

Manmohan Technical University
Service Commission

**Curriculum of Open Competitive Examination
For the Post of Assistant Instructor [5th Level]**

Description of the Post:

| | | |
|------------------------|----------------------------|---------------------|
| Service: Teaching | Group: Pharmacy | Sub group: Pharmacy |
| Level: 5 th | Post: Assistant Instructor | |

Framework of the Curriculum

The examinations will be conducted in three phases:

| | |
|---|-------------------------|
| (a) First Phase: Written Exam | Full Marks: 150 |
| (b) Second Phase: Practical Examination | Full Marks: 30 |
| (c) Third Phase: - Interview | Full Marks: 25 |
| - Documents Evaluation | Full Marks: 45 |
| | Total Marks: 250 |

First Phase: Written Examination Scheme:

Full Mark: 150

| Paper /subject | Subject Matters | Full Marks | Pass Marks | Examination System | Number of Questions | Time |
|--|--|------------|------------|---|-----------------------|-----------------------|
| First Paper: Legal Provision and Subject Related Contents | Constitution of Nepal, 2072, Education and Health related Acts and Regulations, MTU related Acts and Regulations | 75 | 30 | MCQs | 25 | 75 Minutes |
| | Subject Related Contents | | | MCQs | 50 | |
| Second Paper: Service Related Subject | Service Related contents | 75 | 30 | <ul style="list-style-type: none"> • Short answer type questions • Long answer type questions | 9×5 = 45 3×10 = 30 | 2 Hours 30 Minutes |
| | Total | 150 | | | | |

Second Phase: Practical Examination**Full Marks: 30**

| Subject | Full Marks | Examination System | Remarks |
|----------------|------------|--------------------|---------|
| Job Skill Test | 30 | Practical Works | |
| Total | 30 | | |

Third Phase: Evaluation of Documents and Interview**Full Marks: 70**

| Subject | Full Marks | Examination System | Remarks |
|--|------------|--------------------|---------|
| • Interview | 25 | Oral | |
| • Evaluation of Academic Qualification | 40 | Observation | |
| • Training | 5 | | |
| Total | 70 | | |

पाठ्यक्रमसम्बन्धी सामान्य जानकारी:

१. यो पाठ्यक्रमको योजनालाई प्रथम चरण, द्वितीय चरण र तृतीय चरण गरी तीन भागमा विभाजन गरिएको छ ।
२. लिखित परीक्षाको माध्यम भाषा नेपाली वा अंग्रेजी अथवा नेपाली र अंग्रेजी दुबै हुनेछ ।
३. वस्तुगत बहुवैकल्पिक प्रश्नहरूको गलत उत्तर दिएमा प्रत्येक गलत उत्तरवापत सही उत्तर दिँदा पाउने अंकको २० प्रतिशत अङ्क कट्टा गरिनेछ । तर उत्तर नदिएमा अङ्क कट्टा गरिने छैन ।
४. विषयगत प्रश्नका हकमा तोकिएको अंकका लागि एउटा प्रश्न वा एउटै प्रश्नका दुई वा दुईभन्दा बढी भाग वा दुई वा बढी प्रश्नहरू सोध्न सकिनेछ ।
५. परीक्षामा सोधिने प्रश्नसंख्या, अंक र अङ्कभार सम्बन्धित प्रश्नपत्रमा दिइएअनुसार हुनेछ ।
६. परीक्षार्थीले मोबाइल, प्रोग्रामेवल क्यालकुलेटर, स्मार्टवाच वा यस्तै प्रकारका विद्युतीय उपकरण परीक्षा हलमा लैजान पाइने छैन ।
७. प्रथम चरणको लिखित परीक्षाबाट छनौट भएका उम्मेदवारहरूलाई मात्र द्वितीय चरणको प्रयोगात्मक परीक्षा र तृतीय चरणको अन्तर्वार्तामा सम्मिलित गराइनेछ साथै अन्तिम नतिजाका लागि प्रयोगात्मक परीक्षामा उत्तीर्ण हुन अनिवार्य छ ।
८. प्रथम चरणको लिखित परीक्षामा छनौट भएका उम्मेदवारहरूको प्राप्ताङ्क र द्वितीय चरणको प्रयोगात्मक परीक्षा तथा तृतीय चरणको अन्तर्वार्ताको अंक र शैक्षिक योग्यता तथा तालिमको कूल योगका आधारमा अन्तिम परीक्षाफल प्रकाशित गरिनेछ ।
९. यो पाठ्यक्रम मिति: २०८२/०३/२० देखि लागु हुनेछ ।

Curriculum of Written Examination:

First Paper: Legal Provision and Subject Related Contents

Subject: Pharmacy
Service: Teaching
Group: Pharmacy
Level: 5th
Post: Assistant Instructor

| |
|--------------------------|
| Full Marks: 75 |
| Pass Marks: 30 |
| Time: 1 hours 15 minutes |

- खण्ड (१): सेवासम्बन्धी कानुनी व्यवस्था (बहुवैकल्पिक प्रश्न) २५ × १ = २५
- (क) नेपालको संविधान (भाग १, २, ३, ५ र सम्बन्धित अनुसूचीहरू)
- (ख) औषधी ऐन, २०३५
- (ग) Nepal Pharmacy Council Act, 2057
- (घ) National Health Policy, 2076
- (ङ) मनमोहन प्राविधिक विश्वविद्यालय ऐन, २०७६
- (च) मनमोहन प्राविधिक विश्वविद्यालय शिक्षक तथा कर्मचारी सेवाका सर्त र सुविधासम्बन्धी नियमावली, २०७८
- (छ) मनमोहन प्राविधिक विश्वविद्यालय सेवा आयोगसम्बन्धी नियमावली, २०७८

द्रष्टव्यः माथि उल्लेखित ऐन नियम तथा नीतिहरू संशोधन भएको अवस्थामा सो समेत भन्ने बुझ्नु पर्दछ।

- खण्ड (२): सेवासम्बन्धी विषय (बहुवैकल्पिक प्रश्न) ५० × १ = ५०
- द्वितीय पत्रको सेवासम्बन्धी विषयको पाठ्यक्रम नै पहिलो पत्रको खण्ड “ख” को पाठ्यक्रम हुनेछ।

Sample Multiple Choice Questions (MCQs)

First Paper: Legal Provision and Subject Related Contents

Subject: Pharmacy

| |
|--------------------------|
| Full Marks: 75 |
| Pass Marks: 30 |
| Time: 1 hours 15 minutes |

Encircle (○) the alphabet of the best answer for following questions:

1. The drug that can directly release histamine from mast cells without involving antigen-antibody reaction is:
 - A. Aspirin
 - B. Procaine
 - C. Morphine**
 - D. Sulfadiazine
2. Which one is not medicine distribution system for inpatient?
 - A. Floor stock system
 - B. Patient prescription system
 - C. FEFO system**
 - D. Unit dose system
3. Who is responsible for preparation of hospital formulary?
 - A. Director
 - B. DTC**
 - C. Health ministry
 - D. Department of head
4. Normal serum level of sodium lies between
 - A. 2.5- 4.0 mmol/l
 - B. 3.5- 5.0 mmol/l**
 - C. 4.5-6.0 mmol/l
 - D. 5.5-7.0 mmol/l
5. To compare the safety of one medicine with another medicine it would be necessary to:
 - A. Review the evidence from Phase I clinical trials.
 - B. Review the evidence from Phase II clinical trials.
 - C. Review the evidence from a post marketing clinical trial.**
 - D. Review the number of reports obtained from the yellow card adverse drug reaction reporting scheme
6. Parkinson's disease (PD) is characterized by a nigrostriatal deficiency of:
 - A. Acetylcholine
 - B. Dopamine**
 - C. Norepinephrine
 - D. Serotonin

Curriculum of Open Competitive Examination
Second Paper: Service Related Subject

Subject: Pharmacy
 Service: Teaching
 Group: Pharmacy
 Level: 5th
 Post: Assistant Instructor

Full Marks: 75
 Pass Marks: 30
 Time: 2 hours
 30 minutes

Course Content Area:

| Subject | Paper | Content Area | Weightage | Post |
|---------------------|--------|---|-----------|---|
| Diploma in Pharmacy | Second | 1. Hospital Pharmacy, Community Pharmacy and Clinical Pharmacy [15] | 75 | Assistant Instructor (Level 5 th) |
| | | 2. Pharmacology and Pharmacotherapeutic [20] | | |
| | | 3. Pharmaceutical Pharmacy [20] | | |
| | | 4. Pharmacognosy and Phamaceutical Chemistry [15] | | |
| | | 5. Lab. Instrumental [5] | | |
| | | Full Marks | 75 | |

Course Contents Detail

Unit 1. Hospital Pharmacy, Community Pharmacy and Clinical Pharmacy [15]

1.1 Hospital Pharmacy:

- 1.1.1 Hospital: Definition, Objectives and Functions, Classifications based on various criteria, Organization.
- 1.1.2 Hospital Pharmacy: Definition, functions and objectives, organization, Location, Layout, and flow chart of materials and men, and personnel.
- 1.1.3 Drug and Therapeutic Committee (DTC): Structure and functions of DTC.
- 1.1.4 Hospital Formulary: Definition, Content of formulary, Preparation of formulary.
- 1.1.5 Drug Distribution System and Central Sterile Supply Unit: Outpatient services, inpatient services, discussion of unit dose system, floor/ward stock system, satellite pharmacy system, central sterile services, bedside pharmacy.
- 1.1.6 Drug and poison information services and their sources.

1.2 Clinical Pharmacy:

- 1.2.1 Taking Medication History
- 1.2.2 Adverse Drug Reaction: Definition, Classification and risk factors, Pharmacovigilance, its importance and reporting system of idiosyncratic cases.
- 1.2.3 Definition and classification of drug-drug and drug-food interactions.

1.3 Community Pharmacy:

- 1.3.1 Introduction, and scope of community pharmacy, Roles and responsibilities of Community pharmacist, Barriers to communication, Patient Counseling and Compliance.
- 1.3.2 Basic procedures and First aid: Introduction of first aid and emergency care.

Unit 2: Pharmacology and Pharmacotherapeutic

[20]

2.1 Pharmacology:

- 2.1.1 Introduction and basic terminologies of pharmacology. Nomenclature and sources of drugs, Different types of routes of drug administration with their advantages and disadvantages., Definition of pharmacokinetic and pharmacodynamic. Process of absorption, distribution, metabolism and excretion and various factors influencing them. Principles and mechanisms of drug action., Various factors affecting drug action.
- 2.1.2 General mechanism of action, pharmacological actions, indications, side effects/ADR, contraindications, precautions and dose of following drugs:
 - A. Drugs acting on Autonomic Nervous System:
 - Cholinergic drugs: Pilocarpine, Neostigmine.
 - Anticholinergic drugs: Atropine, Hyoscine,
 - Adrenergic drugs: Adrenaline, Dopamine.
 - Antiadrenergic drugs: Doxazosin, Tamsulosin.
 - B. Gastrointestinal Drugs:
 - Drugs used in Peptic ulcer: Aluminium hydroxide, sodium bicarbonate, ranitidine, Omeprazole, and sucralfate.
 - Antiemetic drugs: Domperidone, Ondansetron, promethazine
 - Antidiarrheal: Loperamide, ORS
 - Drugs used in constipation: Isapgol husk, Bisacodyl, Castor oil, Lactulose
 - C. NSAIDs and Antipyretic Analgesics:
 - Ibuprofen, Mefenamic acid, Paracetamol, Aspirin, Etoricoxib, Ketorolac
 - D. Drugs used in gout and rheumatoid arthritis:
 - Colchicine, Allopurinol, Febuxostat, Methotrexate, Methylprednisolone
 - E. Respiratory System Drugs:
 - Antitussives: Codeine, Dextromethorphan
 - Expectorant: Ammonium Chloride, Bromhexine
 - Drugs used in asthma and COPD: Salbutamol, salmeterol, Tiotropium bromide, Montelukast
 - F. Antimicrobial:
 - Sulphonamides: Co-trimoxazole,
 - Penicillin: Ampicillin, Amoxycillin, Imipenam
 - Cephalosporin: Cephadroxil, cefexime, Cefotaxime, Cefpodoxime
 - Beta lactamase inhibitor: Clavulanic acid, Sulbactam, Tazobactam
 - Tetracycline: Tetracycline, Doxycycline

- Aminoglycosides: Gentamycin, Amikacin
 - Macrolides: Erythromycin, Azithromycin, Clarithromycin
 - Quinolones and fluoroquinolones: Nalidixic acid, Norfloxacin, ofloxacin
 - Antifungal: Amphotericin B, Itraconazole, Fluconazole
 - Antiviral: Acyclovir Remdicitvir, Zidovudine, Lamivudine, tenofovir
 - Antimalarial: Chloroquine, Primaquine, Quinine
 - Antiprotozoal: Metronidazole, Diloxanide Furoate, Tinidazole
 - Anthelmintics: Albendazole, Mebendazole
- G. Cardiovascular drugs
- Diuretics and anti-diuretics: Frusemide, Hydrochlorothiazide, Spironolactone, Vasopressin
 - Beta Blockers: Atenolol, Metoprolol
 - Calcium channel Blockers: Amlodipine, Verapamil, Nifedipine
 - ACE inhibitors: Enalapril, Ramipril
 - ACE-II inhibitors: Losartan, Telmisartan
 - Vasodilators: Nitroglycerine
 - Cardiac glycosides: Digoxin
 - Lipid-lowering: Atorvastatin, Fenofibrate
 - Anti-platelet: Aspirin
 - Anticoagulant and antagonist: Heparin, Warfarin, Phytomenadione, Protamine sulphate.
- H. Histamine and antihistamine
- Antihistamines: Chlorpheniramine, Cetirizine, Levocetirizine, Fexofenadine.
 - Decongestants: Local: Oxymetazoline. Systemic: Phenylephrine.
- I. Hormones and related drugs
- Drugs used in hypothyroidism and hyperthyroidism: Thyroxine, Propylthiouracil, Carbimazole
 - Anti-diabetic drugs: Insulin, Metformin, Sitagliptin, Pioglitazone, Glipizide, Glibenclamide, Glimepiride, Voglibose,
 - Glucagon
 - Corticosteroids: Betamethasone, Dexamethasone, Hydrocortisone, Prednisolone,
 - Androgen and its antagonist: Testosterone, Flutamide, Finasteride, Progesterone, Estrogen, and SERMs (Tamoxifen, Clomiphene citrate)
 - Female contraceptives: Oral contraceptives, Injectable contraceptives and Implantable contraceptives, Oxytocin
- J. Drugs acting on peripheral nervous system:
- Skeletal muscle relaxant drugs: Tizanidine, Atracurium,
 - Local anaesthetics: Lignocaine, Procaine, Oxythiazine

- K. Drugs acting on central nervous system:
- General anesthetics: Nitrous Oxide, Halothane, Ketamine, Propofol
 - Sedatives-hypnotics: Diazepam, Alprazolam.
 - Antiepileptic drugs: Carbamazepine, Phenytoin, Valproic Acid,
 - Antiparkinsonian drugs: Levodopa, Carbidopa
 - Opioid analgesics and antagonists: Morphine, Pethidine, Codeine, Naloxone
 - Antipsychotic, antimanic and antidepressant drugs: Fluoxetine, Amitriptyline, Chlorpromazine, Haloperidol, Lithium salts
 - Management of migraine headache: Ergometrine, Triptans (Sumatriptan, Rizatriptan, Zolmitriptan)

2.2 Pharmacotherapeutics

2.2.1 Gastrointestinal system:

- Gastritis, ulcer, colitis, pancreatitis, dyspepsia.
- Peptic ulcer disease (PUD), Etiological classification, pathophysiology, clinical features, pharmacological treatment guidelines and non-pharmacological management of PUD.

2.2.2 Musculoskeletal disorders:

- Pain pathways and Pain management (WHO analgesic ladder).
- Introduction, clinical manifestations, investigation, pharmacological treatment with doses regimen, non-pharmacological management, complication, and referral of Rheumatoid arthritis, Osteoarthritis, Gout, Osteoporosis.

2.2.3 Nervous system:

- Motor neuron disease, Multiple sclerosis, Cerebral palsy, Alzheimer's Disease
- Introduction, clinical manifestations, investigation, pharmacological treatment with doses regimen, complication, and referral of Epilepsy, Parkinsonism, and psychosis Disorder, anxiety disorder

2.2.4 Respiratory system:

- Introduction, Causes, clinical manifestations, investigation, prevention, pharmacological treatment with doses regimen, complication, and referral of Asthma, Chronic obstructive pulmonary disease, acute bronchitis.
- Pneumonia, Etiological classification, pathophysiology, clinical features, pharmacological treatment guidelines and non-pharmacological management of pneumonia

2.2.5 Infectious disease:

- Introduction, clinical manifestations, pharmacological treatment with doses regimen, complication, guidelines for the rational use of antibiotics and surgical Prophylaxis, and referral of Tuberculosis (DOTS) therapy for PTB according national guideline, Meningitis, Gastroenteritis, typhoid, Cholera, Septicaemia, Fungal infections (ring worm), Viral infections (Rhinitis, Herpes Zoster, measles, Chicken pox).

- Classification of disease according to causative agents and describe Diagnosis, management and prevention of common communicable diseases: Filariasis, Dengue fever, Dysentery (Amoebic & Bacillary), Giardiasis, Rabies, Food poisoning, Influenza, Typhus fever, Worm infestations (Hook worm, Round worm, Tape worm)
 - Urinary tract infection (UTI), Etiological classification, pathophysiology, clinical features, pharmacological treatment guidelines and non-pharmacological management of UTI.
- 2.2.6 Cardiovascular system:
- Introduction, Causes, clinical manifestations, investigation, prevention, pharmacological treatment with doses regimen, complication and referral of cardiovascular diseases.
- 2.2.7 Dermatology:
- Wound, ulcer, blister, hives, cellulitis, contact dermatitis.
 - Introduction, clinical manifestations, investigation, prevention, pharmacological treatment with doses regimen, complication, and referral of Psoriasis, Scabies, Eczema, Acne, and pediculosis.
- 2.2.8 Endocrine system
- Introduction, clinical manifestations, investigation, Pharmacological treatment with doses regimen, complication, and referral of Hypothyroidism and Hyperthyroidism.
 - Diabetes Mellitus, Classification, Pathophysiology, Clinical, Pharmacological treatment guidelines with doses regimen, non-pharmacological management and complications of Diabetes Mellitus.
 - Hormonal therapy for contraception
- 2.2.9 Renal system:
- Introduction, Causes, clinical manifestations, investigation, pharmacological treatment with doses regimen, complication, and referral of Acute Renal Failure, Chronic Renal Failure

Unit 3: Pharmaceutical Pharmacy

[20]

- 3.1 Historical background and development of profession of pharmacy:
- 3.2 History of the pharmacy profession in Nepal concerning pharmacy education, industry and organization.
- 3.3 Dosage forms: Introduction to dosage forms, definition with example.
- 3.3.1 Solid dosage forms: Tablets, Capsules, Powders, Granules, Lozenges,
- 3.3.2 Liquid dosage forms: Solution, Syrups, Elixirs, Emulsions, Suspensions, Liniments, Injections, Tinctures,
- 3.3.3 Semisolid dosage forms: Ointments, Creams, Paste, Gels,
- 3.3.4 Suppositories
- 3.3.5 Gases dosage forms: Aerosol, Inhalants
- 3.3.6 Parenteral dosage forms: Large volume and Small volume products.
- 3.3.7 Physicochemical Principles of Pharmaceutics

- pH, buffers and Isotonic solutions
 - Rheology and flow of fluids. Definition of viscosity and rheology, classification of fluids based on its flow property. Definition and types of Newtonian and Non-Newtonian fluid.
 - Surface and Interfacial Phenomena. Definition of surface and Interfacial tension. Definition of Contact angle and its pharmaceutical applications. Surfactants, their Classification with examples.
- 3.3.8 Solid dosage form
- Tablets:
 - Introduction, ideal characteristics of tablets, classification of tablets. Excipients, Formulation of tablets, granulation methods, compression and processing problems.
 - Tablet coating: Describe the reasons for tablet coating with merits and demerits, Types of coating, coating materials.
 - Capsule:
 - Definition of capsule and mention its types, size, advantages and disadvantages.
 - Different parts, filling materials and filling procedures of capsule.
 - Packaging, storage and stability testing of soft gelatin capsules and their applications.
- 3.3.9 Liquid dosage forms:
- Liquid orals: Formulation and manufacturing consideration of syrups, elixirs, suspensions and emulsions.
 - Suspensions: Definition, advantages and disadvantages, classifications, Preparation of suspensions; Flocculated and Deflocculated suspensions.
 - Emulsions: Definition, classification, and preparation of emulsions. Advantages and disadvantages. Methods of preparation of emulsions.
- 3.3.10 Semisolid dosage forms:
- Definitions, classification, mechanisms and factors influencing dermal penetration of drugs. Preparation of ointments, pastes, creams and gels. Excipients used in semi solid dosage forms.
- 3.3.11 Packaging Materials science:
- Materials used for packaging of pharmaceutical products, factors influencing choice of containers, legal and official requirements for containers, stability aspects of packaging materials, quality control tests.
- 3.3.12 Pharmaceutical Aerosols:
- Definition, propellants, containers, valves, types of aerosol systems; formulation and manufacture of aerosols; Evaluation of containers; Quality control and stability studies.
- 3.3.13 Powders:

- Definition, classification, advantages and disadvantages, Simple & compound powders – official preparations, dusting powders, effervescent, efflorescent and hygroscopic powders, eutectic mixtures. Geometric dilutions.

3.3.14 Suppositories:

- Definition, types, advantages and disadvantages, types of bases, methods of preparations, Evaluation of suppositories.

Unit:4 Pharmacognosy and Pharmaceutical Chemistry

[15]

4.1 Pharmacognosy

- 4.1.1 Introduction to Pharmacognosy, Classification of crude drugs. Complementary and alternative systems of medicine and their different dosage forms (focusing on Ayurveda and Homeopathic systems of medicine).
- 4.1.2 Method of cultivation of plants. Collection, drying, and storage of crude drugs.
- 4.1.3 Introduction to parts of plants and Quality control and evaluation of crude drugs.
- 4.1.4 Phytochemistry: Alkaloids, Glycosides, Volatile oil, Resins, Tannin and Fixed oil.
- 4.1.5 Pharmacognostic study of crude drugs- Microscopical features of stramonium, Ephedra, Digitalis, senna, cinnamon, Fennel, Clove, Mentha, Ginger, Vinca
- 4.1.6 Pharmaceuticals Aids (focusing on source, properties, and uses) Starch, Gum Acacia, Tragacanth, Agar, Cod liver oil, Gelatin, Beeswax, Honey and Liquid paraffin.
- 4.1.7 Status of medicinal plants of Nepal: vernacular name, English name, botanical name, family, distribution, habitat, parts used and morphological characteristics of following ten medicinal plants of economic important found in Nepal. Panchaunle (*Dactylorhiza hatagirea*), Yarshagumba (*Cordycep sinensis*), Harro (*Terminalia chebula*), Pipla (*Piper longum*), Barro (*Terminalia balerica*), Satawari (*Asparagus racemosus*), Timur (*Zantoxylum armatum*), Gurjo (*Tinospora sinensis*) and Amala (*Embllica officinalis*).

4.2 Pharmaceutical Chemistry

- 4.2.1 Acid, Base, Buffer, Antioxidant: - HCl, NaOH, Citric acid, Sodium Benzoate
- 4.2.2 Major Intra and extra-cellular electrolytes: - Acid-base balance, Replacement Therapy, NaCl, KCl, Ringer Lactate, ORS
- 4.2.3 Nomenclature of organic compounds with special reference to heterocyclic system. Explain the numbering system of different positions of the benzene ring.
- 4.2.4 Roles and Deficiency of Vitamins, Minerals and Enzymes (Vitamin A, Vitamin B group, Vitamin C, Vitamin D, Vitamin E, Vitamin K)
- 4.2.5 Concentration of a solution: molarity, molality, mole fraction, percent Volume, percent mass, PPM, PPB, normality.

5.1 Lab Instrumentation Identification and Usage:

- UV spectrophotometer, Universal hot air oven, Rotary evaporator, High-performance Thin Layer Chromatography (HPTLC), pH meter, Monsanto hardness tester, Tablet compression machine, Manual capsule filling machine, Tablet friability test apparatus, Dis-integrating apparatus, Double Beam U.V, Flame Photometry, Brookfield Viscometer, Melting point apparatus, Dissolution apparatus, Fire Exhauster.

The End

Sample Questions [Long and Short Answer Type]

Second Paper: Service Related subject

Subject: Pharmacy

| |
|--------------------------|
| Full Marks: 75 |
| Pass Marks: 30 |
| Time: 2 hours 30 minutes |

Attempt all Questions

Group A: Long Answer Type Questions:

[3×10 = 30]

1. Could you briefly explain the clinical testing process from Phase 0 to Phase III?
2. What are the clinical manifestations of asthma, and discuss the various treatment approaches for managing chronic asthma?
3. Define drug information and mention its different resources along with their advantages and disadvantages?

Group B: Short Answer Type Questions:

[9×5 = 45]

1. Define adverse drug reaction (ADR). Describe its various reasons and causes that can lead to an ADR?
2. What are the essential role and responsibilities of a hospital pharmacist when involved in a poison control center?
3. What do you mean by drug-drug interaction? Elaborate the mechanism of pharmacokinetic drug-drug interactions with a suitable example.
4.
5.
6.
7.
8.
9.

Sample Questions for practical Exam

Subject: Pharmacy

| |
|----------------|
| Full Marks: 30 |
| Pass Marks: 12 |
| Time: 30 |
| Minutes |

Perform the following activities: [30 Marks]

1. Prepare and supply aqueous iodine solution.
2. Carry out simple filtration experiment from the given materials.
3. Determination of melting point of a given sample
4. Carry out the limit test for chloride.
5. How do you set up the given equipment for performing the titration?
6. Prepare and supply 0.9% sodium chloride solution.
7. Identify and mention the uses of the given equipment and glassware.
8. Measure the blood pressure, temperature and blood sugar level of a person by the given instruments.

Note: One /two/three questions can be asked to each candidate to perform the given activities on the basis of the weightage of question. Essential instruments, chemicals, models and lab will be available.