

FACULTY OF TECHNOLOGY
Pharm.D I - Year (6 YDC) (Instant) Examination, May / June 2022

Subject: Remedial Mathematics

Time: 3 Hours

Max. Marks: 70

PART – A

Note: Answer all the questions.

(2 x 10 = 20 Marks)

1. Show that $\begin{vmatrix} 1 & 1 & 1 \\ a & b & c \end{vmatrix} = (a - b)(b - c)(c - a)$.
2. Find x and y if $\begin{bmatrix} a^2 & b^2 + c^2 & 3 \\ -1 & x & - \end{bmatrix} = \begin{bmatrix} 4 & 3 \\ -1 & 8 \end{bmatrix}$
3. If $\sin A = \frac{4}{5}$ and $\sin B = \frac{3}{5}$, find the value of $\sin(A + B)$.
4. If $\tan \alpha = \frac{5}{6}$ and $\tan \beta = \frac{13}{11}$ find the value of $\tan(\alpha + \beta)$.
5. Find the equation of the circle with centre $C(2,3)$ and radius $r = 4$.
6. Find $\frac{d^2y}{dx^2}$, $y = 3x^3 - 4x^2 + 2x + 1$.
7. If $z = 4xy - 3y^2$, then find $\frac{\partial z}{\partial x}$ and $\frac{\partial z}{\partial y}$.
8. Evaluate $\int x^2 \cdot e^{3x} dx$.
9. Find the distance between the pair of points $(-3,7)$ and $(-8,5)$.
10. Find $L \{t^2 - 3t + 5\}$.

PART – B

Note: Answer any five questions.

(5 x 10 = 50 Marks)

11. Solve the system of equations by Cramer's rule

$$5x - y - 4z = 5, \quad 2x + 3y + 5z = 2, \quad 7x - 2y + 6z = 5.$$

12. (a) Find the equation of the circle passing through the points

$$(1,1) \quad (-2,2) \quad (-6,0).$$

(b) If $A = \begin{bmatrix} 0 & 2 & 4 \\ 2 & 1 & 3 \end{bmatrix}$ and $B = \begin{bmatrix} 7 & 6 & 3 \\ 1 & 4 & 5 \end{bmatrix}$ Find $3A - B$.

13. (a) Find the equation of the parabola whose focus is $(4,0)$ and directrix is $x = -4$.

(b) If $\frac{dy}{dx}$, if $y = x^3 \tan x$.

14. (a) Evaluate $\int \frac{x}{x^2+4} dx$.

(b) Find $\lim_{x \rightarrow 3} \frac{x^3 - 27}{x - 3}$.

15. (a) Solve $\frac{dy}{dx} = \frac{x+y}{x}$.

(b) Solve $\frac{d^2y}{dx^2} - 3\frac{dy}{dx} + 2y = e^{5x}$

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16. State and prove first shifting property of Laplace transform.

17. (a) Show that $\frac{\sqrt{3} \cos 23^\circ - \sin 23^\circ}{2} = \cos 53^\circ$.

(b) Evaluate $\int \frac{x}{1-x} dx$.

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

FACULTY OF PHARMACY
Pharm.D I-Year (6-YDC) (Instant) Examination, May / June 2022

Subject: Biology

Time: 3 Hours

Max. Marks: 70

PART – A (20 Marks)

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

- 1 Naja naja
- 2 Thallus
- 3 Flower
- 4 Lung Fish
- 5 Neuron
- 6 Root system
- 7 Pollination
- 8 Rhizome
- 9 Lymphocyte
- 10 Tap root system

PART – B (50 Marks)

- 11 Explain about TCA Cycle.
- 12 Explain general characters of minerals.
- 13 Explain in detail about role of yeast in fermentation.
- 14 Describe aerial stem modification and structure of flower.
- 15 Describe the circulatory system in frog.
- 16 Explain about cell inclusion in plants.
- 17 Explain structure of penicillium species and give an account of its economic importance.
- 18 Describe the structure of Dicot and Monocot seed.

FACULTY OF PHARMACY

Pharma. D I Year (6-YDC) (Instant) Examination, May 2022

Subject: Human Anatomy and Physiology

Time: 3 Hours

Max. Marks: 70

PART – A

Note: Answer all questions.

(10 x 2 = 20 Marks)

- 1 Write a note on CSF
- 2 Define hypotension and hypertension
- 3 Draw a typical diagram of bone and mention its function
- 4 Describe briefly the anatomical features of spleen
- 5 Write a note on spermatogenesis
- 6 Mention the different waves of ECG and its significance.
- 7 What are the different components of reflex arc describe it briefly.
- 8 Mention the physiological functions of parasympathetic nervous system.
- 9 Explain the process of micturition
- 10 Write about heat regulation during exercise.

PART – B

Note: Answer any five questions.

(5 x 10 = 50 Marks)

- 11 List the different sense organs and explain the anatomy and physiology of eye.
- 12 (a) Discuss the regulation of blood pressure.
(b) Explain the events of cardiac cycle.
- 13 With the help of neat labelled diagram explain different parts of cerebrum.
- 14 (a) Differentiate between smooth muscles and skeletal muscle.
(b) Explain the physiology of muscle contraction.
- 15 (a) Define and classify connective tissues.
(b) Write a note on epithelial tissue.
- 16 Describe the anatomical features of pituitary gland and mention its secretions in detail.
- 17 (a) Describe the anatomy of lung.
(b) Write a note on mechanism of respiration.
- 18 (a) Describe the anatomical features of kidney with the help of diagram.
(b) Explain in detail the physiology of urine formation.

FACULTY OF PHARMACY
Pharm. D I - Year (6 YDC) (Instant) Examination, May 2022

Subject: Pharmaceutical Inorganic Chemistry

Time: 3 hours

Max. Marks: 70

PART - A

Note: Answer all the questions:

(10 x 2 = 20 Marks)

- 1 Give the general procedure for the limit test for Iron.
- 2 Define and classify Pharmaceuticals aids.
- 3 Write the method of preparation, assay and uses of Calcium chloride.
- 4 Explain Strong acid – Strong base neutralization curve.
- 5 Write a note on mechanism of action of antimicrobials.
- 6 Explain how end point is detected in Complexometric titrations.
- 7 What are Expectorants? Write the mechanism of action with examples.
- 8 Discuss the role of sodium fluoride in Dental Caries.
- 9 What are acidifiers? Write about the different types of acidifiers with examples.
- 10 Write the method of preparation, assay and uses of sodium Bicarbonate.

PART - B

Note: Answer any five questions:

(5 x 10 = 50 Marks)

- 11 Write a note on Limit test for Arsenic with a neat labelled diagram.
- 12 Explain the physiological role of Zinc and Iodine.
- 13 Write a note on Mohr's method and Fagan's method.
- 14 What are different methods of expressing concentrations of solutions?
- 15 Write the preparation, assay and uses of Oxygen and Carbon dioxide.
- 16 Write a note on theories of Indicators.
- 17 Write the method of preparation, assay and uses of Calcium Carbonate and Potassium Chloride.
- 18 Write the method of preparation, assay and uses of Magnesium sulphate and hydrogen peroxide.

FACULTY OF PHARMACY
Pharm. D I - Year (6-YDC) (Instant) Examination, May 2022

Subject: Pharmaceutical Organic Chemistry

Time: 3 Hours

Max. Marks: 70

PART – A

Note: Answer all the questions.

(10 x 2 = 20 Marks)

- 1 Define the following
(a) Isomerism (b) Polarity of bonds.
- 2 Write the structures of the following organic compounds.
(a) 2-chloro-3 methyl hexane (b) 1,3- butadiene.
- 3 Explain the role of solvents in SN₁, reaction.
- 4 What are activating and deactivating groups give examples.
- 5 Explain the effect of substituent on acidity of carboxylic acids.
- 6 Explain the concept of aromaticity and Huckles rule.
- 7 Write about wittig reaction.
- 8 Explain the saytzeffs rule.
- 9 Write the difference between E₁ & E₂ reactions.
- 10 What is resonance give any two examples?

PART – B

Note: Answer any five questions.

(5 x 10 = 50 Marks)

- 11 Explain the stability of cycloalkanes with the help of Bayer strain theory and orbital picture of angle strain.
- 12 (a) Explain the mechanism of Free radical reactions of methane.
(b) Explain in detail the mechanism and rearrangement reaction of SN₁ Reaction with examples.
- 13 Explain markonikovs and anti markonikovs addition with examples.
- 14 What are Electrophilic aromatic substitution reactions? Discuss the reaction and mechanism involved in Nitration and sulphonation of benzene.
- 15 Write the mechanism involved in the following:
(a) Aldol-Condensation.
(b) Cannizzaro reaction.
- 16 Discuss the mechanism of the following reactions:
(a) Riemer-Tiemanns reaction.
(b) Sandmeyers reaction.
- 17 Write the method of preparation, Assay method and uses of aspirin and vanillin.
- 18 Explain in detail about Acyl substitution reaction with four examples.

FACULTY OF PHARMACY
Pharm. D I - Year (6 YDC) (Instant) Examination, May 2022

Subject: Medical Biochemistry

Time: 3 hours

Max. Marks: 70

PART - A

Note: Answer all the questions:

(10 x 2 = 20 Marks)

- 1 Write about cyclic AMP.
- 2 What are Isoenzymes and their therapeutic applications?
- 3 Define Glycogenolysis.
- 4 Write about Glucose tolerance test and its significance.
- 5 Define Oxidative phosphorylation.
- 6 Write about nitrogen balance.
- 7 Write about liver enzyme tests.
- 8 Write briefly about metabolic acidosis.
- 9 What is creatinine clearance? Write its diagnostic significance.
- 10 Write briefly about ELISA.

PART - B

Note: Answer any five questions:

(5 x 10 = 50 Marks)

- 11 Explain HMP shunt and write its significance.
- 12 Explain α -oxidation with examples.
- 13 Explain enzyme inhibition with their kinetics.
- 14 Explain various renal function tests.
- 15 Describe
 - (a) Urine analysis
 - (b) Water balance and its regulation
- 16 Explain Urea cycle and its metabolic disorders.
- 17 Explain:
 - (a) DNA repair mechanisms
 - (b) Disorders of Lipoproteins
- 18 Write a note on Ketogenesis and its regulation.

FACULTY OF PHARMACY
Pharm D I Year (6-YDC) (Instant) Examination, May 2022

Subject: Pharmaceutics

Time: 3 Hours

Max. Marks: 70

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

PART - A (20 Marks)

- 1 What are the difference between flocculated and deflocculated suspensions?
- 2 Write a brief account on (Isotonic) solutions and its significance.
- 3 Write the principle involved in the preparations of aqueous iodine solution.
- 4 Differentiate between Infusion and Decoction.
- 5 What will be the dose for a child of 5 years if the adult dose of a drug is 400mg?
- 6 Find the strength of 95% v/v alcohol in terms of proof spirit.
- 7 Define displacement value. What is its significance?
- 8 What are eutectic powders?
- 9 Write the importance of colours in pharmaceutical formulations.
- 10 Differentiate between Eye and Ear drops.

PART - B (50 Marks)

- 11 What is prescription? Explain in detail about parts of prescription with examples.
- 12 Write a note on (a) USP(b) IP.
- 13 Describe the history of pharmacy education and pharmaceutical industry in India.
- 14 What are effervescent granules? Explain the preparation methods of effervescent granules.
- 15 Describe the formulations and evaluation tests of emulsions.
- 16 Write in detail about maceration and percolation process.
- 17 Write a note on (a) Surgical ligatures (b) Evaluation test for suppositories.
- 18 Describe any two chemical incompatibilities and discuss the remedies to handle them.

FACULTY OF PHARMACY

**Pharm.D I Year (3-YDC) (Post Baccalaureate)(Main & Backlog) Examination,
October 2021**

Subject: Pharmacotherapeutics I & II

Time: 2 Hours

Max. Marks: 70

Note: Answer any six questions from Part-A and answer any four questions from Part-B.

PART-A (6x5=30 Marks)

1. Define Acute renal failure based on AKIN criteria
2. Differentiate COPD and Asthma.
3. Mention the etiology for psoriasis
4. Define Angina & Classify its clinical manifestations.
5. Write a brief note on spondylitis
6. What are the risk factors for breast cancer?
7. What are the common pathogens causing meningitis? Add a note on the clinical presentation?
8. What is FEV1 & Residual volume?
9. Write the pathophysiology for chemotherapy induced nausea and vomiting
10. What are the criteria for diagnosing rheumatoid arthritis as per American College Of Rheumatology?

PART-B (4x10=40 Marks)

11. a) What is the role of ACE inhibitors in proteinuria
b) Explain the pathophysiology of hypertension
12. a) Write the basic principles of cancer therapy
b) Write a note on treatment of early Breast cancer
13. a) What is the role of α -glucosidase inhibitors in controlling diabetes mellitus.
b) Write about the treatment of DM-II in detail.
14. Write in detail about the approach for antimicrobial regimen selection.
15. a) Explain in detail about essential drug concept.
b) What are the different issues concerned with pregnancy.
16. a) Write the management for complications in CKD
b) Write the management for drug induced renal disease
17. a) Write the treatment algorithm for management of Leukaemia's
b) Explain the role of colony stimulating factors in acute myeloid leukemia
18. a) Explain the role of integrase inhibitors and entry inhibitors in the treatment of HIV infection along with examples.
b) Write the pathogen and etiopathogenesis involved and the pharmacotherapy for gonorrhoea & Syphilis.

FACULTY OF PHARMACY

Pharm.D I-Year (6-YDC) (Main & Backlog) Examination, October 2021

Subject: Remedial Mathematics

Time: 2 Hours

Max. Marks: 70

PART – A (6 x 5 = 30 Marks)

Note: Answer any six questions from Part- A

1 If $A = \begin{bmatrix} 1 & 2 \\ 1 & 1 \end{bmatrix}$, then find A^{-1} .

2 Find the rank of the matrix $A = \begin{bmatrix} 0 & 1 & 2 \\ 7 & -1 & 1 \end{bmatrix}$.

3 If $\angle A = 18^\circ$, $\angle C = 132^\circ$, $a = 7\text{m}$, find sides b and c .

4 Write law of cosines.

5 Find the distance between the points $(-2, 1)$ and $(3, 4)$.

6 Find the circle with centre $C(3, -4)$ and radius 5.

7 Find $\lim_{x \rightarrow 0} \frac{2x - 3}{5x - 7}$.

8 Find $\frac{d^2 y}{dx^2}$, if $2x^3 - 3y^2 = 7$.

9 Evaluate $\int_{x=0}^x \frac{1}{\sqrt{2x^2 + 1}} dx$.

10 Write $L \int e^{at} dt$.

PART – B (4 x 10 = 40 Marks)

Note: Answer any four questions from Part-B.

11 Solve the system of equations $2\tilde{x} - 3\tilde{y} = 1$, $2\tilde{x} + \tilde{y} - z = 2$, $3\tilde{x} - \tilde{y} + 2z = 1$.

12 (a) $A = \begin{bmatrix} 1 & i \\ i & 1 \end{bmatrix}$, $B = \begin{bmatrix} i & 1 \\ 1 & i \end{bmatrix}$, determine the product AB .

(b) Find the distance of the point $(2, 3)$ from the line $2x - 3y = 5$.

13 (a) Find the vertex, focus and direction of the parabola

$$x^2 - 2x - 4\tilde{y} - 3 = 0.$$

(b) Write an equation of a straight line passing through the points (1,1) and (1,2).

14 (a) Find the lines that are tangent and normal to the curve

$$x^2 - x\tilde{y} - y^2 = 1 \text{ at } P(2,3).$$

(b) Find $\frac{dy}{dt}$ if $y = x^2, x = 2\tilde{t} - 5$.

if $\frac{dx}{dt}$

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15 State and prove first shifting property of Laplace transform.

16 (a) Find order and degree of the differential equations $\frac{dy}{dx} = x^2 y$.

(b) Find the general solution of the differential equation $\frac{dy}{dx} = 4x y^2$.

17 (a) Find a general solution of $3y'' - 2y' + 3y = 0$.

(b) Find the general solution of $y'' + y = \sin x$.

18 (a) Find the inverse Laplace transform of (i) $L^{-1} \left\{ \frac{3s^2 - 6s + 15}{s^3 - 15} \right\}$ (ii) $L^{-1} \left\{ \frac{3s^2 - 2}{s^3} \right\}$.

(b) Use Laplace transform to solve $y'' + 3y' + y = 1$, $y(0) = 1$.

FACULTY OF PHARMACY

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

2021 Subject: Biology

Time: 2 Hours

Max. Marks: 70

PART – A (6 x 5 = 30 Marks)

Note: Answer any six questions from Part – A

- 1 Ovipary
- 2 Common Indian Frog
- 3 Air Sacs
- 4 Tadpole
- 5 Ribosomes
- 6 Algae
- 7 Root system
- 8 Hydathones
- 9 Penicillin
- 10 Guttation

PART – B (4 x 10 = 40 Marks)

Note: Answer any four questions from Part – B.

- 11 Describe the structure of reptilian heart with neat labelled diagram.
- 12 Write about flight adoption in birds.
- 13 Describe in details steps in Krebs's cycle.
- 14 Explain the structure of T.S. of Leaf.
- 15 Explain about respiration in Pisces.
- 16 Write about general characters, economic importance and medicinal uses Leguminosae.
- 17 Describe circulatory system in frog.
- 18 Describe absorption of water and minerals in plant.

FACULTY OF TECHNOLOGY

Pharm.D I-Year (6 YDC) (Main & Backlog) Examination, October 2021

Subject: Pharmaceutical Inorganic Chemistry

Time: 2 hours

Max. Marks: 70

Note: Answer any six questions from Part-A. Answer any four questions from Part-B.

PART- A (6x5=30 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 4gm 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 (4x10=40 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
 - (b) Weak acid-Weak base
- 12 (a) Name the Magnesium compounds used as antacids. Describe the preparation, properties, assay and uses of Milk of Magnesia.
 - (b) Name the different types of acidifiers and give their examples.
- 13 (a) How is end point detected in Redox titrations?
 - (b) Mention pharmaceutical applications of Gravimetry.
- 14 What are essential trace elements? Write the physiological role of Copper and Iodine.
- 15 Define Limit test. Write about the principle and procedure involved in the limit test of Arsenic with neat diagram.
- 16 Write the preparation, properties, assay and uses of sodium chloride in replacement therapy.
- 17 What are Radio pharmaceuticals? Write about its clinical applications.
- 18 Explain the mechanism of action of anti-microbial agents. Give a brief account on hydrogen peroxide.

FACULTY OF PHARMACY

Pharm. D I-Year (6-YDC) (Main & Backlog) Examination, October 2021

Subject: Pharmaceutical Organic Chemistry

Time: 2 Hours

Max. Marks: 70

PART – A

Note: Answer any six questions.

(6 x 5 = 30 Marks)

- 1 Explain the different types of intermolecular forces.
- 2 Explain the stability of carbocations.
- 3 Write any one method of preparation of cycloalkanes.
- 4 Write a note on hyper conjugation.
- 5 Define electrophile with examples.
- 6 Explain the acidity of phenols.
- 7 What is free radical? Classify and give the order of stability.
- 8 Write the uses of the following official compounds
(a) Saccharin sodium (b) Citric acid.
- 9 Give a note on bimolecular displacement mechanism.
- 10 What are activating and deactivating groups and give examples for ortho, para and metadirecting groups?

PART – B

Note: Answer any four questions.

(4 x 10 = 40 Marks)

- 11 (a) How can you explain the Bayer strain theory and what are limitations of Bayer strain theory?
(b) Discuss the effect of halogen on electrophilic aromatic substitution of alkyl benzene.
- 12 Explain the mechanism and stereochemistry of SN₁ and SN₂ reaction with examples.
- 13 Write the reaction and mechanism of the following:
(a) Benzoin condensation
(b) Reformatsky reaction.
- 14 Write the preparation assay and uses of following:
(a) Aspirin
(b) Urea
(c) Chlorbutol
- 15 (a) How can you convert acids to acid chlorides esters and amides?
(b) Write about acidity of carboxylic acids.
- 16 (a) Explain the stability of alkenes.
(b) Explain the electrophilic addition reactions of alkenes with mechanism.
- 17 Explain Friedel Crafts alkylation and acylation reactions with mechanism.
- 18 Explain the reaction and mechanism of
(a) Fries rearrangement.
(b) Sand Meyers reaction.

FACULTY OF PHARMACY
Pharm. D I-Year (6 YDC) (Main & Backlog) Examination, October 2021

Subject: Medical Biochemistry

Time: 2 Hors

Max. Marks: 70

Note: Answer any six questions from Part-A. Answer any four questions from Part-B.

PART- A (6x5=30 Marks)

- 1 Write about genetic code.
- 2 What is the condition called cystinuria?
- 3 Write about carrier mediated transport system.
- 4 Write about Michalis menten constant.
- 5 Write about IUB classification of enzymes.
- 6 Write the physiological importance of HMG CO-A reductase.
- 7 What are un-couplers of ETC?
- 8 Write about metabolic dearrangements in diabetes mellitus.
- 9 Write about metabolic acidosis.
- 10 What are apoproteins and write their function?

PART- B (4x10=40 Marks)

- 11 (a) Write the classification of enzymes.
(b) Biological significance of ATP.
- 12 Write the steps involved in gluconeogenesis and explain its significance. 13 Explain Kreb's cycle with its regulation.
- 14 Explain :
(a) Synthesis of Bile salts from cholesterol
(b) Write short notes on Lipoproteins
- 15 Explain various Liver function tests in detail.
- 16 Explain DNA replication and DNA repair mechanism. 17 Write in detail about Urine analysis.
- 18 Discuss in detail about Radio Immuno Assay.

FACULTY OF PHARMACY
Pharm D I Year (6-YDC) (Main & Backlog) Examination, October 2021

Subject: Pharmaceutics

Time: 2 Hours

Max. Marks: 70

Note: Answer any six questions from Part-A and any four questions from Part-

B. PART - A (6 x 5 = 30 Marks)

- 1 What is the difference between ligatures and sutures?
- 2 Write a brief account on flavours in pharmaceutical formulations.
- 3 Write the principle involved in the preparation of Calamine lotion.
- 4 Differentiate between o/w and w/o emulsions.
- 5 What is the dose of an 8th month old infant, in the adult dose of a drug is 250mg?
- 6 Calculate the volume of 95% alcohol required to prepare 600ml of 70% alcohol.
- 7 Calculate the quantity of dextrose required to prepare 1 fl oz of a 10% w/v solution.
- 8 Define eutectic mixtures with examples.
- 9 What is displacement value and its significance?
- 10 Write a note on handling of prescription.

PART - B (4 x 10 = 40 Marks)

- 11 Define posology. Add a note on factors affecting selection of doses.
- 12 Write a note on (a) B.P (b) I.P.
- 13 (a) Write a note on development of pharmaceutical industry in India and its growth.
(b) Write short notes on gargles, mouth washes and throat paint with examples.
- 14 What are pills? Write in detail about formulation and preparation of pills.
- 15 (a) Write a short notes on evaluation tests of suspensions.
(b) What are instabilities of emulsions and describe the remedies to improve stability of emulsion?
- 16 Write in detail about the steps involved in maceration and continuous hot extraction process.
- 17 Define suppositories, advantages, disadvantages and classification of bases in the preparation of suppositories.
- 18 (a) Write a note on surgical dressings.
(b) Explain different therapeutic incompatibilities.

FACULTY OF PHARMACY

**Pharma. D I Year (6-YDC) (Main & Backlog) Examination, October 2021
Subject: Human Anatomy and Physiology**

Time: 2 Hours

Max. Marks: 70

Note: Answer any six questions from Part A, Answer any four questions from Part B.

PART – A (6 x 5 = 30 Marks)

- 1 Describe the conducting system of heart.
- 2 Differentiate between Angina Pectoris and Congestive cardiac failure.
- 3 Describe the structure and functions of bones.
- 4 Describe the anatomical features of thymus gland.
- 5 Write a note on testes.
- 6 Mention the functions of WBC.
- 7 Describe reflex arc in brief.
- 8 Differentiate between parasympathetic and sympathetic nervous system.
- 9 What is meant by tidal volume and vital capacities mention in briefly.
- 10 Describe the various secretions of pancreas.

PART – B (4 x 10 = 40 Marks)

- 11 List the different sense organs and explain the anatomy and physiology of ear
- 12 (a) Describe the anatomy of heart.
(b) Write in detail about cardiac cycle.
- 13 With the help of neat labelled diagram explain different parts of brain and write its functions.
- 14 (a) Differentiate between smooth muscles and cardiac muscles.
(b) Explain the physiology of muscle contraction.
- 15 (a) Define and classify various tissues
(b) Write a note on connective tissue.
- 16 Describe the anatomical features of thyroid gland and mention its secretions in detail.
- 17 (a) Describe the anatomy of respiratory tract.
(b) Write a note on transport of respiratory gases.
- 18 (a) Describe the anatomical features of nephron with the help of diagram.
(b) Explain in detail the various steps involved in the formation of urine.

FACULTY OF PHARMACY

Pharm. D. (6 YDC) I – Year (Instant) Examination, July

2021 Subject: Human Anatomy and Physiology

Time: 2 hours

Max. Marks: 70

Note: Answer any six questions from Part-A and any Four questions from Part-B.

Part – A (6 x 5 = 30 Marks)

1. Describe the anatomical features of tongue.
2. Differentiate between Angina Pectoris and Congestive cardiac failure.
3. Define and classify bones.
4. Explain the anatomical features of thymus gland.
5. Write a note on ovary.
6. Mention the functions of the erythrocytes and leucocytes.
7. Explain reflex arc in brief.
8. What are the functions of parasympathetic nervous system?
9. Define tidal volume and vital capacities.
10. Describe the various secretions of pancreas.

Part – B (4 x 10 = 40 Marks)

11. Draw a neat labeled diagram of section of ear. And add a note on physiology of hearing.
12. Discuss the anatomy of heart and write in detail about cardiac cycle.
13. Draw a neat labeled diagram of mid sagittal section of brain and spinal cord and mention the functions of various parts.
14. Discuss the anatomical features of smooth muscles and cardiac muscles with the help of diagram and add a note on electro physiology of muscle tissue.
15. Define and classify various tissues and add a note on connective tissue.
16. Describe the anatomical features of thyroid gland and enumerate its secretions and functions in detail.
17. Describe the anatomy of gastrointestinal tract and add a note on protein metabolism.
18. Describe the anatomical features of kidney with the help of diagram and explain in detail the various steps involved in the formation of urine.

FACULTY OF PHARMACY
Pharm D (6-YDC) I-Year (Instant) Examination, July 2021

Subject : Remedial Mathematics

Time: 2 Hours

Max. Marks: 70

Missing data, if any may be suitably assumed

Note: Answer any Six Questions from Part-A, Answer any Four Questions from Part-B.

PART- A (6x5 = 30 Marks)

- 1 If $A = \begin{bmatrix} 1 & -1 \\ 0 & 1 \end{bmatrix}$, $B = \begin{bmatrix} 3 & 1 \\ 4 & 1 \end{bmatrix}$, find $A+B$
- 2 If $A = \begin{bmatrix} 1 & 9 \\ 1 & 1 \end{bmatrix}$, then $|A|$
- 3 Find the equation of the Circle whose centre $(-2, -1)$ and radius 2.
- 4 Find the equation of the (Straight) line joining the points $(1,2)$ and $(3,4)$
- 5 If $y = 8m^{-1}x^2$, find dy/dx
- 6 Find $\lim_{x \rightarrow 3} \frac{x^2 - 9}{x - 3}$
- 7 Find the equation of the straight line one passing through the points $(2,3)$ and slope 3.
- 8 Evaluate $\int_0^4 3x^{-4} dx$
- 9 Eliminate arbitrary constants from $y = ae^x + be^{2x}$ and obtain the differential equation.
- 10 Find $\int L^{-1} \left[\frac{3t^2 - 5e^{-2t}}{s^2 - 4} \right] dt$ ii. $L^{-1} \left[\frac{s}{s^2 - 4} \right]$

PART- B (4x10 = 40 Marks)

- 11 a) Find the rank of the matrix $\begin{bmatrix} 1 & 5 \\ 4 & 8 \\ 2 & 22 \end{bmatrix}$
- b) If $A = \begin{bmatrix} 1 & 2 \\ 9 & 3 \end{bmatrix}$ find $A + A^{-1}$ and $A - A^{-1}$
- 12 a) Find the equation of the circle passing through the points $(-1, 2)$, $(-2,1)$ and $(2, -1)$
b) Find vertex, focus, latus rectum and equation of direction for the parabola

$$y^2 - 6y + 2x = 10$$

...2

-2-

13 a) If $y = \frac{2x - 5}{3x - 2}$, find $\frac{dy}{dx}$

b) Find the n^{th} derivative of the function $e^x (2x + 3)^3$ and write Leibnitz theorem for the n^{th} derivative

14 a) If $Z = x^3 + y^3 - 3axy$, find $\frac{\partial^2 Z}{\partial x^2}, \frac{\partial^2 Z}{\partial x \partial y}, \frac{\partial^2 Z}{\partial y^2}$ and show that $\frac{\partial^2 Z}{\partial x^2} + \frac{\partial^2 Z}{\partial y^2} = 0$

b) If $U = \sin^{-1} \frac{x^2 - y^2}{x^2 + y^2}$, prove that $x \frac{\partial U}{\partial x} - y \frac{\partial U}{\partial y} = \tan^{-1} \frac{y}{x}$

15 a) Evaluate $\int_0^1 t^3 dt + \int_1^4 t^{-4} dt$

b) Solve $(D^2 + 5D + 6)y = e^x$

16 a) Solve $\frac{dy}{dx} = 4x + y^2$

b) Solve $\frac{dy}{dx} + \frac{2}{xy} = xe^{-x^2}$

17 a) Find the angle between the pair of lines $2x - 3y + 1 = 0$ and $3x + 4y - 1 = 0$

b) Find centre and radius of the circle give by $2x^2 + 2y^2 - 7x + 8y - 4 = 0$

18 a) If sides of a triangles are 3, 4, 5 find $\cos A, \cos B, \cos C$.

b) Find the general equation of the straight lines parallel and perpendicular to $3x - 4y - 1 = 0$

FACULTY OF PHARMACY

Pharm. D. (6 YDC) I – Year (Instant) Examination, July 2021

Subject: Biology

Time: 2 hours

Max. Marks: 70

Note: Answer any six questions from Part-A and any Four questions from Part-B.

Part – A (6 x 5 = 30 Marks)

Write short notes on the following:

1. Yeast.
2. Basophils.
3. Pollination.
4. Metamorphosis.
5. Collenchyma.
6. Functions of Plasma Membrane.
7. Phloem.
8. Skeletal Muscle.
9. Neuron.
10. Bulb.

Part – B (4 x 10 = 40 Marks)

11. Write the general characters, economic importance and medicinal uses of Umbelliferae plants.
12. Explain in detail the various stem modifications.
13. Write a note on inflorescence and explain in detail about cymose inflorescence.
14. (a) Give a detailed account of Krebs cycle.
(b) Explain the structure and functions of animal cell.
15. Give the medicinal importance of classes Pisces and Aves.
16. Describe the light reactions of photosynthesis.
17. Explain the structure of Penicillium specie. Give an account of its economic & medicinal importance.
18. Write a note on various poisonous animals.

FACULTY OF PHARMACY
Pharm.D I-Year (6 YDC) (Instant) Examination, July 2021

Subject: Pharmaceutical Inorganic Chemistry

Time: 2 hours

Max. Marks: 70

Note: Answer any six questions from Part-A and any Four questions from Part-B.

Part – A (6 x 5 = 30 Marks)

- 1 What is an Error? What are the different types of errors?
- 2 Write about the interference of water in non-aqueous titrations.
- 3 Give the difference between a primary standard and secondary standard.
- 4 Give the principle involved in the Volhard's method of titration.
- 5 Write the ideal properties of antacids.
- 6 What is Bronsted and Lowry acid-base concept?
- 7 Mention the method of preparation of Milk of Magnesia.
- 8 Define Cathartics. Give examples.
- 9 Give examples for mixed and universal indicators.
- 10 What is ORS? Give its composition.

Part – B (4 x 10 = 40 Marks)

- 11 Explain in detail about the Neutralization curves.
- 12 (a) Write about the different types of acidifiers with examples.
(b) Write the method of preparation and uses of purified water.
- 13 (a) Give the general procedure for the limit test of sulphates.
(b) Write the preparation, storage and uses of oxygen.
- 14 Write the preparation, properties, assay and uses of Sodium chloride in Replacement therapy.
- 15 (a) Write a note on essential trace elements.
(b) Explain how end point is detected in Complexometric titrations.
- 16 (a) What are Expectorants? Write the mechanism of action with examples.
(b) Give the importance of fluorides as anti-caries agents.
- 17 What is an antidote? Write a note on the treatment of cyanide poisoning.
- 18 (a) Define and classify pharmaceutical aids.
(b) Write the applications of Radiopharmaceuticals.

FACULTY OF PHARMACY

Pharm D (6-YDC) I-Year (Instant) Examination, July 2021

Subject: Pharmaceutical Organic Chemistry

Time: 2 Hours

Max. Marks: 70

Missing data, if any may be suitably assumed

Note: Answer any Six Questions from Part-A, Answer any Four Questions from Part-B.**PART- A (6x5 = 30 Marks)**

- 1 Define structural isomerism and give examples.
- 2 Write the structure of the following
 - a) 2-bromo-3-Methyl -l- hexane
 - b) 1, 3 - butadiene
- 3 Write any two methods of preparation of cycloalkanes.
- 4 Explain the concept of aromaticity and Huckel's rule
- 5 Explain the stability and resonance hybrid of allyl radical
- 6 Discuss the acidity of phenols
- 7 Write about walden inversion.
- 8 Why – NH₂ group is activating and ortho. para directing group and why NO₂ group is deactivating and meta directing explain.
- 9 What is aldol condensation? Explain with examples.
- 10 Write the structure and uses of Lactic acid

PART- B (4x10 = 40 Marks)

- 11 a) Explain free radical substitution of Alkanes with mechanism.
b) Add a note on stability of free radicals.
- 12 a) Explain Bayer's strain theory write its limitations.
b) Write about saytzeff rule.
- 13 Explain the mechanism, orientation and reactivity for the addition of hydrogen halide to alkene.
- 14 a) Explain Kolbe's reaction. b) Explain Diazo coupling reaction.
- 15 a) Explain the acidity of carboxylic acid and add a note on effect of substituents.
b) Write the conversion of acid to acid chloride, acid to amide and acid to ester.
- 16 a) Explain perkin condensation mechanism
b) Give the mechanism involved in Benzoin condensation.
- 17 a) Write about Williamson's synthesis
b) Write the comparison of aliphatic nucleophilic substitution with that of Electrophilic Aromatic substitution
- 18 a) Give one example of oxidation and reduction reaction.
b) Write the structure and uses of. the following
i) Vanillin

FACULTY OF PHARMACY

Pharm D (6-YDC) I-Year (Instant) Examination, July 2021

Subject : Medicinal Biochemistry

Time: 2 Hours

Max. Marks: 70

Note: Answer any Six Questions from Part-A, Answer any Four Questions from Part-B.

PART- A (6x5 = 30 Marks)

- 1 Discuss about various transport process across the cell membranes?
- 2 Define and write energetics of Glycolysis
- 3 Write a note on isoenzymes and their therapeutic applications?
- 4 Explain about Ketogenesis?
- 5 Write about uncouplers of ETC?
- 6 Write briefly about DNA repair mechanism?
- 7 Write a note on test for NPN constituents?
- 8 Write about Lipoproteins and their composition
- 9 Write about water balance and Electrolyte distribution.
- 10 Write about role of cells in clinical chemistry laboratory?

PART- B (4x10 = 40 Marks)

- 11 a) Explain Glycogenolysis and its energetics?
b) Write about Galactose tolerance test?
- 12 Explain about B-Oxidation with its energetics?
- 13 Discuss various energy rich Compounds and write in detail about its biological significance.
- 14 Explain in detail about Biosynthesis of cholesterol?
- 15 Explain about Transamination, Deamination & decarboxylation in detail
- 16 Explain in detail about DNA replication and DNA repair mechanism
- 17 Write in detail about laboratory tests for kidney function?
- 18 Discuss various Immunochemical techniques for the determination of hormone levels &

protein levels?

FACULTY OF PHARMACY

Pharm D (6-YDC) I-Year (Instant) Examination, July 2021

Subject: Pharmaceutics

Time: 2 Hours

Max. Marks: 70

Missing data, if any may be suitably assumed

Note: Answer any Six Questions from Part-A, Answer any Four Questions from Part-B.

PART- A (6x5 = 30 Marks)

- 1 What are the difference between flocculated and Deflocculated suspension?
- 2 Write a brief account on passeries?
- 3 Write the Principle involved in the preparations of calamine Lotion?
- 4 Explain the difference between maceration and percolations?
- 5 What is the dose for an 8-Month old infant if the average adult dose of a drug is 250 mg?
- 6 Find the strength of 95% V/v alcohol in favors of proof spirit?
- 7 Define displacement value? What is its significance?
- 8 What are eutectic powders?
- 9 Write the importance of sweeteners in pharmaceutical formulations
- 10 Differentiate between syrups and elixirs?

PART- B (4x10 = 40 Marks)

- 11 What is posology? Explain the factors influencing the dose?
- 12 Write a note on
a) B.P b) I.P
- 13 Describe the history of Pharmacy education and Pharmaceutical Industry in India?
- 14 Describe the ingredients present in effervescent granules? Explain the preparations
methods of effervescent granules?
- 15 Describe the formulation and evaluation tests of emulsions?
- 16 Write in detail about maceration process?
- 17 Write a note on
a) Surgical dressings
b) Evaluations tests for suppositories
- 18 Discuss in detail about therapeutic incompatibilities and describe the remedies to handle them?

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