Code No. E-12341

FACULTY OF PHARMACY

Pharma. D (6 YDC) I Year (Main & Backlog) Examination, September 2023

Subject: Human Anatomy and Physiology

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

PART – A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Explain about the structure and components of neuron with a neat labelled diagram.
2. Define Joint. Write a short note on classification of joints with examples.
3. Enumerate bones of Appendicular system.
4. Explain the diagrammatic representation of hemopoiesis.
5. Give the definition of the following terms (a) Angina pectoris (b) Atherosclerosis.
6. Explain the following (a) Vital capacity (b) Asphyxia.
7. Write about reflex arc.
8. Write notes on juxtaglomerular apparatus.
9. Enlist different methods of contraception.
10. List the drugs used by athletes.

PART – B

Note: Answer any five questions. **(5 x 10 = 50 Marks)**

11 a) Write in detail about Cardiac Cycle.
b) Define Blood pressure. Explain about regulation of blood pressure.

12. Describe the Anatomy of lungs with neat diagram and explain physiology of respiration.
13. a) Name the Cranial nerves and write their functions.
b) Differentiate between Sympathetic and Parasympathetic nervous system.

14. a) Describe the anatomical features of Nephron with the help of diagram.
b) Explain in detail the physiology of Urine formation.

15. Describe the features of Thyroid gland. Explain the biosynthesis and functions of thyroid hormones.
16. Explain different phases of Menstrual Cycle. Give the physiological functions of Oestrogen.
17. Describe the Gross Anatomy of ear with a neat, labelled diagram and explain physiology of hearing.
18. Explain in detail different phases of digestion.

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Code No. E-12346

FACULTY OF PHARMACY

Pharm. D I-Year (6 YDC) (Main & Backlog) Examination, October 2023

Subject: Remedial Mathematics

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

PART – A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Find x if $\begin{vmatrix} 2 & x & 3 \\ 4 & 1 & 6 \\ 1 & 2 & 7 \end{vmatrix} = 0$.
2. If x and y if $\begin{bmatrix} x+y & 3 \\ -1 & x-y \end{bmatrix} = \begin{bmatrix} 4 & 3 \\ -1 & 8 \end{bmatrix}$.
3. If Tan A = $\frac{5}{6}$, Tan B = $\frac{1}{11}$. Find the value of Tan (A + B) .
4. If $Sin\ A = \frac{4}{5}$, $cosB = \frac{5}{12}$, A and B being acute. Find the value of cos (A-B).
5. Find the value of Tan ^{2} 60^o + 2Tan ^{2} 45^o.
6. Find the slope of the line joining the points (-2,4) and(3, -2).
7. Evaluate $x^2 e^{2x} dx$.
8. Find $\frac{\partial z}{\partial x} and\ \frac{\partial z}{\partial y}, if\ z = 2x + 3xy + y^2 - 2$.
9. Find the Laplace transform of $e^{2t} + 4t^3 - 2\sin t + 3\cos 3t$.
10. Find the degree of the differential equation $\left[1 + \left(\frac{d^2y}{dx^2}\right)\right] = \left[2 + \left(\frac{dy}{dx}\right)^{10}\right]^{\frac{3}{7}}$.

PART – B

Note: Answer any five questions. **(5 x 10 = 50 Marks)**

11. Solve the system of equations by cramer's rule x-y+2z =7,
    3x +4y-5z = -5, 2x-y+3z = 12.

12. a) If A = $\begin{bmatrix} 2 & 4 \\ 3 & 2 \end{bmatrix}, B = \begin{bmatrix} 1 & 3 \\ -2 & 5 \end{bmatrix} and\ C = \begin{bmatrix} -2 & 5 \\ 3 & 4 \end{bmatrix}$ Find 2A-B+2C .
    b) Find the equation of the line passing through the two points (1,2), (3,4).

13. a) Find the equation of parabola whose focus is S(1,-7) and vertex (1,-2).
    b) Evaluate $\int cos^3 x\ dx$.

14. Find the equation of circle passing through three points (3,4), (3,2), (1,4).

15. a) Find the Laplace transform of L$\{e^{4t}\cos 5t\}$.
    b) Find the Laplace transform of L $\{(\sin t - cost)^2\}$.

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16. a) Solve $\frac{dy}{dx}$ = 2xy-3y+2x-3.

    b) Evaluate $\int \frac{1}{5+4cosx}\, dx$.

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

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

18. a) Find the limits of $\lim_{x\to 0} \frac{\mathrm{Tan}x - \mathrm{Tan\ a}}{x-\mathrm{a}}$.

    b) Find the derivatives of $\frac{\sin x}{x}$.

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Code No: E-12347

FACULTY OF PHARMACY

Pharm D I-Year (6 YDC) (Main & Backlog) Examination, October 2023

Subject: Remedial Biology

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

PART - A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Write about Lung fishes
2. Give the medicinal importance of aves
3. Discuss about Palisade parenchyma
4. What are fungi? Give the pharmaceutical importance of fungi
5. Write a note on Morphology of leaf
6. What are the Functions of Plasma Membrane?
7. Draw the structure of flower and label its parts
8. What is flight adoption in birds
9. List out the animal tissues
10. Write a note on simple fruits.

PART - B

Note: Answer any five questions. **(5 x 10 = 50 Marks)**

11. Explain in detail about cell inclusion in plants
12. Write about general characters, economic importance and medicinal uses Leguminosae
13. Explain about absorption of water and minerals in plants
14. Describe the structure of Dicot and Monocot seed with the help of a neat labelled diagram
15. Explain in detail the various stem modifications
16. Explain in detail about role of yeast in fermentation.
17. Write about Bentham & Hooker's classification of plant kingdom
18. Explain in detail about poisonous animals.

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Code. No: E-12345

FACULTY OF PHARMACY

Pharm. D I Year (6 YDC) (Main & Backlog) Examination, September 2023

Subject: Pharmaceutical Inorganic Chemistry

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

PART-A

Note: Answer all the questions **(10 x 2 = 20 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. Define antidote. What antidote is used in heavy metal poisoning?
5. Write the preparation of 0.1N Perchloric acid.
6. Mention the method of preparation of Milk of Magnesia.
7. Define Cathartics. Give examples.
8. What are anti-caries agents? Give examples.
9. What is ORS? Give its composition.
10. Define Pharmaceutical aids and classify with examples

PART-B

Note: Answer any five questions **(5 x 10 = 50 Marks)**

11. Explain in detail about the Neutralization curves in different types of titrations?
12. (a) Write about the different types of acidifiers with examples.
    (b) Write the method of preparation and uses of purified water.
13. Define Redox Reaction. Explain the preparation and standardization and application of any one redox titrations.
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. Write the method of preparation, assay and uses of calcium gluconate and aluminium hydroxide gel.

Code No: E-12344

FACULTY OF PHARMACY

Pharm D I Year (6 YDC) (Main & Backlog) Examination, September 2023

Subject: Pharmaceutical Organic Chemistry

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

PART-A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Define electrophiles with examples.
2. What is meant by dipole moment and mention its applications.
3. Write the structural formula for the following compounds.
   a) 3-bromo-3-methyl-1-butene b) 2,2-dibromo ethane
4. Define Phase transfer catalyst with examples.
5. Define Saytzeff's rule and its application.
6. Why phenol is weakly acidic in nature?
7. Write the structure and uses of saccharin sodium and lactic acid.
8. Define inductive effect and its types.
9. Mention different types of intermolecular forces.
10. Define resonance with examples.

PART-B

Note: Answer any five questions. **(5 x 10 = 50 Marks)**

11. (a) Explain in detail about the reaction and mechanism of S_N2 reaction.
    (b) What is meant by Diels-Alder reaction? Explain with examples.

12. (a) Explain in detail about the acidity of phenols.
    (b) Write the reaction and mechanism of Aldol condensation.

13. Write the preparation, assay and uses of
    (a) Aspirin
    (b) Tartaric acid
    (c) Chlorbutanol

14. Explain the reaction, mechanism and stereochemistry of E_2 reaction.

15. Write the reaction and mechanism of free radical substitution reaction.

16. Describe in detail about the reaction and mechanism of
    (a) Reformatsky reaction
    (b) Cannizaro reaction

17. What is meant by activating and deactivating groups and classify them with examples.

18. (a) Explain in detail about 1,2 and 1,4 addition of butadienes.
    (b) Define and explain about Markovnikov's Addition.

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Code No. E 12343

FACULTY OF PHARMACY

Pharma. D (6 YDC) I Year (Main & Backlog) Examination, September 2023
Subject: Medicinal Biochemistry

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

PART – A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Write the significance of SGOT & SGPT.
2. How to diagnose Hemolytic Jaundice.
3. Explain the biological significance of HMG CoA reductase.
4. Add a note on glycogen storage diseases.
5. What is the role of ETC in energy regulation.
6. Write a note on Enzyme Inhibitors.
7. Enlist the tests used to analyze abnormal constituents of Urine
8. Write the importance of insulin hormone in glucose uptake and utilization.
9. Give your manifestation of increased triglyceride content in blood.
10. Define a) RIA b) Apoproteins

PART – B

Note: Answer any five questions. **(5 x 10 = 50 Marks)**

11. What is ELISA Test. Explain the various techniques and mechanism involved including its applications.

12. Explain HMP pathway and its Significance.

13. Discuss about Purine and Pyramidine Nucleotide Mechanism.

14. Enumerate the various factors affecting enzyme action along with a role of isoenzymes in diagnosis

15. Explain β-oxidation of saturated fatty acids and its associated disorders.

16. Give detailing of DNA replication process in prokaryotes.

17. What are the various steps involved in gluconeogenesis and explain its significance.

18. a) Explain the nomenclature and classification of enzymes.
    b) Enlist various enzymes and coenzymes involved in metabolism of Carbohydrates.

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Code No. E-12342

FACULTY OF PHARMACY

Pharma. D (6 YDC) I Year (Main & Backlog) Examination, September 2023
Subject: Pharmaceutics

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

PART – A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1 . Define the following terms a) Lotions b) collodions
2. Write short notes on British Pharmacopeia
3. What will be the dose for a child of 4 years if the adult dose of a drug is 200 mg?
4. Write a note on Eutectic powders with examples
5. Write about different types of Emulsions?
6. Find the strength of 95% v/v alcohol in terms of proof spirit
7. Differentiate between flocculated and deflocculated suspensions
8. Why the pharmaceutical preparations are coloured?
9. Differentiate between Maceration and Percolation process
10. Write notes on Sutures and Ligatures

PART – B

Note: Answer any five questions. **(5 x 10 = 50 Marks)**

11. Define Prescription? Explain in detail about parts of Prescription with examples.

12. Write a brief note on the formulations of a) Throat paints b) Liniments .

13. Write a note on a) I.P b) USP

14. Write a note on Formulation and Evaluation of Emulsions.

15. Write in detail about the steps involved in Maceration process.

16. Define Suppositories and write a note on preparation of Suppositories.

17. Classify different types of Chemical Incompatibilities and explain the methods to overcome chemical Incompatibility.

18. Write a note on a) Absorbable gelatin sponge b) Evaluation of Suspensions.

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Code No. D-8350

FACULTY OF PHARMACY

Pharma. D (6 YDC) I Year (Main & Backlog) Examination, September 2022

Subject: Human Anatomy and Physiology

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

PART – A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Write a note on classification of disorders of joints.
2. Write a note on Oral contraceptives.
3. Write a note on lung volume and lung capacity.
4. Write a note on Oogenesis.
5. Discuss the structure of small intestine.
6. Mention the functions of parasympathetic nervous system.
7. Write a note on Renin Angiotensin system.
8. Name the anterior pituitary hormones and mention their functions.
9. What is the composition of pancreatic juice?
10. Define blood pressure and add a note on its regulation.

PART – B

Note: Answer any five questions. **(5 x 10 = 50 Marks)**

11. Describe the anatomical features of ear and discuss the physiology of hearing with a neat labelled diagram.
12. Describe the structure and functions of cerebral hemisphere with a neat labelled diagram.
13. Discuss in detail about the synthesis, storage, transportation and functions of thyroid gland.
14. Describe the anatomical features of kidney with a neat labelled diagram and write the functions of urinary system.
15. Draw a neat labelled diagram of heart and explain in detail about cardiac cycle.
16. Define tissue. Write a note on epithelial and muscular tissues.
17. Explain about natural methods of contraception. Write about functions of testosterone.
18. Write about physiology of respiration in detail.

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Code No. D-8351

FACULTY OF PHARMACY

Pharma. D (6 YDC) I Year (Main & Backlog) Examination, September 2022
Subject: Pharmaceutics

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

PART – A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Define Dosage form and classify the Dosage forms?
2. Name and explain the five factors that Influence the Dose?
3. What will be the dose for a child of 5 years if the adult dose of a drug is 400 mg?
4. Calculate the amount of 95% alcohol required to prepare 400 ml of 45% alcohol?
5. Write a brief account on Dusting powders?
6. What is the difference between Lotions and Liniments?
7. Differentiate Flocculated and De Flocculated Suspensions?
8. Write a note on Identification tests for Emulsion?
9. Write the Importance of colors in Pharmaceutical preparations?
10. Write a notes on Absorbable gelatin sponge?

PART – B

Note: Answer any five questions. **(5 x 10 = 50 Marks)**

11. Define Prescription and write a note on parts of Prescription?
12. Explain ingredients present in Effervescent granules and preparation of Effervescent granules?
13. Explain different problems involved in dispensing of powders and how to avoid them?
14. Write a note on formulations of Emulsions?
15. Write in detail about the steps involved in Percolation process with neat diagram?
16. Define Suppositories and write the Evaluation methods of Suppositories?
17. Define Incompatibility and explain different Therapeutic Incompatibilities and Methods to over come them.
18. Write a note on (a) Medicated bandages (b) Catgut.

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Code No. D-8353

FACULTY OF PHARMACY

Pharma. D (6 YDC) I Year (Main & Backlog) Examination,
September 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 nucleophile and give some examples.
2. Define Isomerism? Classify it.
3. Write the structure and uses of the following
   (a) Salicylic acid (b) Lactic acid.
4. Mention the difference between protic and aprotic solvents.
5. Why phenol is more acidic than alcohol.
6. Write a note on Williamson's ether synthesis.
7. Write any two applications of aryl diazonium salt.
8. Define the term dipole moment and write its applications.
9. Write the structure of the following:
   (a) Isobutyl alcohol (b) 2-Chloro-3-methyl butanoic acid.
10. Compare the basicity of ammonia with aliphatic amines.

PART – B

Note: Answer any five questions. **(5 x 10 = 50 Marks)**

11. (a) Explain in detail about the radical substitution reactions of alkanes.
    (b) Describe the mechanism and stereochemistry of S_N2 reaction.
12. What is mean by electrophilic aromatic substitution reaction? Write the various types of it with mechanism.
13. Describe the following reactions with mechanism
    (a) Aldol condensation (b) Perkin reaction.
14. Write the preparation, assay and uses of Dimercaprol and Aspirin.
15. Write a note on acyl substitution reactions with appropriate mechanism.
16. Describe in detail about the mechanism of
    (a) Cannizaro reaction (b) Michael addition.
17. Explain the 1,2 and 1,4-addition reactions of butadiene.
18. Write a short note on
    (a) Phase transfer catalysis (b) Diel's – Alder reaction.

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Code No. D-8356

FACULTY OF PHARMACY

Pharma. D (6 YDC) I Year (Main & Backlog) Examination, October 2022

Subject: Biology

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

PART – A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Dentition in mammals
2. Secondary sexual characters of frog
3. Cytoskeleton
4. Floral diagram
5. Thallospores
6. Adventitious root system
7. Uniparous branching
8. Palisade parenchyma
9. Crop and Gizzard of Aves
10. Pistil of flower

PART – B

Note: Answer any five questions. **(5 x 10 = 50 Marks)**

11. (a) Write the general characters of Reptiles.
    (b) What is the economic importance of Aves?
12. Describe the structure of dicot endospermic seed and monocot endospermic seed.
13. Explain about absorption of water and minerals in plants.
14. Write about: (a) Cymose Inflorescence (b) Special forms of Inflorescence.
15. (a) Write the classification and economic importance of Pisces.
    (b) Give a note on blood circulation in Pisces.
16. Write about: (a) Morphology of leaf (b) Venation.
17. Write the general characters, economic importance and medicinal uses of Solanaceae plants.
18. Write about Bentham and Hooker's classification.

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Code No. D-8355

FACULTY OF TECHNOLOGY

Pharm. D I - Year (6 YDC) (Main & Backlog) Examination, October 2022

Subject: Remedial Mathematics

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

PART – A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Show that $\begin{vmatrix} 1 & a & bc \\ 1 & b & ca \\ 1 & c & ab \end{vmatrix} = (b-c)\,(c-a)(a-b)$.
2. IF $A = \begin{bmatrix} 3 & 1 \\ -1 & 2 \end{bmatrix}$ show that $A^2 - 5A + 7I = 0$.
3. Prove $\frac{sin\theta}{1+Cos\theta} + \frac{1+Cos\theta}{sin\theta} = 2\,\text{cosec}\theta$.
4. Show that $\frac{Tan\,69^\circ + Tan\,66^\circ}{1 - Tan\,69^\circ \cdot Tan\,66^\circ} = -1$.
5. Find $\frac{dy}{dx}$, if $y = \frac{2x}{x+6}$
6. Find $\frac{\partial z}{\partial x}$ and $\frac{\partial z}{\partial y}$ if $z = 3x^2 - 2xy + 7y^2$.
7. Evaluate $\int x^2 \cdot e^{2x}\, dx$.
8. Find the distance between the pair of points $(5,1)(8,4)$.
9. Find L$\{e^{-4t} + 3e^{-2t}\}$.
10. Find the equation of the circle with centre at c and radius r, $c = (-1,-3), r = \frac{1}{2}$.

PART – B

Note: Answer any five questions. **(5 x 10 = 50 Marks)**

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

$$x + 2y - z = 1,\ 3x + 5y - 2z = 5,\ 2x + 6y + 3z = -2.$$

12. (a) Find the equation of the circle passing through the points through the points $(0,2)(3,0)(3,2)$.

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

13. (a) Find the equation of the parabola whose focus is (-2,-1) and directri $x\ is\ x = -4$.

    (b) If $Tan\alpha = \frac{1}{8}\ and\ Tan\beta = \frac{7}{9}$ find the value of $\alpha + \beta$ if $0^\circ < \alpha + \beta < 360^\circ$.

14. (a) Find $\frac{d^2y}{dx^2}$ if $y = \log(3x - 4)$.

    (b) If $u = x^3y^2 - y\sin x$, then find $\frac{\partial u}{\partial x}$ and $\frac{\partial u}{\partial y}$.

15. (a) Evaluate $\int \frac{2x+9}{x^2+9x+10}\, dx$.

    (b) Evaluate $\int \frac{1}{1+cosx}\, dx$.

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16. (a) If $u = Tan^{-1}\left(\frac{x^3+y^3}{x-y}\right)$, then show that $x\frac{\partial u}{\partial x} + y\frac{\partial u}{\partial y} = \sin 2u$.

    (b) Find $\lim_{x\to 2}\frac{x^4-16}{x^2-4}$.

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

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

    (b) Find the Laplace transform of $e^{2t}(2t^2 - 3t + 4)$.

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Code. No: D-8354

FACULTY OF PHARMACY

Pharm. D I- Year (6-YDC) (Main & Backlog) Examination, September 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 Sulphates.
2. Write a note on Primary and Secondary standard substances.
3. Write the method of preparation, assay and uses of Magnesium Carbonate.
4. Explain Strong acid – Weak base neutralization curve.
5. Write a note on limit test for Chlorides.
6. Write the method of preparation, assay and uses of Magnesium Hydroxide Mixture.
7. What are Expectorants? Write the mechanism of action with examples.
8. Explain Strong Base – Weak Acid neutralization curve.
9. What are antacids? Write about the different types of antacids with examples.
10. Write the method of preparation, assay and uses of KBr.

PART - B

Note: Answer any five questions **(5 x 10 = 50 Marks)**

11. Write a note on Statistical treatment of data.
12. Explain the physiological role of Mn and Cu.
13. Write a note on Volhard's method and Fagan's method.
14. Write a note on acid base concepts.
15. Write the preparation, assay and uses of Oxygen and Carbon dioxide.
16. Explain the physiological role of Se and Cr.
17. Write the method of preparation, assay and uses of Sodium Chloride and Calcium Chloride.
18. Write the method of preparation, assay and uses of $AgNO_3$ and $KMnO_4$.

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Code No. D-8352

FACULTY OF PHARMACY

Pharma. D (6 YDC) I Year (Main & Backlog) Examination,
September 2022
Subject: Medicinal Biochemistry

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

PART – A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Write about carrier medicated transport systems.
2. Define and write energies of glycolysis.
3. Define co-enzymes and their role in Biochemical process.
4. Explain about nitrogen balance.
5. What is Genetic Code? Write characteristic features of genetic code.
6. What is creatinine clearance? Write its Diagnostic significance.
7. Give the tests for any three abnormal constituents of Urine.
8. Write a note on essential amino acids.
9. Explain the liver enzymes tests.
10. Write about water balance and electrolyte distribution.

PART – B

Note: Answer any five questions. **(5 x 10 = 50 Marks)**

11. (a) Explain Glycogenolysis and its energetics?
    (b) Write about Galactose tolerance test.
12. Discuss about purine & pyramidine nucleotide metabolism.
13. Discuss in detail about RIA & ELISA.
14. Enlist the steps involved in ketogenesis and explain its regulation. Add a note on ketoacidosis.
15. (a) Write the biosynthesis and biological significance of cyclic AMP.
    (b) Write a note on Urinary calculi.
16. How electrolyte balance is regulated in the body fluids.
17. What is biological oxidation? Explain the mechanism of ETC and its regulation.
18. Explain about catabolism of Amino acids.

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Code No. D-8027

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 $\begin{vmatrix} 1 & 1 & 1 \\ a & b & c \\ a^2 & b^2 & c^2 \end{vmatrix} = (a-b)\,(b-c)(c-a)$.
2. Find $x\ and\ y$ if $\begin{bmatrix} x+y & 3 \\ -1 & x-y \end{bmatrix} = \begin{bmatrix} 4 & 3 \\ -1 & 8 \end{bmatrix}$
3. If $sin\ A = \frac{4}{5}$ and $\sin B = \frac{5}{13}$, find the value of $Sin\ (A+B)$.
4. If $Tan\alpha = \frac{5}{6}\ and\ Tan\beta = \frac{1}{11}$ 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 $\frac{\partial z}{\partial x}, \frac{\partial z}{\partial y}$.
8. Evaluate $\int x^2 \cdot e^{3x}\ dx$.
9. Find the distance between the pair of points $(-3,7)(-8,5)$.
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

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

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

    (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 directri $x\ is\ x = -4$.

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

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

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

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

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

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

17. (a) Show that $\frac{\sqrt{3}\,Cos\,23^\circ - Sin23^\circ}{2} = cos\,53^\circ$.

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

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

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Code No. D-8028

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.

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Code No. D-8022

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.

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Code No. D-8026

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.

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Code No. D-8025

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 saytzefs rule.
9 Write the difference between E_1 & E_2 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.

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Code No. D-8024

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 β-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.

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Code No. D-8023

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.

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Code No. 12475/PB

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 it 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 FEVI & 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 gonorrhea & Syphilis.

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Code No. 12452

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 $A=\begin{bmatrix}1 & 2\\ 0 & 1\end{bmatrix}$, then find A^{-1}.

2 Find the rank of the matrix $A\begin{bmatrix}2 & 0 & 1\\ 7 & 1 & 2\\ 3 & -1 & 1\end{bmatrix}$.

3 If LA =18°, LC =132°, a=7m, 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 $\lim_{n\to\infty}\frac{2x+3}{5x+7}$.

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

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

10 Write $L\{e^{at}Int\}$.

PART – B (4 x 10 = 40 Marks)

Note: Answer any four questions from Part-B.

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

12 (a) If $A=\begin{bmatrix}1 & i\\ i & -1\end{bmatrix}, B=\begin{bmatrix}-1 & i\\ -i & -1\end{bmatrix}$, 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 $x^2+2x+4y-3=0$.

(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 $x^2+xy-y^2=1$ *at* $P(2,3)$.

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

..2..

15 State and prove first shifting property of Laplace transform.

16 (a) Find order and degree of the differential equations $\left[1+\left(\frac{dy}{dx}\right)^2\right]^{1/2} = x^2 + y$.

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

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

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

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

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

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Code No. 12453

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 Kreb'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.

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Code No. 12451

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.

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Code No. 12450

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 SN_1 and SN_2 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.

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Code No. 12449

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.

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Code No. 12448

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 8^{th} 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 floz 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.

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Code No. 12447

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.

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Code No. 12160

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.

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Code. No: 12165

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 $A = \begin{bmatrix} 1 & -1 \\ 3 & 0 \end{bmatrix}$, $B = \begin{bmatrix} 3 & 1 \\ 1 & 4 \end{bmatrix}$, find A+B

2 If $A = \begin{bmatrix} 1 & 1 \\ 1 & 9 \end{bmatrix}$, 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 $\lim_{x \to 3} \left(\frac{x^2 - 9}{x - 3} \right)$

7 Find the equation of the straight line lone passing through the points (2,3) and slope 3.

8 Evaluate $\int_0^4 \left(3x - \frac{x^3}{4} \right) dx$

9 Eliminate arbitrary constants from $y = ae^x + be^{2x}$ and obtain the differential equation.

10 Find (i) $L\{3t^2 - 5e^{-2t} + 6\}$ (ii) $L^{-1}\left\{ \frac{s}{s^2 - 4} \right\}$

PART- B (4x10 = 40 Marks)

11 a) Find the rank of the martix $\begin{bmatrix} 1 & 4 & 5 \\ 2 & 6 & 8 \\ 3 & 7 & 22 \end{bmatrix}$

b) If $A = \begin{bmatrix} 1 & 1 & 2 \\ 1 & 9 & 3 \\ 1 & 4 & 3 \end{bmatrix}$, 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

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 $\frac{\partial z}{\partial x}, \frac{\partial z}{\partial y}$ and show that $\frac{\partial^2 z}{\partial x \partial y} = \frac{\partial^2 z}{\partial y \partial x}$

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

15 a) Evaluate $\int_0^1 t^3 \left(1 + t^4\right)^3 dt$

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

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

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

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 $3x + 4y + 1 = 0$

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Code No. 12166

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.

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Code No. 12164

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 Radiopharmaceuitcals.

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Code. No: 12163

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 allylradical

6 Discuss the acidity of phenols

7 Write about walden inversion.

8 Why – NH_2 group is activating and ortho. para directing group and why NO_2 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 ii) Dimercaprol

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Code. No: 12162

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?

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Code. No: 12161

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?

10/12/2020(F.N)

Code No.6375

FACULTY OF PHARMACY

Pharm. D. (6 YDC) I – Year (Main & 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) I.P.
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.

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Code. No: 6374

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.

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Code No.6380

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 $\lim_{x \to \pi/2} \frac{\cos x}{\pi/2 - x} = 1$.
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 directx is x=6.

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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 $\lim_{x\to 0}\frac{1-\cos x}{x \sin x}$.

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

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

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 30^0, 60^0, 90^0, find sides of a triangle.

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

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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 & Krebs cycle

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.

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Code No. 6379

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 aid – 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.

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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.

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Code No.6377

FACULTY OF PHARMACY

Pharm. D. (6 YDC) I – Year (Main & Backlog) Examination, December2020

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 E_1 and E_2.
14. Write the mechanism involved in the following:
    (a) Fries Migration.
    (b) Witting 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 reations? 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 Riemer-Tiemenn's reaction.
    (b) Write the Sandmeyer's reaction.

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Code No.6376

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.

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Code No: 6176

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.

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Code No: 6177

FACULTY OF PHARMACY

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

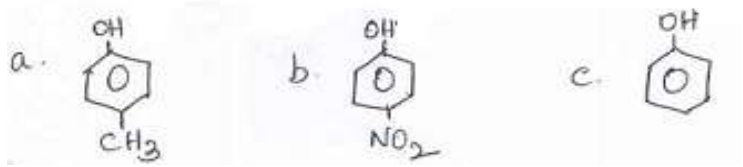
Subject: Pharmaceutical Organic Chemistry

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**.**



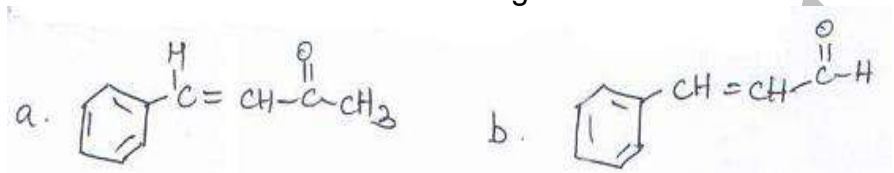
2 Phenol is more acidic than alcohol. Why?

3 Explain Saytzeffs 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.

Code. No: 6178

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.IN 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

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Code No. 6179

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 $\lim_{x \to 3} \left(7x^3 + 4x^2 + 3x \right)$.
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 $SinA = 4/5$ and $SinB = 5/13$ 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 directix is $x + y + 7 = 0$ 10M

Contd..2

14. (a) If $u = Sin^{-1}\left(\frac{x^2 + y2}{x + y}\right)$, then $x\frac{\partial u}{\partial x} + y\frac{\partial u}{\partial y} = T\text{an}\, u$.

(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 $(e^x + 1)ydy = (y + 1)\, e^x dx$.

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

17. (a) Find the Laplace transforms of $e^{2t}\left(2t^2 - 3t + 4\right)$.
(b) Find the Laplace transforms of $\cos 3t.\, Sin\ 2t$. 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 $\lim_{x \to 2} \frac{Tan\ (x - 2)}{x^2 - 4} = \frac{1}{4}$. 10M

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Code No. 6180

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

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Code No: 6174

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

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Code No: 6175

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 proculated and deflocculated suspensions.
10. Write a brief note on chemical incompatabilities.

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. Insulfflations b. Dusting powder c. Eutertic 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 mining powders!

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Code NO: 13274

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

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Code No: 13276

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.

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

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Code No: 13278

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.
    (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)

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16. Write the mechanism involved in the following
    a. Fries rearrangement
    b. wittig reaction
17. Write short notes on the following
    a. Hyperconjugation
    b. Oxidation and reduction reactions of carbonyl compounds
18. Explain the Markovnikov rule and antimarkovnikov rule in propene with mechanism.

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Code No: 13275

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.

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Code No. 13279

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 $\begin{vmatrix}Tanx & Secx\\ Secx & Tanx\end{vmatrix}$

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 $\int Secx\,dx$

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 $\lim_{x\to 2}\left(3x^3 + 2x^2 + x\right)$

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) $Sin^{-} = 3/5$ and $^{-}$ is acute, find the value of value of $2Tan^{-} + 3Sec^{-} + 4Sec^{-}.Co\sec^{-}$

(b) Eliminate $^{-}$ from $x = a\cos^{-}, y = a\sin^{-}$ 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 directix is $x + y + 1 = 0$ 10M

Contd..2

14. (a) If $u = \frac{x^3 + y^3}{x - y}$ then $x\frac{\partial u}{\partial x} + y\frac{\partial u}{\partial y} = Sin2u$

(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 $(x+1)\frac{dy}{dx} + 1 = 2\,e^{-y}$

(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 $\lim_{x \to 2} \frac{Tan(x-2)}{x^2 - 4} = \frac{1}{4}$ 10M

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Code No. 13280

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 pencillium 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

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Code No. 1237

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

13 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

14 Describe the anatomical features of ear with a neat labeled diagram and discuss the physiology of hearing. 6+4

15 Write a note on:
   a) Spermatogenesis 5
   b) Oral contraceptives 5

16 List out the cranial nerves and discuss its functions. 10

17 Write the process of digestion and absorption in GIT. 10

18 Give a detailed note on pituitary gland. 10

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Code No. 1241

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

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Code No. 1240

FACULTY OF PHARMACY

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

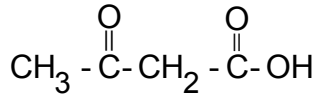
Subject: Pharmaceutical Organic Chemistry

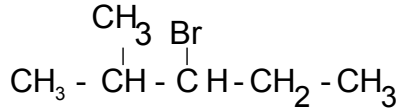
Time: 3 Hours **Max.Marks: 70**

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:

a) 

b) 

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

..2

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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Code No. 1239

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 – oxidation of saturated fatty acids and write the total energy yield from complete oxidation of one molecule of palmitic acid.

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Code No. 1238

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

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Code No.1242

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 $\int_0^{®/2} \sin x \, dx$.

6 Find the order and degree of differential eqn.
$y'' + (y')^2 + 5y = x^2$.

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

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

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 $(\sin^{-})A + (\cos^{-})B$.

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 $(A+B) = ®/4$ 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 $\sin^2 B + \cos^2 B$.

..2

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 $\lim_{x\to 1} \frac{ax^2 + x + 5}{x - 2} = 3$ 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 $\int_1^2 \log x \, dx$.

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

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 $\lim_{x\to 2} \frac{\tan(x-2)}{x^2 - 4} = \frac{1}{4}$.

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

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Code No. 1243

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.

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Code No. 1100

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)

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Code No. 1102

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.

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Code No. 1105

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~ , a sin~) 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 $\lim_{x \to 2} \frac{x^4 - 2^4}{x^2 - 2^2}$.

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 $\begin{bmatrix} 2x+1 & 0 \\ 2y+4 & 0 \end{bmatrix} = \begin{bmatrix} 3 & 0 \\ 8 & 0 \end{bmatrix}$ then find x and y.

12 a) If $\tan A = \frac{5}{12}$ then find tan (A+B).

b) If $x = \aleph \cos\theta \cos\alpha$, $y = \aleph \cos\theta \sin\alpha$ and $z = \aleph \sin\theta$ 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 $\lim_{x \to 1} \frac{\tan(x-1)}{x^2 - 1}$.

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 $\frac{d^2y}{dx^2} = -\frac{2a^2xy}{(y^2 - ax)^3}$.

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Code No. 1106

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 not eon 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)

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Code No. 1104

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)

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Code No. 1103

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 E_1 and E_2 mechanism.

13 Explain the following:
(a) Markovinikov'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_N^1 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) Benszoin condensation

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Code No. 1101

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 on handling of prescription.
4 What will be the dose of a chid 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 super 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) Insulfflations (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.

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Code No. 4250

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

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Code No. 4255

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

$$\frac{d^3y}{dx^2}+\frac{d^2y}{dx^2}+\left(\frac{dy}{dx}\right)^3+y=0.$$

7 Find the Lapalce transform of $\cos^2 t$.

8 Find the center and radius of the circle $x^2 + y^2 + 2x - 4y + 5 = 0$.

9 Find $\lim_{x\to -7}\frac{2x^2-98}{x+7}$.

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 $y^2 = 6x$.

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

(b) If z = log (tan x + tany) then show that

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

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 $\frac{dy}{dx}=\frac{y^2}{x^2}$.

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Code No. 4256

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.

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Code No. 4254

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 Mohrs 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 meta bisulphite.

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.

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Code No. 4251

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} O.P. and 35^{o} 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.

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Code No. 4252

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 Kreb'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.

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Code No. 4253

FACULTY OF PHARMACY

Pharm D (6 – YDC) I – Year (Main) Examination, July 2017

Subject: Pharmaceutical Organic Chemistry

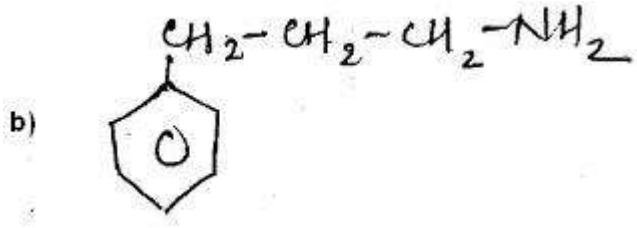
Time: 3 Hours **Max.Marks: 70**

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:

a) $CH_3 - CH(CH_3) - CH(Cl) - COOH$

b) 

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 Markownikoffi 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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Code No. 6113

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

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Code No. 6116

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 Arensic 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)

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Code No. 6115

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:

a) $CH_3 - \underset{\displaystyle CH_3}{\underset{|}{C}} = CH - CH = CH_2$

b) $CH_3 - \overset{\displaystyle O}{\overset{||}{C}} - CH_2 - \overset{\displaystyle O}{\overset{||}{C}} - CH_3$

2 Give the step involved in the conversion of aniline into para-nitro aniline.

3 Give the structure formula of
a) Methyl-1-penten-4-yne
b) 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^+_{30} 3) CN^- 4) Cl_2

9 Predict the product

i) $CH_3 - CH = CH_2 + HBr \xrightarrow{\text{Peroxide}} ?$

ii) $CH_3 - CH = CH_2 + HBr \xrightarrow{\text{No-Peroxide}}$

10 Explain Cannizzaro reaction.

PART – B (5x10 = 50 Marks)

11 Explain the nucleophillic substitution reaction with Mechanism. 10

12 Explain with mechanism: 10
i) Aldol-condensation
ii) Sadmeyer's reaction

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13 Define rearrangement reaction. Explain mechanism of following reaction. 10

i) Fries rearrangement reaction

ii) Hoffman rearrangement reaction.

14 Explain the mechanism of electrophillic 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.

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Code No. 6114

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.

Code No. 6117

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 $\begin{vmatrix} y+z & x & x \\ y & z+x & y \\ z & z & x+y \end{vmatrix} = 4\,xyz$.

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 $x = \text{ɤ}\cos^{-}\cos\sim$, $y = \text{ɤ}\cos^{-}\sin\perp$ and $z = \text{ɤ}\sin^{-}$, 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 $\lim_{x\to 1} \frac{\sin(x-1)}{x^2-1} = \frac{1}{2}$.

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

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Code No. 6118

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 Ovipary.
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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Code No. 8102

FACULTY OF PHARMACY

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

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 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 diastotic 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

FACULTY OF PHARMACY

Pharm. D I-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% liquefiedphenol required to compound 240 ml calamine lotion?

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

FACULTY OF PHARMACY

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

Subject : Pharmaceutical Organic Chemistry

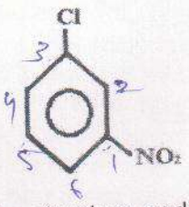
Time : 3 Hours **Max. Marks: 70**

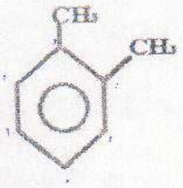
Note: Answer all questions from Part - A and answer any five questions from Part-B.

PART – A (10x2=20 Marks)

1 Define Isomerism with suitable examples.

2 Write the IUPAC names of the following:

(i) 

(ii) 

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 Saytzef'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 SNI 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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Code No. 8104

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 coment 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 in 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 : (5+5)
(a) Witting reaction (b) Aldol condensation

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 - nitrobenzoyl chloride $\xrightarrow{LiAlH(O\text{-}tBu)_3}$

(ii)

Benzoyl chloride + Benzene $\xrightarrow{AlCl_3}$

(iii)

isobutyl alcohol $\xrightarrow{KMnO_4}$

(iv)

m-Toluic acid $\xrightarrow[LiAlH_4]{}$

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Code No. 8106

FACULTY OF PHARMACY

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

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 (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-Hassel balch 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)

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Code No. 7284

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. (b) Write about digestion of protein.	4 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

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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 intribition.	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. (i) Base excission Repair (ii) SOS Repair	5
16	(a)	Write about the Urea cycle.	5
	(b)	Write about the HDL and LDL cholesterols.	5
17	(a)	Write about difference between the gluconeogenesis and glycogenesis.	5
	(b)	Discuss about the Transmination and decarboxylation.	5
18		Write a note on electrolytes.	10

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Code No. 7285

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 does 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	Different 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 powers 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 floculated and deflouculated 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 maleration process.	10

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Code No. 7288

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

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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 diasteriomers?	2
2	What are aprotic solvents?	2
3	What is a neucleophile?	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. (i) 1, 2-dibromo-2-methylpropane (ii) 2, 5-dimenthylhexane	2
10	Compare the relative acidities of acetylene, ammonia.	2

Section – B (50 Marks)

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

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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 $x = a \text{ Sec}^n\theta$, $y = b \tan^n\theta$.

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. $\frac{d^3y}{dx^3} + \left(\frac{d^2y}{dx^2}\right)^2 + \frac{dy}{dx} + y = 0$

8 Evaluate $\underset{x\to 2}{Lt} \frac{x^2-4}{x-2}$.

9 Find the Laplace transform sinat.

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 $\frac{\text{Tan } 250^\circ + \text{Tan } 340^\circ}{\text{Tan } 200^\circ - \text{Tan } 110^\circ} = \frac{1-K^2}{1+K^2}$.

(b) Prove that $\frac{1}{\text{Cos } 290^\circ} + \frac{1}{\sqrt{3}\,\text{Sin } 250^\circ} = \frac{4}{\sqrt{3}}$.

13 (a) Show that $\underset{\theta\to 0}{Lt} \frac{\tan a\theta}{\sin b\theta} = \frac{a}{b}$.

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

……2

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.

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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.

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