



PH-II/3(N)

2024

Biochemistry and Clinical Pathology

Time Allowed: 3 Hours

Full Marks: 80

Answer all Questions

- I. A. Choose the correct alternative (any ten).** 1×10
- An example of regulatory protein – (i) Insulin (ii) Papain (iii) Collagen (iv) Haemoglobin.
 - Abnormal constituents of urine – (i) Albumin (ii) Ketone bodies (iii) Sugar (iv) All of the above.
 - Copper sulphate solution is called – (i) Fehling A (ii) Fehling B (iii) Barfoed's reagent (iv) Seliwanoff's reagent.
 - The structure of Keratin, a hair protein, is made up of – (i) α -helix (ii) β -pleated (iii) Both α -helix and β -pleated (iv) None of the above.
 - Presence of pus in urine is known as – (i) Pyuria (ii) Haematuria (iii) Proteinuria (iv) Glycosuria.
 - The following coenzyme is a nucleotide – (i) NAD^+ (ii) FAD (iii) CoASH (iv) All of the above.
 - DNA is a polymer of – (i) Ribonucleotides (ii) Deoxyribonucleotides (iii) Deoxyribose (iv) Ribose.
 - Carbohydrates are present in muscle in the form of (i) Amylopectin (ii) amylase (iii) Collagen (iv) glycogen.
 - All of the following are basic amino acids except – (i) Lysine (ii) Arginine (iii) Glutamate (iv) Histidine.
 - Number of unsaturation present in Arachidonic acid is – (i) 2 (ii) 3 (iii) 4 (iv) 5.
 - Synthesis of cholesterol and steroid is the function of – (i) Nucleus (ii) Endoplasmic reticulum (iii) Golgi apparatus (iv) Ribosomes.
- B. Fill in the blanks (any ten)** 1×10
- Full form of ECF is _____
 - Hypematremia caused due to the absence of _____
 - Increase in leucocyte count in body is known as _____
 - IUB stands for _____
 - The process of breakdown of glucose into pyruvic acid is known as _____
 - Sodium taurocholate is an example of _____
 - Deficiency of Niacin causes _____
 - _____ and _____ are the coenzymes of Riboflavin.
 - CPK means _____
 - Lock and Key model of enzyme activity was first proposed by _____
 - Nucleotides are _____ esters of nucleosides.
- 2. Answer any 10 (Ten) questions from the following:** 3×10
- Briefly enumerate the difference between oils and fats.
 - Discuss the role of neutrophil, eosinophil and basophil in the human body.
 - Describe the 'Carnitine shuttle' process that occurs during β -oxidation of fatty acid.
 - Classify Straight Chain fatty acid.
 - Define – reducing sugar with examples.

- f) Write short notes on Chargaff's rule.
- g) Write short notes on Xanthoprotein test.
- h) Describe various tests to assess Kidney function.
- i) Write in brief about the applications of Biotechnology in human welfare.
- j) Discuss briefly about the therapeutic importance of enzymes.
- k) What are nucleosides? Briefly explain the components and structures of nucleosides.
- l) Write down the chemical composition of Seliwanoff's reagent and state its significance in the qualitative test of carbohydrates.

3. Answer any 6 (Six) questions from the following:

5×6

- a) Briefly describe (with flow diagram) the steps of the urea cycle.
- b) Analyse and elaborate different factors that affect enzyme activity
- c) What is ORT? Write a short note on ORT/ORS.
- d) What is DNA? Describe DNA structure based on Watson & Crick hypothesis
- e) Describe the importance of minerals in the human body.
- f) Write a short note on 'competitive inhibition of enzyme'
- g) Write a short note on diseases related to malnutrition of proteins.
- h) Explain different chemical reactions and energetics of glycolysis.



2024

PH-II/5 (N)

HOSPITAL & CLINICAL PHARMACY

Time Allowed: 3 Hours

Full Marks: 80

Answer all questions as directed.

1. Choose the correct alternative (any ten):

10x1=10

- i) Minimum floor size required for a Hospital Pharmacy is -- a) 350 sq.ft, b) 300 sq.ft, c) 250 sq.ft, d) 200 sq.ft.
- ii) Minimum qualification for registration as Pharmacist is-- a) Pharm D, b) D Pharm, c) B Pharm, d) M Pharm
- iii) Drugs for Emergency Box in wards should contain -- a) Atropine Sulphate 0.4mg/ml, b) Digoxin 0.25mg/ml, c) Both a & b, d) None of a & b.
- iv) Benefits of eTender are – a) Reduced cost, b) No Paperwork, c) Both a& b, d) None.
- v) Which one is not a NDPS drug –a) Codeine, b) Dobutamine, c) Heroin, d) Morphine
- vi) ILR stands for – a) Ice Lined Refrigerator, b) Internal Laboratory Refrigerator, c) Imported Laboratory Refrigerator, d) Ice Locked Refrigerator.
- vii) LASA drugs – a) Look alike, sound alike, b) Look alike, smell alike, c) Both a & b, d) None.
- viii) Services provided for immediate medical attention or in an accidental case – a) Primary care, b) Emergency care, c) Secondary care, d) Referral care.
- ix) Drug incompatibility can be classified into – a) Physical incompatibility, b) Chemical incompatibility, c) Therapeutic incompatibility, d) All of them.
- x) A male patient aged 45 years with HbA1c value 8.5% is: a) Diabetic, b) Normal, c) Pre-diabetic, d) Borderline diabetic
- xi) I^{131} is used in the treatment of: a) Thyroid Cancer b) Breast Cancer c) Colon Cancer, d) all of them.

2. Fill in the blanks: (any ten)

10x1=10

- i) QCI stands for _____.
- ii) The drug whose activity is affected due to interaction with another drug is called _____ drug.
- iii) A 300 bed hospital should have _____ number of Pharmacists
- iv) IVF is the abbreviated form for _____.
- v) Drugs given to the patients through the nursing station is called _____ system
- vi) The full form of MRI is _____.
- vii) _____ acts as the secretary of the Pharmacy and Therapeutic Committee.
- viii) Spirometry test is done to test _____ function.
- ix) Hypokalemia is caused due to lower than normal levels of _____.
- x) TPN is the abbreviated form for _____.
- xi) Vials of Insulin injection should be stored at temperature range of _____ °C

3. Answer the following questions (any ten):

10x3=30

- i) Explain the terms FEFO and FIFO used in inventory control.
- ii) A large hospital has a fixed demand for 15000 Oxygen Masks /year. The ordering cost per order is ₹20/- and the holding Cost for this inventory is ₹0.50 per unit. Calculate the EOQ per order using Wilson Formula
- iii) Write a brief note on the storage and dispensing requirements for NDPS drugs in a Hospital Pharmacy
- iv) Define Pharmacovigilance. Give its aim and scope.
- v) Why is an ILR used at PHC for storage of vaccines?
- vi) Write a short note on Satellite Pharmacy.
- vii) Explain the term LASA medicines with examples.
- viii) Define with examples- high risk medicines, emergency drugs and reserved antibiotics
- ix) Write a note on activated charcoal in the management for poisoning.
- x) Write a short note on liver function tests.
- xi) Enumerate the role of pharmacists in preventing antimicrobial resistance.

4. Answer the following questions (any six):

6 x 5 = 30

- a) Define Clinical Pharmacy. Discuss in detail the role of a clinical pharmacist
- b) Describe in details the different types of medication errors and their prevention
- c) Write a note on Arsenic Poisoning symptoms and its treatment.
- d) Give criteria for selection of charge floor stock drugs. Give its advantages and disadvantages
- e) Write in detail about the dispensing, storage and disposal of Radiopharmaceuticals.
- f) Describe the Vaccine Cold Chain Distribution Network System in India by a flow diagram. What dispensing requirements for Schedule H1 drugs are to be followed by a Hospital Pharmacist?
- g) What is TPN? Write in detail about the composition of TPN.



COMMUNITY PHARMACY AND MANAGEMENT

Time Allowed: 3 Hours

Full Marks: 80

Answer all the questions as directed

1. Fill in the blanks

1x10

- a. BMI Stands for _____.
- b. Sphygmometer is used to measure _____.
- c. Laxatives are used in the treatment of _____.
- d. World No Tobacco day is observed on _____.
- e. Lactulose is used as _____.
- f. Preparation of SOP is the responsibility of _____.
- g. Pharmacists are registered under the Pharmacy Act _____.
- h. Upon receiving a prescription, the first responsibility of the Pharmacist is _____.
- i. _____ is an example of Online Pharmacy.
- j. Full form of EOQ is _____.

2. Choose the correct alternatives

1x10

- i) In Prescription 'Signatura' means -
 - a) Instruction to the patient about intake of drug
 - b) Signature of the prescriber
 - c) Instructions to the pharmacist about compounding
 - d) Signature of the pharmacist
- ii) Which of the following is the function of a Pharmacist?
 - a) Counselling
 - b) Checking symptoms of minor ailment
 - c) Health promoter
 - d) All of the above.
- iii) What does CPR stands for-
 - a) Chest Pressure Response
 - b) Chest Per Resuscitation
 - c) Cardiopulmonary Resuscitation
 - d) Cardio Press Resuscitation
- iv) Which of the following categories is used as a laxative.
 - a) Bulk forming
 - b) Stimulant
 - c) Fecal lubricant
 - d) All of the above
- v) Inhalers and nebulizers are used in _____.
 - a) Respiratory problems
 - b) Kidney problems
 - c) Nerve problems
 - d) Liver problems
- vi) Hyperlipidemia is mainly associated with _____.
 - a) Triglyceride level
 - b) Cholesterol level
 - c) Glucose level
 - d) All the above
- vii) Community pharmacy customers expect the following, except _____.
 - a) Knowledge about drugs and other products.
 - b) Speed and accuracy.
 - c) Personal service.
 - d) Discount in bills.
- viii) To prevent drug interaction the following is most important:
 - a) Interaction checker software
 - b) Pharmacopoeia and drug formulary
 - c) Excellent pharmacological knowledge
 - d) Patient history
- ix) What does the term 'arrhythmia' mean-
 - a) The medical term for heartbeat.
 - b) Irregular heartbeat.
 - c) Lack of heartbeat.
 - d) Slow heartbeat.
- x) Which one of the following is an oral hypoglycaemic drug?
 - a) Ibuprofen
 - b) Metformin
 - c) Ace inverters
 - d) Atorvastatin

3. Answer the following questions (any ten)

3x10

- a. Briefly discuss different types of communication skills.

- b. Briefly discuss the steps involved in dispensing a prescription.
- c. Write a short note on the causes of dispensing errors.
- d. Briefly discuss the role of the Community Pharmacist.
- e. What are the common tests done in health screening?
- f. Discuss any one inventory control process: ABC Analysis / EOQ / VED analysis
- g. What is "SOP"? Discuss its objectives.
- h. What is 'mHealth'? Briefly discuss any three mHealth interventions.
- i. What are the factors responsible for COPD?
- j. What is communication? Name different types of communication.
- k. What is OTC medicine? What are the advantages of OTC medication?

4. Answer the following questions (any six)

5x6

- a. Discuss the strategies that can be used to overcome medication non-adherence.
- b. Explain the various responsibilities of a community pharmacist.
- c. Define patient counseling. Give the objectives and benefits of patient counseling
- d. What do you mean by inventory control? Give the objectives and importance of inventory control.
- e. What is tuberculosis? What are its causes? signs and symptoms? What are non-pharmacological patient counseling points for tuberculosis management?
- f. What is hypertension? What are its causes, signs, and symptoms? What is the non-pharmacological patient counseling point for hypertension management?
- g. Discuss the Main Label and Ancillary Label in the dispensing process of medicines.

2024

PHARMACOLOGY



PH-II/1(N)

Time Allowed: 3 Hours

Full Marks: 80

(Answer the following questions as directed)

1. Choose the correct alternative (any ten): **1x10=10**

- i) Antibiotics which inhibit protein synthesis by binding with 30s ribosomal subunit is: a) Lincosamide b) Tetracycline c) Chloramphenicol d) Erythromycin
- ii) Which is not an example of CCB: a) Verapamil b) Hydralazine c) Nifedipine d) Diltiazem
- iii) Which one is a selective β_2 Adrenergic Receptor Agonist: a) Paracetamol b) Propranolol c) Nabivolol d) Salmeterol
- iv) 'Chronotrope' means: Agent that changes a) myocardial contractility b) Heart rate c) Conduction velocity d) None of the above
- v) Eating of cheese is advised with MAO inhibitor (correct/incorrect)
- vi) Aspirin is used in patient with peptic ulcer (correct/incorrect)
- vii) Atropine produces photophobia (correct/incorrect)
- viii) Example of ulcer protective drug is _____ (Salbutamol/Sucralfate/Famotidine)
- ix) Example of antidiuretic is _____ (Frusemide/vasopressin/Indomethacin)
- x) Example of antiviral drug is _____ (Mebendazole/Acyclovir/Rifampin)
- xi) Histamine causes _____ of vascular smooth muscle (relaxation/contraction)

2. Define the following terms (any ten): **1x10=10**

- i) Bioavailability
- ii) Therapeutic Index
- iii) Anorexia
- iv) Plasma half life
- v) Sedative
- vi) First pass metabolism
- vii) Idiosyncrasy
- viii) Prodrug
- ix) Receptor
- x) Mydriasis
- xi) Carcinoma

3. Answer the following questions (any ten): **3x10=30**

- i) Write the drugs treatment for Arrhythmia.
- ii) Describe preanaesthetic medication.
- iii) Why is probenecid sometimes given as an adjuvant in penicillin therapy?
- iv) What is myasthenia gravis and its treatment?
- v) What are the different routes of administration of drugs?
- vi) Write about the "DOTs" therapy for TB?
- vii) Write about the combined effect of drugs.
- viii) Why is Potassium salt given along with thiazide diuretics?

- ix) Write the limitations of Penicillin-G.
- x) What is drug absorption and mention the factors affecting it?
- xi) Write the drug treatment for diarrhoea.
- xii) Write about the oral contraceptive drug combinations available for contraception?

4. Answer the following questions (any six):

5x6=30

- i) Classify Adrenergic receptor antagonists with example. Write clinical uses of those drugs.
- ii) Write the MOA of sulphonamides.
- iii) Write down the treatment of peptic ulcer.
- iv) Discuss the drugs treatment for malaria.
- v) What are NSAIDs? Write the use and general side effects of NSAIDs.
- vi) Write a short note on antifungal drugs.
- vii) Write the types of seizures in epilepsy and list of drugs used for it.
- viii) What are anticancer drugs? Classify anticancer drugs along with suitable examples.



PHARMACOTHERAPEUTICS

Time Allowed: 3 Hours

Full Marks: 80

(Answer all questions as directed.)

1. Choose the correct alternative (any ten):

10 x 1

- i) The use of at least five drugs daily by an individual is called _____.
 (a) Pharmacy (b) Polypharmacy (c) Pharmacokinetics (d) Pharmacovigilance
- ii) The first line lipid lowering agent is _____.
 (a) amlodipine (b) gemfibrozil (c) atorvastatin (d) Metformin
- iii) Which drug is the trigger factor for asthma _____.
 (a) insulin (b) aspirin (c) salbutamol (d) vitamin K
- iv) Which one is an autoimmune disease _____.
 (a) CHF (b) COPD (c) Rheumatoid arthritis (d) Myocardial infarction
- v) Human body stores iron in liver as _____.
 (a) hemosiderin (b) haemoglobin (c) ferritin (d) erythropoietin
- vi) The full name of the term "SLE" is _____.
 (a) Severe Lupus erythematous (b) Sub acute Lupus erythematous
 (c) Serum Lupus erythematous (d) None of them.
- vii) The term "Atopic" is associated with _____.
 (a) Genetic (b) non-genetic (c) may be both (d) none.
- viii) Which drug reduce gastric activity _____.
 (a) antimuscarinic (b) Proton pump Inhibitors (c) Histamine(H₂) receptor antagonist (d) all of them.
- ix) Which drug known to cause bronchospasm _____.
 (a) ACE inhibitors (b) β -adrenergic blockers (c) cholinergic drugs (d) all of them.
- x) Pellagra is caused due to deficiency of _____.
 (a) Vitamin B12 (b) Vitamin C (c) Vitamin B3 (d) Vitamin D
- xi) Ethosuximide is used in treatment of _____.
 (a) Epilepsy (b) Urinary Tract Infections (c) Hypertension (d) Bronchodilator

2. Fill in the blanks with appropriate word or words: (any ten)

10 x 1

- i) The name of the neurotransmitter causing major psychosis is _____.
- ii) The antibiotic _____ which may cause resistance to Mycobacterium tuberculosis.
- iii) The meaning of NPPA is _____.
- iv) _____ is an example of biguanide hypoglycaemic agent.
- v) Full form of NLEM is _____.
- vi) _____ is a noncontagious autoimmune skin disease.
- vii) GRED stands for _____.
- viii) The main cause of dysmenorrhoea is due to release of _____.
- ix) Parkinson's disease is caused by the deficiency of _____.
- x) _____ is a bacteria, causes Urinary tract Infections.
- xi) Angina pectoris is defined as _____.

3. Answer the following questions (any ten):

10 x 3

- i) Define Hypertension. Mention various risk factors of Hypertension.
- ii) State the pharmacological and nonpharmacological management of diabetes.
- iii) What are the advantages of standard treatment guidelines?
- iv) Define Pharmacotherapeutics. What is the significance of rational use of medicines?
- v) Write a short note on gonorrhoea.
- vi) Define Asthma. Describe the pharmacological management of Asthma.
- vii) Classify antirheumatic drugs with suitable examples.
- viii) Write about pharmacological management of megaloblastic anaemia.
- ix) Clinically classify different types of Bronchial asthma.
- x) Define inflammatory bowel disease and its treatment.
- xi) Write the symptoms and treatment of AIDS.

4. Answer the following questions (any six):

6 x 5

- i) Write a note on rational use of medicine in therapy.
- ii) Explain the pharmacological management of Rheumatoid arthritis and Osteoarthritis.
- iii) Write the etiopathogenesis and pharmacological management of COVID-19.
- iv) Discuss about ways of avoiding development of antimicrobial resistance.
- v) Write about non pharmacological management of hypertension.
- vi) Name different topical fungal infections and their treatments.
- vii) Define, classify and treatment of anaemia.
- viii) Explain the causative agent, mode of transmission and pharmacological management of tuberculosis.



PH-II/6 (N)

2024

PHARMACY LAW & ETHICS

Time Allowed: 3.00 Hours

Full Marks: 80

1. Choose the correct alternative

1X10=10

- i) When did the Pharmacy Act 1948, come into force-
a) 01 April 1949 b) 01 May 1949 c) 04 March 1948 d) 23 April 1948
- ii) Joint State Pharmacy Councils are constituted for-
a) 2 years b) 3 years c) 5 years d) Indefinite period as per agreement
- iii) What is the life of a patented drug?
a) 10 years b) 15 years c) 20 years d) 25 years
- iv) Premises licensed for sale of drug having qualified person but drugs are not compounded in it, called:
a) Pharmacy b) Chemist & Druggist c) Drug vendor d) Chemist Shop
- v) Medical devices are used for which purpose?
a) Diagnosis b) Prevention c) Monitoring d) All of these
- vi) Which phase is also known as "Confirmation Phase"?
a) Phase 2 b) Phase 4 c) Phase 3 d) Phase 0
- vii) In a purple container which waste is collected?
a) Syringes b) Hazardous waste c) Cytotoxic and cytostatic waste d) None of the above
- viii) DTAB contains _____ Ex- Officio members-
a) Five b) Six c) Seven d) Eight
- ix) _____ is an example of natural poison.
a) Carbolic Acid b) Chloroform c) Digitalis d) Mercury oxide
- x) The chairman of DTAB is the-
a) Director of Central Drug Laboratory b) Director of Central Drug Research Laboratory
c) Director of General Health Services d) Drug Controller of India

2. Answer the following questions.

1X10=10

- i) Define Biomedical Waste.
- ii) The latest Drug Price Control Order (DPCO) comes into force in _____
- iii) What is the full form of ICMR?
- iv) The full form of DTAB is _____
- v) What is EUA?
- vi) Insulin injection comes under schedule _____
- vii) Radioactive waste is covered under _____
- viii) FSSAI means _____
- ix) Schedule N deals with _____
- x) The full form of cGMP is _____

3. Answer the following questions (any TEN)

3X10=30

- i) Discuss details on NLEM.
- ii) What are the general requirements of GRP?
- iii) Define code of ethics. Explain receiving and handling of prescriptions by Pharmacists.
- iv) Explain in detail "The Drug Price Control Order Act 1995".
- v) Define the patent as per Patent Act. Which inventions are not patentable under this act.
- vi) What are the objectives of 'Narcotic Drug and Psychotropic Substances Act 1985'.
- vii) Write a brief note on Clinical Establishment Act.
- viii) Define: (a) Magic Remedy, (b) Advertisement, (c) Registered Pharmacist.
- ix) What is a blood bank? Write the criteria for blood donation.
- x) What are the functions of pharma regulatory bodies?
- xi) Mention the vision, mission and objectives of Indian Pharmacopoeia Commission.
- xii) Explain in detail about State Pharmacy Councils.

4. Answer the following questions (any six)

5X6=30

- i) Mention the qualification, power of a Drug Inspector.
- ii) Discuss the constitution and functions of PCI.
- iii) Define magic remedies. Give the constitution and functions of the Institutional Animal Ethical Committee.
- iv) What are the objectives of the Consumer Protection Act?
- v) Explain the various licenses issued under Drugs and Cosmetics Act 1940.
- vi) What are the minimum qualifications for appointment as a Government Analyst?
- vii) Discuss under what circumstances termination of pregnancy is legal? Who is the person eligible for terminating a pregnancy?