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**B. Pharmacy (First Semester) Examination,
Nov.-Dec. 2020**

(PCI Scheme)

(Pharmacy Branch)

HUMAN ANATOMY and PHYSIOLOGY-I

Time Allowed : Three hours

Maximum Marks : 75

Note : Question paper is of three parts i.e. (A), (B) and (C). Part A consists of 20 MCQs each of 1 mark. All questions are compulsory. Part B consists of 3 long answer questions of which attempt any two. Each of 10 marks. Part C consists of 9 short answer questions, attempt any seven questions. Each of 5 marks.

Part-A

(Objective Type Questions) 20×1=20

Note : Attempt all questions, each carries 1 mark.

1. Multiple Choice Questions (MCQs) :

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- (i) Which of the following is referred to the study of the blood vessels?
- (a) Hematology
 - (b) Serology
 - (c) Angiology
 - (d) Cardiology
- (ii) Which of the following is known as powerhouse of the cell?
- (a) Nucleus
 - (b) Golgi bodies
 - (c) Ribosomes
 - (d) Mitochondria
- (iii) Duplication of the chromosomes occurs in which of the following phase of cell division :
- (a) S phase
 - (b) G1 phase
 - (c) Prophase
 - (d) G2 phase

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- (iv) Which of the following is not the primary germ layer :
- (a) Mesoderm
 - (b) Ectoderm
 - (c) Endoderm
 - (d) Protoderm
- (v) Callus is formed due to abnormal thickening of which of the following :
- (a) Stratum spinosum
 - (b) Stratum granulosum
 - (c) Stratum lucidum
 - (d) Stratum corneum
- (vi) Which is the only movable bone of the skull?
- (a) Frontal bone
 - (b) Mandible
 - (c) Temporal bone
 - (d) Maxilla
- (vii) How many bones are there in the human skeleton?
- (a) 206 bones

- (b) 302 bones
 (c) 211 bones
 (d) 106 bones
- (viii) Peripheral nervous system does not include
- (a) Spinal cord
 (b) Cranial nerves
 (c) Ganglia
 (d) Spinal nerves
- (ix) of the brain regulates posture and balance.
- (a) Cerebrum
 (b) Cerebellum
 (c) Diencephalon
 (d) Midbrain
- (x) The color of eye depends upon the color of the
- (a) Choroid
 (b) Sclera

- (c) Iris
 (d) Cornea
- (xi) All are the parts of an eye except
- (a) Cornea
 (b) Pupils
 (c) Lens
 (d) Stapes
- (xii) Which of the hormone is responsible for the secretion of milk after parturition?
- (a) ICSH
 (b) Prolactin
 (c) ACTH
 (d) LH
- (xiii) "Organ of Corti" is a component of
- (a) Inner ear
 (b) Middle ear
 (c) External ear
 (d) Nasal chamber

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(xiv) Hormone are :

- (a) Enzymes
- (b) Organic chemicals
- (c) Proenzymes
- (d) Inorganic chemicals

(xv) Which gland disappears in the adult but is active during childhood?

- (a) Adrenal cortex
- (b) Hypothalamus
- (c) Thymus
- (d) Parathyroid

(xvi) Which system produces the renin hormone?

- (a) Liver
- (b) Pancrease
- (c) Ovary
- (d) Kidney

(xvii) Which hormone deficiency produces cretinism?

- (a) Growth hormone

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(b) Thyroxine

(c) Parathormone

(d) Oxytocin

(xviii) The function(s) of integumentary system includes :

(a) Excretory

(b) Sensory

(c) Protectives

(d) All of the above

(xix) Colour blindness is caused due to defect in

(a) Rods

(b) Cones

(c) Rhodospin

(d) Rods and Cones

(xx) The 'vertical' plane that divides the body or an organ into right and left sides :

(a) Oblique plane

(b) Frontal plane

(c) Sagittal plane

(d) Transverse plane

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Part-B

(Long Answer Type Questions) 2×10=20

*Note : Attempt any two questions out of 3 questions.
Each question carries 10 marks.*

2. Write structure and function of the skin.
3. Differentiate between the structure and functions of sympathetic and parasympathetic nervous system.
4. Explain the mechanism of the hormone action. Describe the structure and functions of the pituitary gland.

Part-C

(Short Answer Type Questions) 7×5=35

Note : Attempt any seven questions out of nine questions. Each question carries 5 marks.

5. Write notes on the scope of anatomy and physiology.
6. Briefly describe the different form of intracellular signaling.

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7. Write notes on physiology of muscle contraction.
8. Define different types of tissues. What are the functions of connective tissues?
9. Explain different types of joints movements.
10. Draw structure of the eye and elaborate the functions of different parts of the eye.
11. Write notes on special senses.
12. Describe the structure and functions of pancreas.
13. Structure and functions of cerebrum and cerebellum.

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**B. Pharmacy (First Semester) Examination,
Nov.-Dec. 2020**

(PCI Scheme)

(Pharmacy Branch)

PHARMACEUTICAL ANALYSIS-I

Time Allowed : Three hours

Maximum Marks : 75

***Note : Question paper contains three Sections. Read
the instructions of each section carefully.***

Section-A

20×1=20

(Multiple Choice Questions)

***Note : Attempt all questions. Each question carries
1 mark.***

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1. (i) Which one is primary standard :
- (a) NaOH
 - (b) KOH
 - (c) Potassium hydrogen phthalate
 - (d) None
- (ii) Phenolphthalein changes its colour in
- (a) Acids
 - (b) Alkalis
 - (c) Water
 - (d) Salt solutions
- (iii) 5% NaOH solution means :
- (a) 5 g NaOH in 1 L of water
 - (b) 5 g NaOH in 1 kg of water
 - (c) 5 g NaOH in 1000 ml of water
 - (d) 5 g NaOH in 100 ml of solution
- (iv) Which zeros are significant in the number 0.01030 :
- (a) Only the zero at the end is significant

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- (b) Only the zero between the 1 and 3 is significant
 - (c) The zeros between the 1 and 3 and the zero after the 3 is significant
 - (d) All of the zeros are significant
- (v) Glacial acetic acid is an example of :
- (a) Protogenic solvent
 - (b) Protophilic solvent
 - (c) Amphiprotic solvent
 - (d) Aprotic solvent
- (vi) The D and L isomeric forms can be distinguished by :
- (a) Polarimetry
 - (b) Refractometry
 - (c) Potentiometry
 - (d) Conductometry
- (vii) A technique for determining the amount of a certain substance by doing a titration :
- (a) Stationary phase

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- (b) Volumetric analysis
- (c) Empirical formula
- (d) Primary standard
- (viii) Type of quantitative analysis in which the amount of a species in a material is determined by converting the species to a product that can be isolated completely and weighed.
- (a) Paper chromatography
- (b) Volumetric analysis
- (c) Gravimetric analysis
- (d) Equivalence point
- (ix) A laboratory procedure where a measured volume of one solution is added to a known volume of another solution until the reaction is complete :
- (a) Titration
- (b) Titration curve
- (c) Back titration
- (d) Pipette

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- (x) Solvent used in non-aqueous titrations :
- (a) Water
- (b) Alcohol
- (c) Glacial acetic acid
- (d) Mixture of acetic acid and water
- (xi) Which one of the following is strong acid :
- (a) Acetic acid
- (b) Hydrochloric acid
- (c) Carbonic acid
- (d) Citric acid
- (xii) Which one is aprotic solvent?
- (a) Chloroform
- (b) Benzene
- (c) Both
- (d) None
- (xiii) Which one is used as indicator for non-aqueous titration?
- (a) Crystal violet

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- (b) Thymol blue
 - (c) Oracet blue B
 - (d) All of the above
- (xiv) Which of the following is added for the titration of halogen acid salt of weak bases?
- (a) Lead acetate
 - (b) Mercuric acetate
 - (c) Bismuth iodide
 - (d) Copper sulphide
- (xv) Which of the following steps is involved in gravimetric analysis :
- (a) Titrimetry
 - (b) Precipitation
 - (c) Non-aqueous titrations
 - (d) Complexometry
- (xvi) The point during a titration when the number of H^+ ions and OH^- ions are equal. This is at the middle of the steepest part of the titration curve :

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- (a) Stationary phase
 - (b) Empirical formula
 - (c) Gravimetric analysis
 - (d) Equivalence point
- (xvii) What is the best method for determining the concentration of a NaOH solution :
- (a) Titrate the solution with acetic acid until a red/clear endpoint is detected
 - (b) Standardize with potassium hydrogen phthalate
 - (c) Check the pH with litmus paper
 - (d) Measure the pH of the solution with a calibrated pH electrode
- (xviii) Process in which substance gains electrons is called :
- (a) Oxidation
 - (b) Hydrogenation
 - (c) Sublimation
 - (d) Reduction

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- (xix) Polarography is a :
- Chemical method of analysis
 - Electrochemical method of analysis
 - Chromatographic method of analysis
 - None of the above
- (xx) Which of the following is a oxidizing agent?
- Potassium iodide
 - Potassium iodate
 - Iodide ion
 - None of the above

Section-B $2 \times 10 = 20$

(Long Answer Types Questions)

Note : Attempt any two questions. Each question carries 10 marks.

2. Write a brief note on redox titration, with principle and application of titrations involving iodine.

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3. Explain various theories of indicators, with suitable examples.
4. Discuss about gravimetric analysis, along with the principle and steps involved in it.

Section-C

$7 \times 5 = 35$

(Short Answer Types Questions)

Note : Attempt any seven questions. Each question carries 5 marks.

5. Write about the sources of error and its types.
6. Explain various methods involved in precipitation titration.
7. Illustrate the process of estimation of calcium gluconate.
8. Illustrate reference and indicator electrodes.
9. Define neutralization curve and draw the curves involved in various acid base titrations with examples.
10. Write a descriptive note on methods of expressing concentrations.

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11. Give principle and application of conductometric titrations.
12. Describe diazotisation titration and give its application.
13. Give principle and explain working of dropping mercury electrode.

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**B. Pharmacy (First Semester) Examination,
Nov.-Dec. 2020**

(PCI Scheme)

(Pharmacy Branch)

PHARMACEUTICS-I

Time Allowed : Three hours

Maximum Marks : 75

***Note : Answer all questions from Section-‘A’.
Attempt any two questions from Section-‘B’
and seven questions from Section ‘C’.***

Section-‘A’

(Multiple Choice Questions) 20×1=20

***Note : Attempt all questions. Each question carries
1 mark.***

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1. Choose the correct answer :

(i) Posology is branch of science deals with :

- (a) Dose of drugs
- (b) Quantity of drugs
- (c) Both dose and quantity of drugs
- (d) None of above

(ii) Written below which is the main body of prescription?

- (a) Superscription
- (b) Subscription
- (c) Inscription
- (d) Signatura

(iii) Elixirs are :

- (a) Alcoholic preparation
- (b) Hydro alcoholic preparation
- (c) Aqueous preparation
- (d) Non-Alcoholic preparation

(iv) Physical incompatibility occurs due to :

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(a) Immiscibility

(b) Insolubility

(c) Precipitation

(d) All of above

(v) Proof spirit defined as a mixture of :

- (a) Absolute alcohol and water
- (b) Absolute alcohol and acetone
- (c) Absolute alcohol and chloroform
- (d) None of above

(vi) Theobroma oil come under which type?

- (a) Emulsifying bases
- (b) Water soluble bases
- (c) Fatty bases
- (d) All of above

(vii) Lozenges come under which dosage form?

- (a) Solid dosage form
- (b) Liquid dosage form
- (c) Semi solid dosage form
- (d) All of above

- (viii) Liniments are introduced into:
- Rectum
 - Ear
 - Vagina
 - Skin
- (ix) Particle exist as a separate entity in :
- Flocculated suspension
 - Emulsion
 - Deflocculated suspension
 - Lotion
- (x) Lotion are applied externally
- With friction
 - Without friction
 - Both (a) and (b)
 - None of above
- (xi) Written below which one not come under ointment preparation method?

- Trituration method
 - Fusion method
 - Compression method
 - Emulsification method
- (xii) Among below which don't come under solid dosage form?
- Tablet
 - Capsule
 - Gel
 - Powder
- (xiii) Which of the following is not used as Emulsifying agent?
- Acacia
 - Tragacanth
 - Methyl cellulose
 - Starch
- (xiv) All of the following liquids are for external use except :

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- (a) Syrup
 - (b) Lotion
 - (c) Gargles
 - (d) Liniment
- (xv) Techniques of increasing Solubilisation :
- (a) Cosolvency
 - (b) Micronization
 - (c) Surface active agent
 - (d) All of above
- (xvi) Dry Gum method is manufacturing method for :
- (a) Ointment
 - (b) Emulsion
 - (c) Suspension
 - (d) Suppositories
- (xvii) Efflorescent powders means :
- (a) Lose water to atmosphere
 - (b) Gain water from atmosphere

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- (c) Both (a) and (b)
 - (d) None of the above
- (xviii) Simple syrup IP contain :
- (a) 66.7% w/w
 - (b) 70% w/w
 - (c) 62% w/w
 - (d) 55% w/w
- (xix) Pharmacopela is a :
- (a) Journal
 - (b) Magazine
 - (c) Paper
 - (d) Book
- (xx) Creams are viscous semisolids usually :
- (a) Solution
 - (b) Emulsion
 - (c) Suspension
 - (d) All of above

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Section-'B'

(Long Answer Type Questions) 2×10=20

Note : Answer any two questions. Each question carries 10 marks.

2. Define Prescription. Discuss various parts of prescription. Discuss about source of error found in Prescription.
3. Define Emulsion. Write about identification test for Emulsion. What are the different instability found in emulsion?
4. Define Dosage form, explain various Dosage form with suitable examples.

Section-'C'

(Short Answer Type Questions) 7×5=35

Note : Answer any seven questions. Each question carries 5 marks.

5. Discuss briefly about Pharmacy as a career.

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6. Distinguish between Flocculated suspension and Non-flocculated suspension.
7. Write in brief about History of Indian Pharmacopeia with its salient features.
8. Discuss about Physical Incompatibility with examples.
9. Define the Powder. Discuss different methods of Mixing of powder.
10. Define Posology. Write about any five factor affecting Posology.
11. Describe various factor affecting the dermal penetration of Drugs.
12. Write short notes on calculation by alligation method.
13. Define Suppositories. Write about advantage and disadvantage of Suppositories.

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**B. Pharmacy (First Semester) Examination,
Nov.-Dec. 2020
(PCI Scheme)**

(Branch : Pharmacy)

PHARMACEUTICAL INORGANIC CHEMISTRY

Time Allowed : Three hours

Maximum Marks : 75

***Note : Attempt specified number of questions
from each section.***

Section-A

(Multiple Choice Questions) 20×1=20

1. Attempt all questions :

- (i) Which of the reagent used in limit test of sulphate :
- (a) Silver nitrate
 - (b) Barium chloride
 - (c) Thioglycolic acid

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- (d) None of the above
- (ii) Limit test is performed to find the
- (a) Type of compound
 - (b) Type of reaction
 - (c) Type of reaction condition
 - (d) Impurity
- (iii) How we can determine the pH?
- (a) By potentiometer
 - (b) By amperometer
 - (c) By conductometer
 - (d) None of the above
- (iv) Which of the following pair is a conjugate acid-base pair?
- (a) CH_3COOH and OH^-
 - (b) HCN and OH^-
 - (c) HCl and OH^-
 - (d) HCN and CN^-
- (v) Strong ammonium hydroxide is prepared by

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- (a) Solvay process
 - (b) Merck process
 - (c) Haber's process
 - (d) Ammonia soda process
- (vi) Blood plasma belongs to
- (a) Intracellular fluid
 - (b) Extracellular fluid
 - (c) Intorstitial fluid
 - (d) (b) and (c) both
- (vii) Which of the following ions diffusion easily between extracellular and intra cellular compartments?
- (a) Chlorine
 - (b) Magnesium
 - (c) Potassium
 - (d) Sodium
- (viii) Lost of water occurs through :
- (a) Lungs
 - (b) Skin

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- (c) GIT
- (d) All of the above
- (ix) Which of the following used as desensitizers?
- (a) Sodium fluoride
- (b) Calcium carbonate
- (c) Zinc chloride
- (d) Stannous fluoride
- (x) Ammonium chloride can be used as :
- (a) Antacid
- (b) Cathartics
- (c) Acidifiers
- (d) Emetic
- (xi) The condition of insufficient acidity in gastric secretion is known as :
- (a) Achlorhydria
- (b) Hypochloria
- (c) Akalemia
- (d) None of the above

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- (xii) Which of the following is systemic antacid?
- (a) Aluminium hydroxide
- (b) Calcium chloride
- (c) Sodium bicarbonate
- (d) Aluminium chloride
- (xiii) Heavy kaolin is
- (a) Aluminium silicate
- (b) Aluminium hydroxide
- (c) Aluminium carbonate
- (d) Aluminium chloride
- (xiv) Bismuth subcarbonate is used as
- (a) Cathertics
- (b) Adsorbent
- (c) Antacid
- (d) Emetic
- (xv) Which of the following can be used as cathartic :
- (a) Copper sulphate
- (b) Potassium Iodide

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- (c) Ammonium chloride
- (d) Magnesium sulphate
- (xvi) Chemical formula for Sodium Potassium Tartrate is :
- (a) $C_4H_4KNaO_6 \cdot 4H_2O$
- (b) $C_4H_4KNaO_4 \cdot 2H_2O$
- (c) $C_3H_4KNaO_6$
- (d) $C_4H_4KNaO_5 \cdot H_2O$
- (xvii) Stimulation of chemoreceptor trigger zone causes the :
- (a) Emesis
- (b) Diarrhoea
- (c) Bowel irritation
- (d) Sensitivity
- (xviii) The example of physiological antidote is
- (a) Activated charcoal
- (b) Sodium thiocyanate
- (c) Sodium nitrite
- (d) Copper sulphate

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- (xix) The chemical formula of Alum is
- (a) $KAl(SO_4) \cdot 12H_2O$
- (b) $K_2SO_4 \cdot 12H_2O$
- (c) $K(SO_4)_2 \cdot 12H_2O$
- (d) $KAlSO_4 \cdot 12H_2O$
- (xx) Which is used as common quenching agent?
- (a) Chlorine and bromine
- (b) Methane
- (c) Alcohol
- (d) Argon

Section-B

(Long Answer Type Questions) $2 \times 10 = 20$

Note : Attempt any two questions.

- What is impurity? Explain the principle and procedure for the limit test of sulphate.
- Write the function of different ions present in physiological fluid along with the role of calcium gluconate in

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replacement therapy.

4. What is Antacid? Write the ideal characteristics of antacid. Give the properties and assay method of sodium bicarbonate.

Section-C

(Short Answer Type Questions) 7×5=35

Note : Attempt any seven questions.

5. What is buffer? Write the method of measurement of isotonicity.
6. Write a note on dentifrices.
7. Discuss the role of hydrogen peroxide as antimicrobial agent.
8. Discuss the mechanism of sodium thiosulphate as antidote.
9. Give the assay and uses of ferrous sulphate.

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10. Explain the preparation and role of potash alum as astringents.
11. Write application of radioactive substances.
12. What are the uses of acidifier. Discuss with suitable example.
13. Describe the different sources of impurities.