

**DO NOT WRITE ANYTHING ON YOUR QUESTION PAPER EXCEPT YOUR ROLL NO.
QUESTION PAPER CONTAINING ANYTHING WOULD BE TREATED AS MALPRACTICE
ANSWER THE QUESTION SERIALLY AND CONTINUOUSLY**

Subject: PHARMACEUTICS (Theory)

Full Mark -80

Time -3 hrs

- 1. Long type questions (Answer any six) (5x6)**
- i) Define Q.A. & Q.C. Write briefly about cGMP.
 - ii) Discuss the advantages and disadvantages of plastic as packaging materials.
 - iii) Define drying. Explain details about freeze dryer with neat and clean diagram.
 - iv) Write down the principles, construction, working and application of Ball Mill with labelled diagram.
 - v) Write down different methods used in formulation of parenteral preparations.
 - vi) Define immunity. Write down the details about small pox vaccine.
 - vii) Define suppository. Write about method of preparation of suppository.
- 2. Short type questions (any ten): (10x3)**
- i) Classify the powders according to Indian Pharmacopoeia.
 - ii) Write in brief about phagocytosis.
 - iii) Write down advantages, disadvantages and applications of sterilization by ionizing radiation.
 - iv) Define preservatives. Mention various types of preservatives used in pharmaceutical Preparations.
 - v) Write any three polymers used for film and enteric coated tablets.
 - vi) Write notes on Erythrocytes as a drug carrier.
 - vii) Write & explain Darcy's law
 - viii) Differentiate between calibration and validation.
 - ix) Define lamination problem with its remedy.
 - x) Write details about modified percolation process.
 - xi) Write short note on Sustained release tablets.
- 3. Answer all : (20x1)**
- (A) Answer the followings**
- i) Write down one example of hydrophobic binder.
 - ii) One major difference between disintegration & dissolution.
 - iii) Write down two examples of wetting agent.
 - iv) What is Prodrug?
 - v) Write disadvantages of Glass container.
- (B) Define the followings (In 20 words)**
- | | | | |
|--------------------|------------------|-----------------------|------------------|
| i) Capsule | ii) Co-solvent | iii) Creaming | iv) Exsiccation |
| v) Filter aid | vi) Impact | vii) Lyophilisation | viii) Maceration |
| ix) Mixing | x) Nano emulsion | xi) Poultice | xii) Paste |
| xiii) Sieve number | xiv) Nasal Drop | xv) Vulcanising Agent | |

**DO NOT WRITE ANYTHING ON YOUR QUESTION PAPER EXCEPT YOUR ROLL NO.
QUESTION PAPER CONTAINING ANYTHING WOULD BE TREATED AS MALPRACTICE**

Answer the questions serially and continuously

Subject: PHARMACHEMISTRY (Theory)

Full Mark -80

Time -3 hrs

- 1. Answer any six questions :** (6x5)
- Define and classify anti-malarial agents. Write down the structure, chemical name, and to popular brand names of Chloroquine.
 - Define impurities and describe the various sources of impurity.
 - Define and classify diuretics. Write down the structure, chemical name and popular brand names of Furosemide.
 - Define and classify Antacids. Discuss why the combination of antacids is so popular Now-a-days.
 - Classify Non Steroidal Anti-inflammatory Drugs (NSAIDs) with suitable example. Write the structure, chemical name & popular brand names of IBUPROFEN & ASPIRIN.
 - Classify sympathomimetic agents with examples. Write the structure, chemical name and uses of (a) Dopamine (b) Naphazoline.
 - Define Acid-Base indicators and describe in details about the Indicator theory with suitable examples.
- 2. Answer any ten questions out of eleven:** (10x3)
- Write the Principle involved in Limit test for Arsenic.
 - Distinguish between Accuracy & Precision.
 - Mention the structure, IUPAC name & popular brand name of INH & Ketoconazole.
 - Define Antibiotics. Write the structure, use & popular brand name of Amoxycillin.
 - What do you mean by Anticonvulsants ? Write the structure, use & brand name of Valproic acid.
 - Write down the stage of anaesthesia.
 - Write in brief about preparation & standardization of Potassium Permanganate Solution ?
 - Define Cathartics, mention its examples and attached a small note on Osmotic Purgatives ?
 - Define Sedative & Hypnotics. Mention the chemical structure & chemical name of diazepam and phenobarbital.
 - How raw materials contribute impurities to the finished product. Explain.
 - What are the advantages of BaSO₄ reagent over BaCl₂ in the limit test for sulphate.
- 3. (A) Write down the structure and uses of the following compounds** (1x10)
- | | | | |
|-------------------|-----------------|------------------|----------------------|
| i) Paracetamol | ii) Pheniramine | iii) Haloperidol | iv) Dapsone |
| v) Acyclovir | vi) Phenytoin | vii) Propranolol | viii) Chlorpromazine |
| ix) Glibenclamide | x) Metformin | | |
- (B) Define the following (within twenty words) :** (1x10)
- | | | | |
|----------------------|----------------------|--------------------|----------------------|
| i) Self indicator | ii) Quality control | iii) Hemosiderosis | iv) Aprotic solvent |
| v) Laxative | vi) Dental fluorosis | vii) Reductant | viii) Fajan's method |
| ix) Complexing agent | x) Antidepressant | | |

DO NOT WRITE ANYTHING ON YOUR QUESTION PAPER EXCEPT YOUR ROLL NO.
QUESTION PAPER CONTAINING ANYTHING WOULD BE TREATED AS MALPRACTICE

Answer the questions serially and continuously

Subject: PHARMACOGNOSY (Theory)

Full Mark -80

Time -3 hrs.

1. **Long Answer type question (Answer any six)** (6x5)
- Define the term Herbal cosmetic. Write biological source, chemical constituent, commercial preparation & cosmetic uses of Chandan.
 - Discuss about the role of medicinal & aromatic plants in national economy & their export potential.
 - Write down the methods of preparation of asava formulation.
 - Define the term Nutraceuticals & classify it. Write note on spirulina.
 - Describe in detail about the pharmacognostic study of wool.
 - Write details about the Phytochemical test used for glycosides and alkaloids.
 - Write a short note on Ergot.
2. **Short answer type questions (answer 10 out of 11)** (10x3)
- Differentiate between pale catechu and black catechu.
 - Write a short note on Umbelliferous fruits.
 - Define stomatal number and stomatal index.
 - Write details on scope of Pharmacognosy.
 - Write the biological source and chemical constituents of Gokhru & Punarnava.
 - What do you mean by refractive index ?
 - Write short notes on Phytosomes.
 - What are prebiotics & probiotics ?
 - Write short notes on Carminative & G.I. regulators.
 - Write down the basic principles of Siddha system of medicine.
 - Write the biological source, chemical constituents & uses of senna.
3. **Write down the biological sources of the following :** (1x20)
- | | | | |
|-----------------|----------------|-----------------|-----------------|
| i) Isapghol | ii) Ipecac | iii) Myrrh | iv) Ashwagandha |
| v) Saffron | vi) Asafoetida | vii) Gum acacia | viii) Vinca |
| ix) Kaolin | x) Silk | xi) Artemisia | xii) Castor oil |
| xiii) Guggul | xiv) Squill | xv) Rauwolfia | xvi) Colchicum |
| xvii) Shatavari | xviii) Papaya | xix) Datura | xx) Arjuna |

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QUESTION PAPER CONTAINING ANYTHING WOULD BE TREATED AS MALPRACTICE
ANSWER THE QUESTIONS SERIALLY AND CONTINUOUSLY**

Subject: HUMAN ANATOMY & PHYSIOLOGY (Theory)

Full Mark -80

Time -3 Hrs.

1. Answer any six out of seven (6x5)
- a) Define endocrine gland. Briefly discuss about the hormone secreted from the pituitary gland.
 - b) Describe the parts of Respiratory system & discuss the mechanism of respiration.
 - c) Define joint. Give the classification of joint with suitable example.
 - d) Classify tissue. Write a note on muscular tissue.
 - e) Describe about Physiology of Vision.
 - f) Describe the process of Urine formation.
 - g) Give a note on Cerebrum.
2. Answer any ten questions : (10x3)
- a) Write a note on Parturition.
 - b) Describe Meninges & Ventricles of brain.
 - c) Describe about ECG & Cardiac output.
 - d) Briefly describe human tooth with suitable diagram.
 - e) Write a note on physiology of pain.
 - f) Write a short note on physiology of smell.
 - g) Write a note on RBC.
 - h) Discuss about different parts of tongue.
 - i) Differentiate between smooth and skeletal muscle.
 - j) Write down functions of antidiuretic hormone (ADH).
 - k) Write down the importance of blood group.
3. Define the following terms :(Within 20 words) (20x1)
- | | | | |
|---------------------|---------------|--------------------|--------------------------|
| a) Tidal volume | b) TSH | c) Angina pectoris | d) Pulmonary circulation |
| e) Pinocytosis | f) Pacemaker | g) Acrosome | h) Facilitated diffusion |
| i) Active transport | j) Synapse | k) Vas deference | l) Endoplasmic reticulum |
| m) Osteomalacia | n) Ptyalin | o) Lysosome | p) Sickle cell anemia |
| q) Golgi bodies | r) Centrosome | s) Pepsin | t) Tympanic membrane |

**DO NOT WRITE ANYTHING ON YOUR QUESTION PAPER EXCEPT YOUR ROLL NO.
QUESTION PAPER CONTAINING ANYTHING WOULD BE TREATED AS MALPRACTICE**

Answer the question serially and continuously

Subject: SOCIAL PHARMACY (Theory)

Full Mark -80

Time -3 Hrs.

1. **Answer any six questions :** (6x5)
- Describe about National AIDS control programme.
 - Give an account of the nutritive & calorific values of various food supplements.
 - Write the organization and function of the Directorate General of Health Services.
 - Discuss about RCH programme and its major interventions in Phase I.
 - Write the sources, functions & deficiency diseases due to fat-soluble vitamins.
 - Describe briefly about causative agent, epidemiology, clinical presentation & prevention of poliomyelitis.
 - Write a detailed note on the role of the pharmacist in Disaster management.
2. **Answer any ten questions :** (3x10)
- Define Pharmacoeconomics & explain its importance.
 - Define the term balanced diet & give an overview of micronutrients.
 - Describe different stages of the demography cycle.
 - Write down the function of the Mid-day meal programme.
 - What are the STDs? Describe its epidemiological factors.
 - What is the vaccine? Classify it.
 - Write down the causative agent, modes of transmission & clinical presentation of tuberculosis.
 - Define Nutraceuticals along with their benefits.
 - Write the functions of community health centres (CHCs).
 - Write a note on the Fortification of food.
 - Define the social impact of drug abuse like alcohol and tobacco.
3. **Answer the following:** (20x1)
- | | | | |
|---------------------|--------------------|-------------------------|--------------------|
| a) Virulence | b) Food | c) Antenatal advice | d) Cold chain |
| e) Red ribbon | f) Spore | g) Surveillance | h) Sludge |
| i) Humoral immunity | j) FSSAI | k) Swine flu | l) Noise pollution |
| m) Marasmus | n) Colostrum | o) e-cigarettes | p) Macronutrients |
| q) Crude death rate | r) Water pollution | s) Mission Indradhanush | t) Tolerance |

**DO NOT WRITE ANYTHING ON YOUR QUESTION PAPER EXCEPT YOUR ROLL NO.
QUESTION PAPER CONTAINING ANYTHING WOULD BE TREATED AS MAL-PRACTICE
ANSWER THE QUESTIONS SERIALLY AND CONTINUOUSLY**

Subject: BIO-CHEMISTRY & CLINICAL PATHOLOGY (Theory)

Full Mark -80

Time -3 Hrs.

1. **Answer any six questions** **(6x5)**
- a) Describe different Liver function tests performed routinely and their clinical significance to assess the functions of Liver ?
 - b) Define ketogenesis ? Write the reaction involved in the synthesis of ketone bodies through it ?
 - c) What are the abnormal constituents of urine and mention their clinical significances ?
 - d) What do you mean by Glycolysis & write the steps involved in it ?
 - e) What are vitamins & classify it with examples ? Briefly describe the sources, chemical nature, biological functions and deficiency diseases of Vitamin-A & Vitamin-C ?
 - f) Write a note on Beta oxidation of saturated fatty acid ?
 - g) What do you mean by Urea cycle & explain the steps involved in the synthesis of Urea ?
2. **Answer any ten questions :** **(10x3)**
- a) Describe the detail procedure for identification of unknown carbohydrate sample ?
 - b) What are lipoproteins and attach a note on composition & functions of different types of lipoprotein ?
 - c) Write the application of Biotechnology in pharmaceutical sciences ?
 - d) Explain the various components present in ETC ?
 - e) What do you mean by lipid profile test and mention its clinical significances in lipid related diseases ?
 - f) Explain the role of iron and iodine and micronutrients in cell ?
 - g) Write the diseases caused by the phosphorous deficiency ?
 - h) Classify enzymes according to IUB & MB ?
 - i) Describe the salient features of structure of DNA with its functions ?
 - j) Write the role of calcium and potassium in cell ?
 - k) Describe the detail pathway of ornithine cycle and describe in brief about phenylketonuria ?
3. **Define the following terms (within twenty words):** **(1x20)**
- | | | | |
|---|---------------------|----------------------|---------------------|
| i) Mutarotation | ii) Transamination | iii) Zwitter ion | iv) Decarboxylation |
| v) Polenske numbr | vi) Gluconeogenesis | vii) Vitamin-H | viii) Coenzyme |
| ix) Wilson's disease | x) ORT | xi) Anisocytosis | xii) Marasmus |
| xiii) Ochronosis | xiv) EST | xv) Biological value | xvi) Holoenzyme |
| xvii) HMP shunt | xviii) SGOT | xix) Galactosaemia | |
| xx) Idiopathic Thrombocytopenic Purpura . | | | |

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ANSWER THE QUESTION SERIALLY AND CONTINUOUSLY

Subject: PHARMACEUTICS-I (Theory)

Full Mark -80

Time -3 hrs

(Answer any five questions including question No. 1)

1. **(A) Define the followings: (Max 20 words) (1x10)**
 i) Isotonic Solution ii) Slug iii) Mottling iv) Sera v) Sublingual tablet
 vi) Marc vii) Pasteurization viii) Meta filter ix) Capping x) Enemas
- (B) Differentiate between the following : (2 x 5)**
 i) Spray drying & freeze drying ii) Syrup & Elixir
 iii) Antiseptic and disinfectant iv) Dusting power and insufflations
 v) Ointment and Paste
2. Define Capsules & types of Capsules. Discuss construction, working of hand operated capsule filling machine with labelled diagram. (2+1+12)
3. What do mean by drying ? Explain detail about Fluidized Bed dryer with its merits and demerits ? (2+13)
4. **Write notes on : (ANY THREE) (5 x 3)**
 i) Simple Distillation ii) Indian Pharmacopoeia
 iii) Different processes of filling of the Aerosol iv) Soxhlet extraction
5. What do mean by Extraction? What are different processes of extraction? (3+2+10)
 Describe the process of simple percolation used in the preparation of tincture.
6. **Explain in details: (5x3)**
 i) Factors affecting size reduction ii) Manufacturing defect of tablet
 iii) Cyclone Separator
7. Define & classify immunity. Write notes on manufacturing of Toxoids & BCG vaccine. (2+3+5+5)

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Answer the questions serially and continuously

Subject: PHARMACHEMISTRY-I (Theory)

Full Mark -80

Time -3 hrs

(Answer any five questions including question No.1)

1. **(A) Write the chemical formula & uses of the following** **(5x2)**

| | | | |
|--------------------------|----------------------|-----------------|------------------|
| (i) Aluminium Hydroxide | ii) Bleaching Powder | iii) Epsom Salt | iv) Caustic Sode |
| v) Sodium Metabisulphite | | | |

- (B) Define the following terms :** **(5x2)**

| | | | |
|-----------------|------------------|-----------------|-----------------|
| i) Expectorants | ii) Deliquescent | iii) Protective | iv) Antiseptics |
| v) Purgatives | vi) Deodorant | vii) Normality | viii) Acidosis |
| ix) Antioxidant | x) Bactericidal | | |

2. a) What is Oral Rehydration Salt ? Discuss the mechanism involved in acid base balance. **(2+5)**
 b) What are emetics ? Write about their characteristics. Write the preparation, properties **(1+2(2¹/₂x2)** and used of Copper Sulphate & sodium potassium tartrate.

3. a) Write down properties, uses & storage condition of the following compounds: **(3¹/₂x2)**
 i) Hydrogen peroxide ii) Sodium thiosulphate
 b) Write short notes on Anticaries Agent **(4)**
 c) Explain only the principle of limit test for chorides **(4)**

4. a) Define limit test. Write down the principle, procedure & apparatus used in the limit test for heavy metals **(6)**
 b) Enumerate the method of preparation, physical & chemical properties & uses of Iodine. Briefly describe about different preparations of Iodine. **(6+3)**

5. a) Explain Bronsted-Lowry & Arrhenius concept of Acid-Base theory. **(3+3)**
 b) What do you mean by Buffer Solutions & Buffer Capacity & Write a note on application of Buffers in Pharmacy. **(5)**
 c) Describe about tests for purity. **(4)**

6. **Write notes on following compounds (Any three)** **(3x5)**

| | |
|-----------------------|--------------------------|
| i) Ferrous Sulphate | ii) Calcium Gluconate |
| iii) Potassium Iodide | iv) Hypophosphorous acid |

7. a) Defibne and classifuy gastrointestinal agents. Describe each class with suitable examples. **(10)**
 b) Short note on combination of antacids. **(5)**

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Answer the questions serially and continuously

Subject: PHARMACOGNOSY (Theory)

Full Mark -80

Time -3 Hrs.

(Answer any five questions including question No.1)

1. **(A) Write the biological source of the following crude drugs :** **(10x1)**

| | | | | |
|-------------|---------------|-----------------|----------------|--------------------|
| i) Cinnamon | ii) Arjuna | iii) Nut-meg | iv) Castor oil | v) Cannabis |
| vi) Ephedra | vii) Crow-fig | viii) Punarmava | ix) Rhubarb | x) Shark liver oil |

- (B) Write the important uses of following crude drugs :** **(10x1)**

| | | | | |
|-----------|---------------|--------------|------------|----------------|
| i) Guggul | ii) Digitalis | iii) Tulsi | iv) Myrrh | v) Pterocarpus |
| vi) Amla | vii) Vinca | viii) Kaolin | ix) Vasaka | x) Asafoetida |

2. **Answer any Three :** **(3x5)**
 - i) Define fibre. Classify it with suitable examples. Write about the preparation of silk.
 - ii) Lycopodium spore method.
 - iii) Cultivation & collection of rouwolfia.
 - iv) Gross anatomical studies of Nux Vomica.

3. Define alkaloid. Write the biological source, chemical constituents, identification test **(1+2+2+2+8)** along with life cycle of Ergot.

4. Define the term crude drugs, classify it. Discuss the morphological and chemical classification of crude drug. **(1+2+6+6)**

5. **Write note on any three :** **(5x3)**

| | |
|--------------------------|--|
| i) Secondary metabolites | ii) Scope of Pharmacognosy |
| iii) Adulteration | iv) Physical evaluation of crude drug with examples. |

6. **Write notes on any three :** **(5x3)**

| | |
|-------------------------------------|------------------------------------|
| i) Identification test of Alkaloids | ii) Identification test of Tannins |
| iii) Pharmaceutical aids | iv) Perfumes and flavouring agents |

7. **Answer any three of the followings :** **(5x3)**

| | |
|---|--|
| i) Anatomical studies of clove | ii) Surgical dressings |
| iii) Collection & preparation of Papain | iv) Identification & chemical constituents of Starch |

D. Pharm Part - I

E. R. 1991

2023(I) Examination

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Answer the question serially and continuously

Subject: HUMAN ANATOMY & PHYSIOLOGY (Theory)

Full Mark -80

Time -3 hrs.

(Answer any five questions including question No. 1)

1. (A) Define the following terms (Within 20 words)
(1×10)
a) Anaemia b) Deglutition c) Vital capacity d) Synapse
e) Oedema f) ESR g) Suicidal bag h) Spermatogenesis
i) Erythroblastosis fetalis j) Appendicular skeleton

(B) Differentiate between: (2×5)
a) Anterior & posterior b) Mitosis & meiosis c) Heart rate & stroke volume
d) ECG & EEG e) Ventral & dorsal
2. Classify nervous system. Draw a neat labelled diagram of Brain (L.S). Write briefly function of different parts of brain. (3+4+8)
3. Define and classify joints. Write different movement of joint. Briefly discuss about Synovial joint. (3+5+7)
4. Enumerate different parts of female genital organ with neat labelled diagram. Write in details about the menstrual cycle. (5+5+5)
5. Define Blood. Write the composition & function of blood. Discuss in detail about the clotting factors present in blood. (2+5+8)
6. Describe about different chambers of Heart. How blood circulation takes place within it. Define Cardiac output. (5+8+2)
7. Write short note on any three of the followings: (5×3)
a) Stomach b) Pituitary Gland
c) Pancreas d) Spleen

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QUESTION PAPER CONTAINING ANYTHING WOULD BE TREATED AS MALPRACTICE**

Answer the questions serially and continuously

Subject: BIO-CHEMISTRY & CLINICAL PATHOLOGY (Theory)

Full Mark -80

Time -3 Hrs.

(Answer any five questions including question No. 1)

1. **Define the following terms:** **(1x20)**

| | | | |
|------------------|----------------|--------------------|------------------------------|
| a) Apo enzyme | b) Haematuria | c) Lipoprotein | d) Glycogenesis |
| e) Holo Enzyme | f) Glycosuria | g) Leucopenia | h) Polyuria |
| i) Tetany | j) Inhibitors | k) Rancidity | l) Hypervitaminosis D |
| m) Bilirubin | n) Polydipsia | o) Atherosclerosis | p) Positive nitrogen balance |
| q) Lymphocytosis | r) Kwashiorkor | s) Molisch's test | t) Saponification value |

2. a) Write the chemical properties of Fats & Oils. **(5)**
b) Describe the beta-oxidation of fatty acids. **(5)**
c) Write a note on diseases due to disorders of fat metabolism. **(5)**

3. What is Normal & Abnormal constituents of urine? Enumerate the abnormal constituents of urine with clinical significance? **(10+5)**

4. a) Define and classify enzymes and briefly mention the different diagnostic application of enzymes. **(2+4+4)**
b) Write a short note on factors affecting enzyme action. **(5)**

5. Define Glycolysis & describe the steps involved in Embden Meyerhof Pathway with its energy calculation. **(1+9+5)**

6. a) What is a lymphocyte? Describe the difference between T& B Lymphocytes. What is the role of Blood platelets in health & diseases? **(1+4+5)**
b) Short note on Sickle Cell Anaemia **(5)**

7. Describe the role of minerals (any five) in our life process. **(5x3)**

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ANSWER THE QUESTIONS SERIALY AND CONTINUOUSLY**

Subject: PHARMACOTHERAPEUTICS (Theory)

Full Mark -80

Time -3 Hrs.

- 1. Long answer type question (answer any 6):** **(6x5)**
- i) Define & Classify Diabetes Mellitus. Write down the pharmacological management.
 - ii) What's the difference between Angina & Acute myocardial infraction (AMI). Write down the aetiology, clinical manifestations and management of Angina.
 - iii) What is COVID-19? Describe about the Pathogenesis of COVID-19 & its Vaccines?
 - iv) Define Psoriasis. Describe about the etiopathogenesis, management & clinical manifestations of Psoriasis?
 - v) Describe in detail about the pharmacological & non pharmacological management of Hypertension.
 - vi) Describe the pathophysiology& management of Alzheimer disease.
 - vii) Describe the pharmacological management of Glaucoma.
- 2. Short type questions (answer any ten)** **(10x3)**
- i) What is COPD and write down the management of COPD.
 - ii) What is EBM. Briefly explain the steps involved in EBM
 - iii) Write down the scope & objectives of Pharmacotherapeutics.
 - iv) Difference between UNIPOLAR & BIPOLAR disorders.
 - v) Write a brief note on aetiology of Osteoarthritis?
 - vi) What are the clinical manifestation of Tuberculosis?
 - vii) Write the first line drugs for the management of Tuberculosis.
 - viii) Write the difference between PCOS and premenstrual syndrome.
 - ix) Explain aetopathogenesis of HIV infection.
 - x) Clinical Manifestations of UTI & management of UTI.
 - xi) Write down the management of Megaloblastic Anaemia.
- 3. Answer both the sections**
- (A) Answer the followings (Answer all):** **(1x20)**
- i) Difference between extrinsic and intrinsic asthma.
 - ii) What is Bipolar Disorder?
 - iii) What is aura?
 - iv) Mention two drugs used for hepatitis B
 - v) What is the aetiology of GERD?
- (B) Define the following terms :(In 20 words)**
- | | | |
|--------------------------|------------------------------|----------------------------|
| i) Status epilepticus | ii) Positive inotropic drugs | iii) Premenstrual syndrome |
| iv) IBD | v) NLEM | vi) Dysmenorrhea |
| vii) Therapeutic Index | viii) Hypothyroidism | ix) Prophylactic Therapy |
| x) Megaloblastic anaemia | xi) Stroke | xii) Hyperlipidaemia |
| xiii) MAOI | xiv) Migraine | xv) Secondary hypertension |

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QUESTION PAPER CONTAINING ANYTHING WOULD BE TREATED AS MAL-PRACTICE
ANSWER THE QUESTIONS SERIALLY AND CONTINUOUSLY**

Subject: PHARMACEUTICAL CHEMISTRY-II (Theory)

Full Mark -80

Time -3 Hrs.

(Answer any five questions including question No. 1)

1. (A) Write the structure of the heterocyclic ring with numbering and suitable examples of drugs for each structure. (1x10)
 i) Benzimidazole ii) Quinoline iii) Acridine iv) Coumarin v) Imidazole
 vi) Xanthine vii) Furan viii) Pyrrole ix) Pyrazole x) Thiophene

 (B) Write the chemical structure and uses of following medicinal agents (2x5)
 i) PAS ii) Aspirin iii) Propranolol iv) Nikethamide v) Procaine
2. A) Define and classify antimalarial agents with suitable examples. (1+4)
 B) Write the structure, chemical name, uses and popular brand name of Chloroquine and Pyrimethamine. (2x5)
3. What do you mean by Sulphonamides ? Classify them giving suitable examples. {2+4+(3x3)}
 Mention chemical structure, chemical name and uses of the following drugs.
 i) Sulfadiazine ii) Sulfacetamide iii) Sulphamethoxazole
4. Define the term Histamine & Antihistamine ? Classify them with examples. {2+4+(3x3)}
 Write the structure, nomenclature, uses & popular brand names of :
 i) Diphenhydramine ii: Pheniramine
5. What do you mean by anticholinergic drugs ? Classify with suitable examples. {1+2+(4x3)}
 Write the structure, nomenclature, popular brand names and uses of the following :
 i) Atropine ii) Propantheline iii) Biperiden
6. What are antibiotics ? Classify β -lactam antibiotics with suitable examples. {1+2+(4x3)}
 Write the structure, nomenclature, popular brand names & uses of :
 i) Benzyl penicillin ii) Phenoxymethyl penicillin iii) Amoxycillin
7. Write short notes on the followings (any three) : (3x5)
 i) Anti neoplastic drugs ii) Cardiac glycosides
 iii) Sedatives & hypnotics iv) Antithyroid agents

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QUESTION PAPER CONTAINING ANYTHING WOULD BE TREATED AS MALPRACTICE
ANSWER THE QUESTIONS SERIALLY AND CONTINUOUSLY**

Subject: PHARMACOLOGY (Theory)

Full Mark - 80

Time - 3 Hrs.

1. Answer any six of the following: (6x5)
- a) Define biotransformation. Explain the different steps involved in Phase-I reaction.
 - b) Define & classify opioid analgesic. Write the pharmacological action of morphine.
 - c) Define arrhythmia. Classify anti-arrhythmic drugs. Write the mechanism of action, adverse effect & uses of quinidine.
 - d) Write the transducer mechanism of GPCRs.
 - e) Give a note on the pharmacology of para sympatholytic agents.
 - f) Give the classification & pharmacology of the antianxiety drug.
 - g) Write a short note on Histamine.
2. Answer any ten questions: (10x3)
- a) Give a note on Nootropic agents.
 - b) Give the classification of anti-viral drugs. Write the mode of action of the anti-herpes drugs.
 - c) How β -sympathomimetics drugs act as a bronchodilator?
 - d) Define and classify antiemetic drugs.
 - e) Why synthetic Estrogen is produced and how it works?
 - f) Write mechanism action, adverse effect, and uses of proton pump inhibitor.
 - g) Write the classification of antiepileptic drugs & write the mechanism action of phenytoin.
 - h) Classify aminoglycoside antibiotics & their therapeutic uses.
 - i) Write mechanism action of digitalis.
 - j) Write about the pharmacological action of atropine.
 - k) Define Gout. Classify anti-gout drugs. Write the mechanism action of Allopurinol.
3. Define the following terms: (1x20)
- | | | | |
|----------------------|---------------|---------------------|--------------------------|
| a) Drug resistance | b) Receptor | c) Tachyphylaxis | d) Cumulative effect |
| e) Agonist | f) SERMs | g) Bioavailability | h) Acquired tolerance |
| i) Myasthenia gravis | j) Drug abuse | k) Cardiotoxic | l) First pass metabolism |
| m) Storage depots | n) Glaucoma | o) Teratogenicity | p) Anti-metabolites |
| q) Idiosyncrasy | r) Inunction | s) Drug interaction | t) Therapeutic index |

DO NOT WRITE ANYTHING ON YOUR QUESTION PAPER EXCEPT YOUR ROLL NO.
QUESTION PAPER CONTAINING ANYTHING WOULD BE TREATED AS MALPRACTICE
 ANSWER THE QUESTIONS SERIALY AND CONTINUOUSLY

Subject: PHARMACEUTICAL JURISPRUDENCE (Theory)

Full Mark -80

Time -3 Hrs.

(Answer any five questions including question No. 1)

1. **(A) Define the following (Within 20 words):** **(20x1)**

| | | | |
|----------------------|---------------------|-----------------------|------------------------|
| i) Poppy Straw | ii) Landed Cost | iii) Schedule-M | iv) Misbranded drugs |
| v) NPPA | vi) Bulk drug | vii) Narcotic drug | viii) Absolute alcohol |
| ix) Hawking of drugs | x) Schedule-X | xi) Illicit traffic | xii) Boded Manufactory |
| xiii) Cosmetics | xiv) Poison | xv) Ceiling price | xvi) Repacking licence |
| xvii) RMP | xviii) Free Reserve | xix) Central register | xx) Coca Derivative |

2. Define ethics? Explain in detail about the code of pharmaceutical ethics that a pharmacist should observe in relation to his profession and trade? **(2+13)**

3. Write the objective of the Pharmacy Act. How PCI is constituted and discuss its various functions in brief. **(5+5+5)**

4. What is Magic Remedies? What are the objectives? How will you differentiate prohibited and exempted advertisements? **(2+5+8)**

5. a) What qualifications would entitle a person to register his/her name in the first and subsequent registration? **(8)**
 b) Write the constitution and function of the State Pharmacy Council. **(7)**

6. Write down the qualifications and duties of: **(8+7)**
 - a) Drugs Inspectors
 - b) Government Analyst

7. **Write a short note on (any three):** **(5x3)**

| | |
|--|--|
| i) Labelling procedures of Ophthalmic Solution | ii) DTAB |
| iii) Termination of pregnancies | iv) Formula for retail price of drug calculation |

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QUESTION PAPER CONTAINING ANYTHING WOULD BE TREATED AS MAL-PRACTICE
ANSWER THE QUESTIONS SERIALY AND CONTINUOUSLY**

Subject: DRUG STORE & BUSINESS MANAGEMENT (Theory)

Full Mark -80

Time -3 Hrs.

(Answer any five questions including question No. 1)

1. **Define the followings:** **(1x20)**

| | | | |
|------------------|--------------------|--------------------|-------------------------|
| a) Safety stock | b) Bincard | c) Accounting | d) Mail order business |
| e) Assets | f) Bad debts | g) Commerce | h) Co-operative society |
| i) Trade credit | j) Industrial Bank | k) Private company | l) ABC analysis |
| m) Lead time | n) Acid test ratio | o) Contra entry | p) Debenture |
| q) Master budget | r) Cash credit | s) Entrepôt | t) Nominal partner |

2. **Write short notes on following questions (any three)** **(3x5)**

| | |
|----------------------------|-----------------------|
| a) Joint stock company | b) Departmental store |
| c) Triple column cash book | d) VED analysis |

3. **What is recruitment? What are the different methods of recruitment of a pharmacist? Write the various steps involved in the selection of person as pharmacist.** **(3+4+8)**

4. **Differentiate between the following (any three)** **(3x5)**

| | |
|---|-------------------------------------|
| a) Journal and ledger | b) Trial balance and balance sheet. |
| c) Profit and loss account and balance sheet. | d) Advertisement & sales promotion. |

5. **Define the term retailer. Explain the general functions which are normally performed by him and the specified function which he performs to render services to wholesaler/producer and consumers.** **(3+12)**

6. **Define the term inventory. What are the various forms in which inventories exist? What are the needs & objectives of an effective inventory management?** **(2+5+8)**

7. **Journalize the following transactions & post them into ledger.** **(15)**
 - a) Mr. A started business with Rs.30,000
 - b) Purchase furniture for cash Rs.7,000
 - c) Cash deposited in bank Rs.5,000
 - d) Sold goods for cash Rs.12,000
 - e) Paid salary & house rent of Rs.5,000 and Rs.500

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QUESTION PAPER CONTAINING ANYTHING WOULD BE TREATED AS MAL-PRACTICE
ANSWER THE QUESTIONS SERIALLY AND CONTINUOUSLY**

Subject: HOSPITAL & CLINICAL PHARMACY (Theory)

Full Mark -80

Time -3 Hrs.

1. **Answer any six questions:** **(6x5)**
- a) Briefly describe the objectives, composition, and functions of the Infection Control Committee.
 - b) Detail notes on the professional responsibilities & and qualifications of a Hospital Pharmacist.
 - c) Discuss the distribution of narcotics and psychotropic substances and storage.
 - d) Briefly discuss about National Accreditation Board for Hospital and Health care providers.
 - e) Define Medication Therapy Management (MTM). Describe its goals, services, and benefits.
 - f) Define Pharmaco-vigilance. Briefly mention the importance of safety monitoring of medicine.
 - g) Define Drug interaction. Write down the mechanism of drug interaction.
2. **Write notes on (any ten) :** **(10x3)**
- a) Aim of good pharmacy practice.
 - b) Different tests associated with cardiac disorder.
 - c) Drug information services.
 - d) Poisoning and general principles of its treatment.
 - e) Various software used in Hospital pharmacy.
 - f) Liver function test.
 - g) Organizational structure of hospital pharmacy.
 - h) Maintenance of different hospital records by computer.
 - i) VED analysis.
 - j) Floor-stock method.
 - k) Different causes of medication errors.
3. **(A) Define the following abbreviations:** **(15x1)**
- | | | | | |
|---------|---------|---------|---------|---------|
| a) CUDD | b) TPN | c) FIFO | d) NSDF | e) TEPP |
| f) EDTA | g) NQAS | h) DIB | i) LASA | j) PTC |
| k) SGOT | l) EHR | m) ICCU | n) GDF | o) PFT |
- (B) Define the following terms :** **(5x1)**
- | | | |
|-------------|---------------------|-------------|
| a) Antidote | b) Bulk compounding | c) Abortion |
| d) Myopathy | e) e-Prescribing | |

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QUESTION PAPER CONTAINING ANYTHING WOULD BE TREATED AS MAL-PRACTICE
ANSWER THE QUESTIONS SERIALLY AND CONTINUOUSLY**

Subject: PHARMACEUTICS - II (Theory)

Full Mark -80

Time -3 Hrs.

(Answer any five questions including question No. 1)

1. **A) Define the following terms in one sentence with maximum 20 words : (20x1)**

| | | | |
|--------------------|--------------------|-----------------|------------------------|
| i) Ointment | ii) Potent drugs | iii) Lotion | iv) Displacement value |
| v) Cachets | vi) Efflorescent | vii) Dentifrice | viii) HEPA |
| ix) Antagonism | x) Pessaries | xi) Pyrogen | xii) Opacifying agent |
| xiii) Idiosyncrasy | xiv) Haemodialysis | xv) Cracking | |

(B) Translate the following latin terms into English :

| | | | | |
|---------------|------------|----------|----------------|---------------|
| i) Anti cibos | ii) Pulvis | iii) SOS | iv) Auristille | v) Cataplasma |
|---------------|------------|----------|----------------|---------------|
2. a) Define Parenteral preparations. Mention the advantages and disadvantages (2+3+7) of Parenteral preparations. Write a note on Leakage test and clarity test for the evaluation of parenteral preparations.
b) Write a note on Creaming of emulsion. (3)
3. Define Prescription, describe the different parts of an ideal prescription with a (2+10+3) neat & labelled diagram.
4. a) Define the term incompatibility. (2+2+11)
b) What are the different types of incompatibilities?
c) Explain in detail about Chemical incompatibilities what occur due to evolution of carbon dioxide.
5. a) Explain the term posology. (2)
b) Discuss various factors that affect the dose of a drug. (6)
c) Write the Young's formula. (4)
d) Calculate the dose for 6 months old infant when the adult dose of a drug is 100mg. (3)
6. a) Define Emulsion (1)
b) What are different types of emulsions? (2)
c) Briefly discuss various methods used for preparation of emulsion (7)
d) Explain about various identification tests for an emulsion (5)
7. **Write short notes on any three (5x3)**
 - a) Antiperspirants
 - b) Depilatories
 - c) Contact lens solution
 - d) Facial Cosmetics

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QUESTION PAPER CONTAINING ANYTHING WOULD BE TREATED AS MALPRACTICE
ANSWER THE QUESTIONS SERIALY AND CONTINUOUSLY

Subject: PHARMACY LAW & ETHICS (Theory)

Full Mark -80

Time -3 Hrs.

1. **Answer any six** **(6x5)**
- a) Write the objectives and salient features of Pharmacy Practice Regulation 2015.
 - b) Discuss briefly about offences & penalties of the NDPS Act 1985.
 - c) Write down the objectives and registration of medical devices.
 - d) Write down the principles of good regulatory practices.
 - e) Write about the registration of clinical establishments.
 - f) What are the requirements for the functioning & operation of a blood bank?
 - g) How does the state disaster management authority get established?
2. **Answer any ten** **(3x10)**
- a) Write a short note on DCC.
 - b) What are the objectives of the Pharmacy Act 1948?
 - c) Distinguish between community pharmacy license & hospital pharmacy license.
 - d) Write a short note on CDL.
 - e) Write down the principles of Bioethics.
 - f) What are the salient features of the Prevention of Cruelty to Animals Act 1960?
 - g) Write down the offenses & penalties for manufacturing of Spurious drugs.
 - h) Write down different steps involved in the manufacturing of dietary supplements.
 - i) What are the prerequisite conditions required for the grant of Repacking license?
 - j) What are the objectives of the D&C Act 1940?
 - k) Differentiate between trademark & patent.
3. **Answer all questions:** **(1x20)**
- | | | | |
|---------------------|-----------------|-----------------|---------------------------|
| i) Biomedical waste | ii) Novel foods | iii) IAEC | iv) Apprentice pharmacist |
| v) SUGAM | vi) ANDA | vii) Schedule-Y | viii) Contract research |
| ix) Bioethics | x) Schedule-F | xi) Lunatic | xii) Controlled substance |
| xiii) Patent | xiv) NDRF | xv) CDSCO | xvi) Cord blood centre |
| xvii) Phooka | xviii) CPCSEA | xix) FSMP | xx) Education regulation |

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QUESTION PAPER CONTAINING ANYTHING WOULD BE TREATED AS MAL-PRACTICE
ANSWER THE QUESTIONS SERIALLY AND CONTINUOUSLY**

Subject: PHARMACOLOGY & TOXICOLOGY (Theory)

Full Mark - 80

Time - 3 Hrs.

(Answer any five questions including question No. 1)

1. Define the following terms: (Within 20 words) (20x1)

| | | | |
|-----------------------|---------------------------------|----------------------|------------------------|
| i) Agonist | ii) Therapeutic Index | iii) Affinity | iv) Antimetabolite |
| v) Haemolysis | vi) Teratogenic effect | vii) Autacoid | viii) Plasma half-life |
| ix) Super infection | x) Facilitated diffusion | xi) Neuroleptics | xii) Glaucoma |
| xiii) Drug dependence | xiv) Zollinger Ellison Syndrome | xv) Uricosuric agent | xvi) Bioassay |
| xvii) Chemotherapy | xviii) True tolerance | xix) Synergism | xx) Myasthenia gravis |

2. Define & classify Diuretics, describe the mechanism of action, pharmacological actions, adverse effects & uses of Loop diuretics. (2+3+10)

3. Define and classify local anaesthetics. Explain the mechanism of action, pharmacological action, adverse effects and uses of local anaesthetics. (2+3+3+3+2+2)

4. Write short notes on any three: (5x3)

| | | |
|----------------------------------|----------------------------------|------------------------------|
| i) Calcium channel blockers | ii) MAO inhibitors | iii) Oral hypolipemic agents |
| iv) Antitussive and expectorants | v) Stages of general anaesthesia | |

5. a) Classify different routes of drug administration. Write a note on oral & parenteral route with their advantages & disadvantages. (4+6)
 b) Write short notes on the Novel drug delivery system (NDDS). (5)

6. Define and classify antidepressant drugs. Discuss the mechanism of action, pharmacological action, adverse effect of Tricyclic antidepressant. (2+4+3+3+3)

7. Write short notes on any three: (5x3)

| | |
|---|--------------------------------|
| i) Drugs used for Peptic Ulcer Diseases | ii) Antitussive & expectorants |
| iv) Opioid Analgesics | iv) Chloroquine |

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QUESTION PAPER CONTAINING ANYTHING WOULD BE TREATED AS MAL-PRACTICE
ANSWER THE QUESTIONS SERIALLY AND CONTINUOUSLY**

Subject: COMMUNITY PHARMACY & MANAGEMENT (Theory)

Full Mark -80

Time -3 Hrs.

- 1. Long-type questions (answer any six) (6x5)**
- a) Describe the infrastructure requirement of community pharmacy.
 - b) Explain about various methods used for inventory control.
 - c) Define medication adherence. Briefly explain about the strategies to overcome non adherence.
 - d) Write the causes, symptoms and self-care of constipation.
 - e) Write a note on SOPs in Community Pharmacy.
 - f) Define prescription and describe the different parts of prescription.
 - g) Write short notes on counselling points of Asthma patients.
- 2. Answer any ten questions : (10x3)**
- a) What is Label? Explain the importance of labelling of dispensed medication.
 - b) Give a short note on patient counselling points in tuberculosis.
 - c) Write a note on Body languages.
 - d) Write role of the pharmacist in promoting safe practices during self-medication.
 - e) Write down briefly about patient information leaflets.
 - f) Explain about pulmonary function test.
 - g) Write note on patient package inserts ?
 - h) Write detailed notes on causes and self-care of fever.
 - i) Write details about the Ancillary label.
 - j) Explain the procedure for conducting an audit.
 - k) Write down the documents required to open a retail drug house.
- 3. Objective type questions (answer all twenty) (1x20)**
- a) What do you mean by pharmaceutical pictogram?
 - b) Name various software available for pharmacy management.
 - c) Enlist the objective of patient counselling.
 - d) Write the formula for the medication possession ratio (MPR)
 - e) Write the formula of BMI.
 - f) What do you mean by HAM-D scale? Write its scoring value
 - g) What is online pharmacy?
 - h) Write down any three roles of CRM.
 - i) What are the features of the layout of a drug store?
 - j) Define the RPG test.
 - k) Define encoding.
 - l) What is a Drug?
 - m) What is a prescription?
 - n) Define the terms PPI & PIL.
 - o) What is OTC medication?
 - p) What is Mobile Health?
 - q) Define the term verbal communication.
 - r) What are Health Accessories?
 - s) Define Signatura?
 - t) Define Hypertension diseases.

DO NOT WRITE ANYTHING ON YOUR QUESTION PAPER EXCEPT YOUR ROLL NO.
QUESTION PAPER CONTAINING ANYTHING WOULD BE TREATED AS MALPRACTICE

Answer the questions serially and continuously

Subject: HEALTH EDUCATION & COMMUNITY PHARMACY (Theory)

Full Mark -80

Time -3 Hrs.

(Answer any five questions including question No. 1)

1. **Define the following terms :** **(1x20)**

| | | |
|-----------------------|---------------------------------|------------------------------|
| i) Safe period | ii) Universal antidote | iii) Nosocomial Infection |
| iv) Three D'S disease | v) First aid | vi) NIDDM |
| vii) Chlorine demand | viii) Hypertension | ix) Sewage |
| x) Sanitary well | xi) H.I.V. | xii) Epidemic |
| xiii) Prokaryotic | xiv) Disinfection | xv) Demography |
| xvi) Rodenticides | xvii) Fracture | xviii) Communicable diseases |
| xix) NMEP | xx) Acute myocardial infarction | |
2. **Define and classify Vitamins. Write the source, deficiency, and requirement of any two vitamins from each group?** **(2+3+10)**
3. a) **What do mean by family planning and write the objectives and importance of it ?** **(1+6)**
 b) **Briefly discuss the population problem in India.** **(1+2+5)**
4. a) **Briefly describe the process of disposing of solid waste.** **(6)**
 b) **Explain in detail the sources, requirements, functions, and deficiency diseases of calcium, iodine, and Iron.** **(3x3)**
5. **What do you mean by determinants of Health?** **(3+12)**
Explain various determinants.
6. **Define Immunity and classify and explain various immunological preparations.** **(2+6+7)**
7. **Differentiate between the following (any three)** **(5x3)**
 - a) Communicable & Non-communicable diseases
 - b) Case-control study and cohort study
 - c) Physical contraceptive method and chemical contraceptive method
 - d) Bacteria and Virus
