyl salicylate

18 Predict the following

(i)



p - nitrobenzyl chloride

LiAlH(O-tBu)₃

(ii)



Benzoyl chloride

+

Benzene

AlCl₃

(iii)

isobutyl alcohol

KMnO₄

(iv)

m-Toluic acid

LiAlH₄

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FACULTY OF PHARMACY

Pharm. D I-Year (6-YDC) (Main & Backlog) Examination, August 2015

Subject : Pharmaceutical Inorganic Chemistry

Max. Marks: 70

Time : 3 Hours

Note: Answer all questions from Part - A and answer any five questions from Part-B.

PART - A (10x2=20 Marks)

- 1 What is an impurity? And how the impurities are reduced in pharmaceutical preparation.
- 2 Define an Error, What are the different types of errors?
- 3 Define Co-precipitation and Post-precipitation.
- 4 What is Volhard's method?
- 5 Write the Henderson-Hasselbalch equation.
- 6 What is an Arrhenius acid and Arrhenius base? Give an example of each.
- 7 Mention the method of preparation of "Milk of Magnesia".
- 8 Give one preparation method and uses of Nitrous oxide.
- 9 Mention the differences between iodometry and iodimetry.
- 10 Write the applications of Redox titrations.

PART - B (5x10=50 Marks)

- 11 Explain in detail about the neutralization curve for the following titrations with calculation of equivalence point and pH.
(a) Strong acid- Strong base (5)
(b) Weak acid - Weak base (5)
- 12 (a) Write about the different types of acidifiers? And give their examples. (5)
(b) Write the method of preparation, properties and uses of calcium carbonate. (5)
- 13 (a) Give the general procedure for the limit test of chlorides. (5)
(b) Write the preparation and uses of oxygen and carbon-dioxide. (5)
- 14 Explain the mechanism of action of anti-microbial agents. Give a brief account on Hydrogen peroxide. (10)
- 15 Write the preparation, properties, assay and uses of Sodium chloride in Replacement therapy. (10)
- 16 (a) Write a note on essential trace elements. (5)
(b) Explain how end point is detected in Complexometric titrations. (5)
- 17 (a) What are Expectorants? Write the mechanism of action with examples. (5)
(b) Write the preparation, limit tests and uses of purified water. (5)
- 18 What are Radio pharmaceuticals? Write about its properties and add a note on units used for its measurements. (10)

FACULTY OF PHARMACY

Pharm-D. I -Year (Instant) Examination, January 2014

Subject : Human Anatomy and Physiology

Time : 3 Hours

Max. Marks: 70

Note: Answer All questions from Section – A and any five questions from Section – B.

Section – A (10 x 2 = 20 Marks)

- | | | |
|----|---|---|
| 1 | What are the functions of Blood? | 2 |
| 2 | Define the following terms Myo cordial infarction, Angina pectorosis. | 2 |
| 3 | Define vital capacity | 2 |
| 4 | Write the functions of parathyroid hormone. | 2 |
| 5 | List the different types of taste buds and write their functions. | 2 |
| 6 | Define reflex action. | 2 |
| 7 | Write the composition of Blood. | 2 |
| 8 | What are the functions of muscular tissue? | 2 |
| 9 | What are functions of Hypothalamus? | 2 |
| 10 | Define Cardiac out put. | 2 |

Section – B (50 Marks)

- | | | |
|----|--|----|
| 11 | Discuss the structure and functions of different connective tissues. | 10 |
| 12 | Explain about natural methods of contraception. Write about functions of testosterone. | 10 |
| 13 | Define cardiac cycle and describe the events involved in cardiac cycle. | 10 |
| 14 | Explain the anatomy and physiology of ear. | 10 |
| 15 | Discuss the structure and functions of Kidney with a neat labelled diagram. | 10 |
| 16 | (a) Discuss the structure of small intestine. | 4 |
| | (b) Write about digestion of protein. | 6 |
| 17 | Write the functions of sympathetic and parasympathetic nervous system. | 10 |
| 18 | List the hormones secreted from anterior pituitary glands. Write the functions of any four Hormones. | 10 |

FACULTY OF PHARMACY**Pharm-D. I -Year (Instant) Examination, January 2014****Subject : Medicinal Biochemistry****Time : 3 Hours****Max. Marks: 70****Note: Answer All questions from Part – A and any five questions from Part – B.****Part – A (10 x 2 = 20 Marks)**

- | | | |
|----|---|---|
| 1 | Write about the membrane active transport. | 2 |
| 2 | What are the components present in the cell membranes? | 2 |
| 3 | Define the Iso enzymes, how many classes of enzymes are there according to the IUB. | 2 |
| 4 | What is fatty liver? | 2 |
| 5 | What are triglycerides, explain their significance? | 2 |
| 6 | What are Lipoproteins? | 2 |
| 7 | Explain the role of coenzyme in Biological oxidation. | 2 |
| 8 | What is Nitrogen balance? | 2 |
| 9 | What is the nucleotide? | 2 |
| 10 | Define Mutagen. Explain various types of Mutagens. | 2 |

Part – B (50 Marks)

- | | | |
|----|---|----|
| 11 | (a) Explain about Enzyme inhibition. | 5 |
| | (b) Explain about genetic code. | 5 |
| 12 | (a) Outline the steps involved in glycolysis. | 5 |
| | (b) The role of HMP shunt in the carbohydrate metabolism. | 5 |
| 13 | (a) Write about the different types of Immunoglobulins. | 5 |
| | (b) Write about the principle and application of ELISA. | 5 |
| 14 | (a) Describe the various steps in Electron transport chain. | 5 |
| | (b) Comment on inhibitors ETC. | 5 |
| 15 | (a) Write about the different types of Enzymes involved in DNA Replication process. | 5 |
| | (b) Discuss the following DNA Repair mechanism. | 5 |
| | (i) Base excision Repair | |
| | (ii) SOS Repair | |
| 16 | (a) Write about the Urea cycle. | 5 |
| | (b) Write about the HDL and LDL cholesterol. | 5 |
| 17 | (a) Write about difference between the gluconeogenesis and glycogenesis. | 5 |
| | (b) Discuss about the Transamination and decarboxylation. | 5 |
| 18 | Write a note on electrolytes. | 10 |

FACULTY OF PHARMACY**Pharm-D. I -Year (Instant) Examination, January 2014****Subject : Pharmaceutics****Time : 3 Hours****Max. Marks: 70****Note: Answer all questions from Section – A and any five questions from Section – B.****Section – A (10 x 2 = 20 Marks)**

- | | | |
|----|--|---|
| 1 | Define and classify extracts. | 2 |
| 2 | Differentiate between gargles and mouth washes. | 2 |
| 3 | Adult dose of a drug is 100 mg and weight of child is 7 kg. Calculate the child dose | 2 |
| 4 | Calculate the quantity of dextrose required for preparation of 1000ml of 1 in 400 solution. | 2 |
| 5 | Find the strength of 80% v/v alcohol in terms of proof spirit. | 2 |
| 6 | Differentiate between liniments and Lotions. | 2 |
| 7 | Mention the procedure to mix 50mg of a potent drug in 500 mg of diluents by geometric dilution method. | 2 |
| 8 | Differentiate between powders and granules. | 2 |
| 9 | What are compound dressings? | 2 |
| 10 | Mention different adjuvants used in preparation of ear drops. | 2 |

Section – B (50 Marks)

- | | | |
|----|---|----|
| 11 | (a) Mention ideal characteristics of suppository base. | 4 |
| | (b) Explain different types of suppository bases with suitable examples. | 6 |
| 12 | (a) Explain different types of surgical dressings. | 5 |
| | (b) Mention the factors of an ideal dressing. | 5 |
| 13 | Describe different physical incompatibilities and mention the methods to overcome them. | 10 |
| 14 | (a) Mention various precautions required to be observed while using Nasal drops. | 5 |
| | (b) Explain different factors to be considered during preparation of Nasal drops. | 5 |
| 15 | (a) Calculate the amounts of 80%, 60%, 20%, 10% alcohols mixed to get 50% of alcohols. | 4 |
| | (b) Calculate displacement value of a drug in cocoa butter suppositories containing 10% of drug prepared in 0.2 gm mould. The weight of 10 suppositories is 3 gm. | 6 |
| 16 | (a) Differentiate between flocculated and deflocculated suspensions. | 4 |
| | (b) Explain different methods of dispensing suspensions. | 6 |
| 17 | (a) Write the history of Indian pharmacoporia. | 4 |
| | (b) Explain development of pharmaceutical industry in India. | 6 |
| 18 | Classify extraction. Explain different methodologies in maceration process. | 10 |

FACULTY OF PHARMACY**Pharma. D. I Year (Instant) Examination, January 2014****Subject: Pharmaceutical Inorganic Chemistry****Time: 3 Hours****Max.Marks: 70*****Note: Answer all questions from Part A. Answer any five questions from Part B.*****PART – A (25 Marks)**

- | | | |
|----|--|---|
| 1 | Write the principle involved in the Mohr titration. | 2 |
| 2 | What are the fundamental requirements of titrimetric method? | 2 |
| 3 | Define accuracy and precision. | 2 |
| 4 | What is a primary standard and a secondary standard? | 2 |
| 5 | Write about the solvents used in non-aqueous titration. | 2 |
| 6 | What is a Lewis acid and Lewis base? Give one example of each. | 2 |
| 7 | Mention the method of preparation and uses of hydrogen peroxide. | 2 |
| 8 | Give examples for mixed and universal indicators. | 2 |
| 9 | Write the purpose of combination antacid therapy. | 2 |
| 10 | What do you understand by Radio-pharmaceuticals? | 2 |

PART – B (5 x 10 = 50 Marks)

- | | | |
|----|---|----|
| 11 | (a) Discuss in brief about the neutralization curves. | 5 |
| | (b) Explain the theories of indicator. | 5 |
| 12 | What are the different methods of expressing concentrations of solutions? | 10 |
| 13 | Give the classification of errors and write the measures to minimize the errors. | 10 |
| 14 | Write about antimicrobials. | 10 |
| 15 | (a) Write a note on limit test for arsenic. | 7 |
| | (b) What is the role of solvents in limit test for iron? | 3 |
| 16 | What are essential trace elements? Write the physiological role of iron and copper. | 10 |
| 17 | What are the anti-caries agents? Discuss the role of fluorides as anti-caries agents. | 10 |
| 18 | (a) Define and classify pharmaceutical aids. | 5 |
| | (b) Enumerate the properties of radiation emitted by commonly used radionuclides. | 5 |

FACULTY OF PHARMACY

Pharm-D. I -Year (Instant) Examination, January 2014

Subject : Pharmaceutical Organic Chemistry

Time : 3 Hours

Max. Marks: 70

Note: Answer All questions from Section – A and any five questions from Section – B.**Section – A** (10 x 2 = 20 Marks)

- 1 What are diastereomers? 2
- 2 What are aprotic solvents? 2
- 3 What is a nucleophile? 2
- 4 What is Wittig reaction? 2
- 5 Outline any one method of preparation of benzyl benzoate. 2
- 6 Explain why carboxylic acids are more acidic than carboxylic phenols. 2
- 7 Write the structure and uses of dimercaptol. 2
- 8 Explain Free radical substitution with an example. 2
- 9 Draw the structures of the following molecules. 2
 - (i) 1, 2-dibromo-2-methylpropane
 - (ii) 2, 5-dimethylhexane
- 10 Compare the relative acidities of acetylene, ammonia. 2

Section – B (50 Marks)

- 11 Discuss the Bayer's strain theory and explain how Sachse-Mohr theory accounts for the fall of Bayer's theory. 10
- 12 (a) Explain the SN^1 Mechanism with suitable example and give evidence. 5
 - (b) Describe the role of solvent in SN^1 and SN^2 reactions. 5
- 13 (a) Define Hückel rule. Write the common properties of aromatic compounds. 5
 - (b) Explain the orientation in electrophilic aromatic substitution. 5
- 14 Explain the detailed mechanism of Friedel-Crafts alkylation and acylation reaction. 10
- 15 Write Markovnikov's rule and predict the products of the following reactions: 10
 - (a) Addition of HCl to 2-methyl-2-butene
 - (b) Addition of HBr to 1-Butene
 - (c) Addition of HI to 2-Butene
- 16 Write the mechanism involved in the following reactions. 5+5
 - (a) Michael addition
 - (b) Fries rearrangement
- 17 Write the preparation, assay and uses of following compounds. 5+5
 - (a) Salicylic acid
 - (b) Benzyl benzoate
- 18 Write note on :
 - (a) Kolbe reaction 4
 - (b) Keto-enol tautomerism 3
 - (c) Reformatsky reaction 3

FACULTY OF PHARMACY
Pharm. D. I Year (Instant) Examination, January 2014

Subject: Remedial Mathematics

Time: 3 Hours

Max.Marks: 70

Note: Answer all questions from Part A. Answer any five questions from Part B.

PART – A (10 x 2 = 20 Marks)

- 1 If $A = \begin{bmatrix} i & 0 \\ 0 & -i \end{bmatrix}$ write A^2 .
- 2 If $\begin{bmatrix} 2 & 3 \\ 3 & 0 \end{bmatrix} = \begin{bmatrix} x & y^2 \\ 3 & 0 \end{bmatrix}$, Find the values of x and y.
- 3 Eliminate 'θ' from the equations $x = a \sec^n \theta$, $y = b \tan^n \theta$.
- 4 Find the equation to the line passing through (2, 4) and parallel to x-axis.
- 5 Find the equation to the circle whose one end point is (2, 4) and mid point is (0,0).
- 6 Find the integral of $\int \frac{x^2}{1+x^2} dx$.
- 7 Define the order and degree of the differential equation and hence find the order and degree from the d.e. $\frac{d^3 y}{dx^3} + \left(\frac{d^2 y}{dx^2} \right)^2 + \frac{dy}{dx} + y = 0$
- 8 Evaluate $\lim_{x \rightarrow 2} \frac{x^2 - 4}{x - 2}$.
- 9 Find the Laplace transform $\sin at$.
- 10 If $u = \log(x^2 - y^2)$ then find $x \frac{\partial u}{\partial x} + y \frac{\partial u}{\partial y}$.

PART – B (5 x 10 = 50 Marks)

- 11 (a) If $A = \begin{bmatrix} 1 & -1 \\ 2 & -1 \end{bmatrix}$ and $B = \begin{bmatrix} x & 1 \\ y & -1 \end{bmatrix}$ and $(A+B)^2 = A^2 + B^2$. Find x and y.
 (b) If $A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$ and $I = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$ then show that $A^2 - (a+d)A = (bc - ad)I$.
- 12 (a) If $\tan 20^\circ = K$, show that $\frac{\tan 250^\circ + \tan 340^\circ}{\tan 200^\circ - \tan 110^\circ} = \frac{1 - K^2}{1 + K^2}$.
 (b) Prove that $\frac{1}{\cos 290^\circ} + \frac{1}{\sqrt{3} \sin 250^\circ} = \frac{4}{\sqrt{3}}$
- 13 (a) Show that $\lim_{\theta \rightarrow 0} \frac{\tan a\theta}{\sin b\theta} = \frac{a}{b}$.
 (b) If $u = \tan^{-1} \left(\frac{x^2 + y^2}{x + y} \right)$ then prove that $x \frac{\partial u}{\partial x} + y \frac{\partial u}{\partial y} = \frac{1}{2} \sin 2u$.

- 14 (a) Evaluate $\int_0^a \frac{dx}{1+\sqrt{x}}$
 (b) Evaluate $\int \sqrt{a^2 - x^2} dx$.
- 15 (a) Solve $e^x \tan y dx + (1-e^x) \sec^2 y dy = 0$.
 (b) Solve $(D^2+1)y = e^x + \sin x + x^2$.
- 16 (a) If $L[F(t)] = F(s)$ then prove that $L(e^{at}F(t)) = F(s-a)$.
 (b) Find the Laplace transform of $e^{2t} + t^2 + t \sin t$.
- 17 (a) Verify $\frac{\partial^2 z}{\partial x \partial y} = \frac{\partial^2 z}{\partial x \partial y}$ when z is equal to $x^3 + y^3 - 3axy$.
 (b) Solve $(xy^2 + x) dx + (yx^2 + y) dy = 0$.
- 18 (a) Find the equation to the circle which passes through the point (4,1), (6,5) and has the centre on the line $4x + y - 16 = 0$.
 (b) Find the equation of the ellipse whose focus is (0,3), eccentricity is $\frac{3}{5}$ and directrix is $3y-25=0$.

ST PAULS COLLEGE OF PHARMACY

FACULTY OF PHARMACY

Pharm D. I – Year (Instant) Examination, January 2014

Subject : Biology

Time : 3 hours

Max. Marks : 70

Note: Answer all questions from Part-A. Answer any FIVE questions from Part-B.

PART – A (10 x 2 = 20 Marks)

Write in brief about the following :

- 1 Fungi
- 2 Chloroplast
- 3 Collenchyma
- 4 Pisces
- 5 Morphology of seed
- 6 Penicillin
- 7 Air Sacs
- 8 Neuron
- 9 Lymphocyte
- 10 Tadpole

PART – B (5 x 10 = 50 Marks)

- 11 a) Describe various elements of xylem.
b) Describe the structure of mitochondria.
- 12 a) Explain briefly the natural system of classification.
b) Write a brief note on root modifications.
- 13 a) Describe the structure of T.S. of leaf.
b) Explain the Head inflorescence.
- 14 a) Give a brief account of pollination mechanisms.
b) Describe the structure of dicot ovule.
- 15 a) Write about general characters of Rubiaceae.
b) Write about antibiotics produced by fungi.
- 16 a) Describe the characters of Reptiles.
b) Describe the structure of reptilian heart.
- 17 a) Write about flight adaptation in birds.
b) Write about antivenom and its preparation.
- 18 a) Give an account on connective tissue.
b) Write an account of respiration in frog.