

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

Subject : Human Anatomy and Physiology

Time : 3 Hours

Max. Marks: 70

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

PART – A (10 x 2 = 20 Marks)

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

PART – B (5 x 10 = 50 Marks)

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

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

Subject : Remedial Mathematics

Time : 3 Hours

Max. Marks: 70

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

PART – A (10 x 2 = 20 Marks)

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

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

PART – B (5 x 10 = 50 Marks)

11 (a) Show that $\begin{vmatrix} 1 & a & a^2 - bc \\ 1 & b & b^2 - ca \\ 1 & c & c^2 - ab \end{vmatrix} = 0.$

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

Then find C such that $A + B - C = 0$.

12 (a) $\sin A = 8/17$ then find $\cos (A + B)$.

(b) Simplify $\sqrt{\frac{1 + \tan^2 A}{1 + \cot^2 A}}$

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

(b) Find the value of k if the line $2y = 5x + k$ is a tangent the parabola $y^2 = 6x$.

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

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

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

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

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

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

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

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

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

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

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

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

Subject : Biology

Time : 3 Hours

Max. Marks: 70

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

PART – A (10 x 2 = 20 Marks)

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

PART – B (5 x 10 = 50 Marks)

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

FACULTY OF PHARMACY

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

Subject : Pharmaceutical Inorganic Chemistry

Time : 3 Hours

Max. Marks: 70

Note: Answer all questions from Part - A and answer any five questions from Part-B.**PART – A (10 x 2 = 20 Marks)**

- 1 Calculate the normality for 500 ml solution containing 4 gm of sodium hydroxide
- 2 Define accuracy and precision.
- 3 What are co-precipitation, occlusion and post-precipitation?
- 4 Distinguish Iodometry and Iodimetry.
- 5 What is 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.

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

Subject : Pharmaceutics

Time : 3 Hours

Max. Marks: 70

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

PART – A (10 x 2 = 20 Marks)

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

PART – B (5 x 10 = 50 Marks)

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

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

Subject : Medicinal Biochemistry

Time : 3 Hours

Max. Marks: 70

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

PART – A (10 x 2 = 20 Marks)

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

PART – B (5 x 10 = 50 Marks)

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

FACULTY OF PHARMACY

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

Subject: Pharmaceutical Organic Chemistry

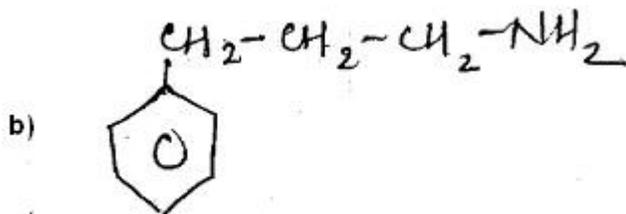
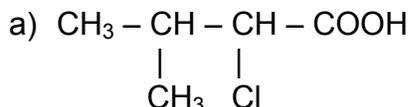
Time: 3 Hours

Max.Marks: 70

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

PART – A (10x2 = 20 Marks)

1 Write IUPAC names of the following:



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

PART – B (5x10 = 50 Marks)

- 11 a) Explain the reaction and mechanism of 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

FACULTY OF PHARMACY

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

Subject: Pharmaceutics

Time: 3 Hours

Max.Marks: 70

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

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

PART – B (50 Marks)

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

FACULTY OF PHARMACY

Pharm. D I-Year (6-YDC) (Main & Backlog) Examination, August 2016

Subject : Pharmaceutical Inorganic Chemistry

Time : 3 Hours

Max. Marks: 70

Note: Answer all questions from Part - A and answer any five questions from Part-B.**PART – A (10 x 2 = 20 Marks)**

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

PART – B (5 x 10 = 50 Marks)

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

FACULTY OF PHARMACY

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

Subject: Pharmaceutical Organic Chemistry

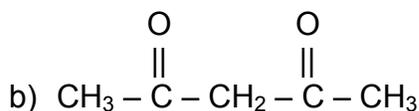
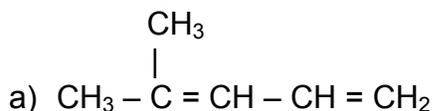
Time: 3 Hours

Max.Marks: 70

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

PART – A (10x2 = 20 Marks)

1 Write the IUPAC name of the following:



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

3 Give the structure formula of

a) Methyl-1-penten-4-yne

b) 5-Hydroxy-3-hexenal

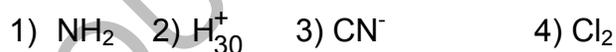
4 Comment on ethanol and dimethyl ether are isomer, but differ in the boiling point.

5 Briefly explain Bayer's strain theory.

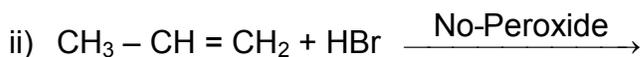
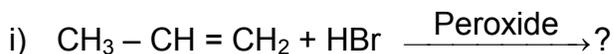
6 Write the different between SN_1 and SN_2 .

7 Explain Saytzeff rule.

8 Classify each of the following nucleophil or electrophil



9 Predict the product



10 Explain Cannizzaro reaction.

PART – B (5x10 = 50 Marks)

11 Explain the nucleophilic substitution reaction with Mechanism.

10

12 Explain with mechanism:

10

i) Aldol-condensation

ii) Sadmeyer's reaction

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

FACULTY OF PHARMACY

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

Subject: Medicinal Biochemistry

Time: 3 Hours

Max.Marks: 70

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

PART – A (10x2 = 20 Marks)

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

PART – B (5x10 = 50 Marks)

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

FACULTY OF PHARMACY

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

Subject: Remedial Mathematics

Time: 3 Hours

Max.Marks: 70

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

PART – A (10x2 = 20 Marks)

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

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

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

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

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

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

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

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

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

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

PART – B (5x10 = 50 Marks)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

- 1 What are plastids?
- 2 Write about parenchyma.
- 3 What is leaf?
- 4 Explain Tyloses.
- 5 What is Corm?
- 6 Explain Aestivation.
- 7 What is Penicillin?
- 8 Explain 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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FACULTY OF PHARMACY
Pharm. B. Year (I-Yr) (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 diastolic pressure.
- 5 What is the difference between a lung volume and lung capacity?
- 6 How is pancreatic juice secretion regulated?
- 7 What is micturition? How does the micturition reflex occur?
- 8 What is the function of lacrimal apparatus?
- 9 Where are sperm cells produced?
- 10 Define the terms:
(a) Miosis (ii) Mydriasis

PART - B (5 x 10 = 50 Marks)

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

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Code No. 8103

Faculty of Pharmacy
B.Pharm V Year (6-YDC) (Main & Backlog) Examination, August 2015

Subject: Pharmaceutics

Time : 3 Hours

Max. Marks: 70

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

PART - A (10x2=20 Marks)

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

PART - B (5x10=50 Marks)

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

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FACULTY OF PHARMACY

Pharm. D. I Year (D.C.) Main & B.G. Reg. Exam. Date: August 2015

Subject : Pharmaceutical Organic Chemistry

Code No. 8105

Time : 3 Hours

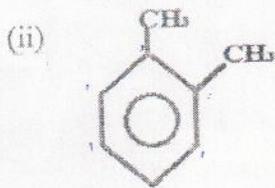
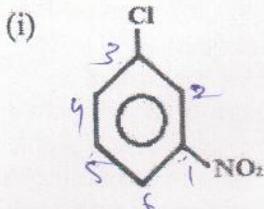
Max. Marks: 70

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

PART - A (10x2=20 Marks)

1 Define Isomerism with suitable examples.

2 Write the IUPAC names of the following:



3 Write the structure and uses of Vanillin.

4 Explain the acidic nature of acetylene.

5 How do you identify the alcohols?

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

7 Explain the Saytzev's rule.

8 Write any method for the synthesis of cyclopentane.

9 Explain the Friedel-Crafts Alkylation.

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

PART - B (5x10=50 Marks)

11 (a) Explain the stereochemistry of SN1 and SN2 reactions. (7)
(b) Why conjugated dienes are more stable compared to non-conjugated dienes? (3)

12 (a) Mention any three methods for synthesis of alcohols. (7)
(b) How do you distinguish 1°, 2°, 3° alcohols in laboratory and explain the reactions? (3)

13 (a) Discuss the Halogenation of alkanes including its mechanism. (6)
(b) Explain in detail about Hoffmann rearrangement. (4)

14 (a) Explain the sequence rules with examples. (5)
(b) Describe the chemical reactions of Aldehydes and Ketones. (5)

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FACULTY OF PHARMACY

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

Subject : Medicinal Biochemistry

Time : 3 Hours

Code No. 8104

Max. Marks: 70

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

PART - A (10x2=20 Marks)

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

PART - B (5x10=50 Marks)

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

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- 15 Explain the mechanism involved in the following reactions :
(a) Wittig reaction (b) Aldol condensation (5+5)
- 16 (a) Explain the basicity of Amines (5)
(b) Explain the mechanism and uses of Williamson synthesis. (5)
- 17 Write preparation, test for purity, assay and uses of following: (5+5)
(a) Benzoyl benzoate
(b) Methyl salicylate
- 18 Predict the following

(i)



p - nitrobenzoyl chloride $\xrightarrow{\text{LiAlH}(\text{O}-t\text{Bu})_3}$

(ii)



Benzoyl chloride + Benzene $\xrightarrow{\text{AlCl}_3}$

(iii)

isobutyl alcohol $\xrightarrow{\text{KMnO}_4}$

(iv)

m-Toluic acid $\xrightarrow{\text{LiAlH}_4}$

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Code No. 8106

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-Hasselbalch equation.
6. What is an Arrhenius acid and Arrhenius base? Give an example of each.
7. Mention the method of preparation of "Milk of Magnesia".
8. Give one preparation method and uses of Nitrous oxide.
9. Mention the differences between iodometry and iodimetry.
10. Write the applications of Redox titrations.

PART - B (5x10=50 Marks)

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

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FACULTY OF PHARMACY

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

Subject : Human Anatomy and Physiology

Time : 3 Hours

Max. Marks: 70

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

Section – A (10 x 2 = 20 Marks)

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

Section – B (50 Marks)

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

FACULTY OF PHARMACY

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

Subject : Medicinal Biochemistry

Time : 3 Hours

Max. Marks: 70

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

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

Part – B (50 Marks)

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

FACULTY OF PHARMACY

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

Subject : Pharmaceutics

Time : 3 Hours

Max. Marks: 70

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

Section – A (10 x 2 = 20 Marks)

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

Section – B (50 Marks)

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

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

Subject: Pharmaceutical Inorganic Chemistry

Time: 3 Hours

Max.Marks: 70

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

PART – A (25 Marks)

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

PART – B (5 x 10 = 50 Marks)

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

FACULTY OF PHARMACY

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

Subject : Pharmaceutical Organic Chemistry

Time : 3 Hours

Max. Marks: 70

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

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

Section – B (50 Marks)

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

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

Subject: Remedial Mathematics

Time: 3 Hours

Max.Marks: 70

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

PART – A (10 x 2 = 20 Marks)

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

PART – B (5 x 10 = 50 Marks)

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

- 14 (a) Evaluate $\int_0^a \frac{dx}{1+\sqrt{x}}$
(b) Evaluate $\int \sqrt{a^2 - x^2} dx$.
- 15 (a) Solve $e^x \tan y dx + (1-e^x) \sec^2 y dy = 0$.
(b) Solve $(D^2+1)y = e^x + \sin x + x^2$.
- 16 (a) If $L[F(t)] = F(s)$ then prove that $L(e^{at}F(t)) = F(s-a)$.
(b) Find the Laplace transform of $e^{2t} + t^2 + t \sin t$.
- 17 (a) Verify $\frac{\partial^2 z}{\partial x \partial y} = \frac{\partial^2 z}{\partial y \partial x}$ 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 $3y - 25 = 0$.

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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FACULTY OF PHARMACY
Pharm-D. I-Year (Main) Examination, Aug / Sept 2013

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 (10x2=20 Marks)

1. Define the terms : (2)
(a) Arteriosclerosis (b) Angina pectoris
2. List the hormones secreted by pancreatic islets and write their functions. (2)
3. List the mixed type of cranial nerve. Write the functions of vagus nerve. (2)
4. List the functions of cerebro spinal fluid. (2)
5. Explain the terms : (2)
(a) Tidal volume and (b) Vital capacity
6. Explain the terms : (2)
(a) depolarization (b) Hyperpolarization
7. Define the terms: (2)
(a) Spermatogenesis (b) Oogenesis
8. Define the term: (2)
(a) Appendicitis (b) Gastritis
9. Write about various movement of Gastro intestinal tract. (2)
10. Write about Respiration in exercise. (2)

Section – B (50 Marks)

1. Classify tissues. Explain in detail about Epithelial and Muscular tissue. (10)
2. List the factors involved in clotting. Explain the mechanism of clotting. (10)
3. Define cardiac cycle. Explain in detail about the events in cardiac cycle. (10)
4. Draw a neat labelled diagram of longitudinal section of Kidney. Add a note on formation of urine. (10)
15. List the hormones secreted by Adrenal cortex and write about their functions. Add a note on Renin Angiotensin aldosterone system. (10)
16. Explain Anatomy and physiology of cerebellum. (10)
- 17.(a) Describe the structure of Skin. (5)
(b) Explain the physiology of olfaction. (5)
- 18.(a) Discuss the anatomy of Stomach. (5)
(b) Write about digestion of Fats. (5)

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FACULTY OF PHARMACY

Pharm. D. I Year (Main) Examination, Aug / Sept 2013

Subject: Pharmaceutics

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 prescription. 2
2. Differentiate between lotion and liniment. 2
3. What are Collodions? 2
4. Mention different preservatives used in Tooth Powder. 2
5. Write the different fields in pharmaceutical industry where pharmacists can be employed. 2
6. Calculate the amount of 90% alcohol required to prepare 300 ml of 60% alcohol. 2
7. Write about Absorbable gelatin sponge. 2
8. Adult dose of a drug is 50 mg. Age of child is 8 years. Calculate dose for that child. 2
9. Calculate the quantity of sodium chloride required to prepare 500 ml of 1.8 in 200 solution. 2
10. Define maceration. 2

PART – B (50 Marks)

- 11.(a) Explain parts of prescription with typical example. 5
- (b) Describe the procedure adopted by pharmacist while handling prescription. 5
12. Explain different factors influencing selection of dose. 10
- 13.(a) How much volume of 4% solution of a drug required to prepare 800 ml of 1 in 200 solution? 5
- (b) Find the concentration of sodium chloride required to make isotonic solution containing 1% of cocaine HCl. (F.P. of 1% w/v cocaine HCl is -0.09°C . F.P. of 1% w/v solution of sodium chloride is -0.576°C). 5
- 14.(a) Differentiate between suspension and emulsion. 4
- (b) Describe different methods to evaluate stability of suspension. 6
15. Explain the reasons for instability of emulsions and mention the remedies to minimize them. 10
16. Mention different chemical incompatibilities and explain the methods to overcome them. 10
17. Explain different ingredients present in effervescent granules and preparation of effervescent granules. 10
18. Explain different parts of a percolator with help of diagram and describe methodology of percolation. 10

FACULTY OF PHARMACY
Pharma. D. I Year (Main) Examination, Aug / Sept 2013

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 (10x2 = 20 Marks)

Write a note on:

1. Cell and its biochemical organization
2. ✓ Energy Rich Compounds
3. ✓ Hypercholesterimia
4. ✓ Uncouplers
5. ✗ Genetic code
6. ✓ HDL and LDL
7. Urinary tract calculi
8. ✓ Semiconservative DNA replication
9. ✓ Role of Clinical Chemistry Laboratory
10. ✓ Physiological role of liver.

PART – B (5x10 = 50 Marks)

11. Differentiate between passive and active transport process.
12. Describe various factors effecting enzyme activity. Comment on enzyme inhibition.
13. Outline the hormonal regulation of carbohydrate metabolism.
14. Write about metabolic diseases associated with defective nucleic acid metabolism.
15. Write about protein synthesis.
16. Describe the principle and diagnostic applications of RIA.
17. Write about electrolyte composition of body fluids. Comment on its diagnostic applications.
18. Discuss liver function tests.

FACULTY OF PHARMACY

Pharm D. I – Year (Main) Examination, August / September 2013

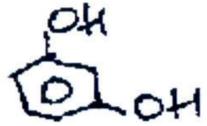
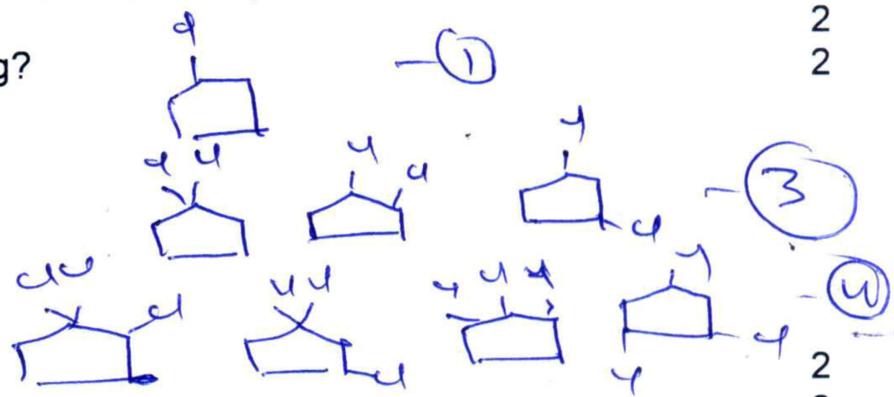
Subject : Pharmaceutical Organic Chemistry

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. What are enantiomers? 2
2. Write the IUPAC names of the following? 2
(i)  (ii) $C_6H_5-CH-CH_2-NH_2$

3. What are free radicals? 2
4. Explain Bayer's strain theory. 2
5. Outline any one method of preparation of cyclobutane. 2
6. Why phenols are weakly acidic than carboxylic acids? 2
7. Write the structure and uses of methyl salicylate. 2
8. Explain the mechanism of nucleophilic aromatic substitution. 2
9. Define electrophile. Give an example. 2
10. How many mono, di and trichloro derivatives are possible for cyclopentane? 2

PART – B (5 x 10 = 50 Marks)

11. Explain the mechanism and stereochemistry involved in SN^2 reaction. 10
12. Write any four methods for the preparation of alkanes. 10
13. Explain the Aldol condensation and Michael addition. 10
14. Explain the reactivity and orientation in nucleophilic aromatic substitution with example. 10
15. Write a method of preparation, test for purity and assay of the following : 10
i) Aspirin ii) Mephenesin
16. Write the structure and names of the principal organic products expected from each of the following reactions. 10
i) P-Chloro toluene + Hot $KMnO_4$ ii) m-Bromo styrene + Br_2/CCl_4
iii) P-Bromobenzylbromide + $NH_3(Aq)$ iv) P-Bromobenzyl alcohol + con. HBr
17. Write the mechanism involved in the following reactions. 10
i) Fries rearrangement ii) Reimer-Tieman reaction
18. a) Explain the mechanism of Friedal-crafts acylation with examples. 5
b) Write any three methods for the preparation of carboxylic acids. 5

FACULTY OF PHARMACY

Pharm-D. I-Year (Main) Examination, Aug / Sept 2013

Subject : Pharmaceutical Inorganic Chemistry

Time : 3 Hours

Max. Marks: 70

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

Section – A (10x2=20 Marks)

1. Distinguish between iodimetry and iodometry. (2)
2. What are the different types of acidifiers? What are their uses? (2)
3. What is an impurity? How inorganic impurities are reduced in pharmaceutical preparations? (2)
4. Write the physiological role of iron in the body. (2)
5. Define (i) Common ion effect (ii) Law of mass action (2)
6. What are the different methods of analysis? (2)
7. Write the ideal properties of antacids. (2)
8. Write about electrolyte replenishes. (2)
9. What are anti-caries agents? Give some examples. (2)
10. Write the uses of hydrogen peroxide. (2)

Section – B (50 Marks)

11. What are the different methods for expressing concentrations of solutions? (10)
12. Define Limit test. Write about the principle and procedure involved in the limit test for Arsenic with neat diagram. (10)
13. Define antidote. Write the method of preparation, uses and its mechanism of sodium nitrite and sodium thiosulphate in cyanide poisoning. (10)
14. Write the preparation, properties, assay and uses of sodium chloride in Replacement therapy. (10)
15. (a) Discuss about the neutralization curves. (5)
(b) Describe briefly about the choice of indicators. (5)
16. Write the method of preparation, properties, storage and uses of oxygen and carbon dioxide. (10)
17. What are the essential trace elements? Write the physiological role of iodine and copper. (10)
18. (a) Write the clinical applications of Radiopharmaceuticals. (5)
(b) Write about pharmaceutical aids. (5)

FACULTY OF PHARMACY

Pharm-D. I -Year (Main) Examination, August / September 2013

Subject : Remedial Mathematics

Time : 3 Hours

Max. Marks: 70

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

Section – A (10x2=20 Marks)

1. If determinant of an matrix $\begin{vmatrix} 1 & 0 & 0 \\ 2 & 3 & 4 \\ 5 & -6 & x \end{vmatrix} = 45$. Find the value of x.
2. Find the product $[xy] \begin{vmatrix} a & h \\ h & b \end{vmatrix} \begin{vmatrix} x \\ y \end{vmatrix}$.
3. If $2\sin\theta = 2 - \cos\theta$, find the values of $\sin\theta$.
4. Find the equation to the locus of points which are equivalent from the points (-2, 3), (3, 5).
5. Find the eccentricity of the parabola $x^2 = 4y$.
6. Find the integral of $\int \frac{x^2}{1+x^3} dx$.
7. Find the order and degree from the differential equation $\left[1 + \left(\frac{dy}{dx}\right)^2\right]^{3/2} = \frac{d^2y}{dx^2}$.
8. Solve $(D^2 - 2D + 1)y = 0$.
9. If $L[e^{2t}] = \frac{1}{s-2}$ then find $L[t e^{2t}]$.
10. If $u = \log(x^2 + y^2)$ then show that $x \frac{\partial u}{\partial x} + y \frac{\partial u}{\partial y} = 2$.

Section – B (5x10=50 Marks)

11. (a) If $A = \begin{bmatrix} 2 & -3 & -5 \\ -1 & 4 & 5 \\ 1 & -3 & -4 \end{bmatrix}$ and $B = \begin{bmatrix} 2 & -2 & -4 \\ -1 & 3 & 4 \\ 1 & -2 & -3 \end{bmatrix}$ verify that $AB=A$ and $BA=B$.
(b) If $A = \begin{bmatrix} 2 \\ 0 \\ 1 \end{bmatrix}$ and $B = (4, -2, 5)$, $C = \begin{bmatrix} 1 \\ 0 \\ 1 \end{bmatrix}$ write the order of ABC matrix.
12. (a) Prove that $\frac{\cos 3A + \sin 3A}{\cos A - \sin A} = 1 + 2\sin 2A$.
(b) If $\tan A = \frac{1 - \cos B}{\sin B}$ then prove that $\tan 2A = \tan B$.
13. (a) Show that $\lim_{x \rightarrow 0} \frac{1 - \cos mx}{1 - \cos nx} = \frac{m^2}{n^2}$.
(b) If $u = f(x + ct) + g(x - ct)$ prove that $\frac{\partial^2 u}{\partial t^2} = c^2 \frac{\partial^2 u}{\partial x^2}$.

..2..

14.(a) Prove $\int f(ax + b)dx = \frac{f(ax + b)}{a}$.

(b) Find $\int_0^a \frac{dx}{1 + \sqrt{x}}$.

15.(a) Solve $(D^2 - 3D + 9)y = e^{2x} + \sin 2x$.

(b) Solve the differential equation $\operatorname{cosec}^2 x \frac{dy}{dx} - \frac{1}{y} = 0$.

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 $e^{2t} + \sin 2t + t^2 + te^t$.

17.(a) Find the equation of the circle whose centre is (4, 5) and which passes through the centre of the circle $x^2 + y^2 + 4x - 6y - 12 = 0$.

(b) Find the equation to the parabola whose focus is (1, -1) and directrix is $3x + 4y + 2 = 0$.

18.(a) If $u = \tan^{-1} \left(\frac{x^3 + y^3}{x + y} \right)$ then prove that $x \frac{\partial u}{\partial x} + y \frac{\partial u}{\partial y} = \sin 2u$.

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