

Aug-2026

**BLDE (DEEMED TO BE UNIVERSITY)
POST GRADUATE DEGREE EXAMINATION**

[Time: 3 Hours]

[Max. Marks: 100]

**MD PHARMACOLOGY – PAPER - I
QP CODE: 5021**

Your answer should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary.
Each answer should be written on new page only.
Write Question No. in the middle of the page.

Long Essay

2x20=40 Marks

1. A 65-year-old male with chronic kidney disease develops severe Gentamicin toxicity despite receiving standard therapeutic doses. Discuss:
 - a) Principles of pharmacokinetics
 - b) Renal clearance and elimination
 - c) Volume of distribution
 - d) Drug accumulation
 - e) Therapeutic drug monitoring
 - f) Dose adjustment in renal impairment
2. Describe receptor classification and signal transduction mechanisms with suitable examples.

Short Essay

6x10=60 Marks

3. A patient receiving Salbutamol inhalation therapy develops progressively reduced bronchodilator response. Discuss receptor regulation, desensitization and tachyphylaxis.
4. Discuss therapeutic index and margin of safety
5. Explain absorption of drugs and factors affecting Bioavailability.
6. Describe phases of clinical drug development.
7. Discuss bioassay methods and applications.
8. Explain adverse drug reactions and pharmacovigilance.

19/08

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[Max. Marks: 100]

**MD PHARMACOLOGY – PAPER - II
QP CODE: 5022**

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Draw neat labeled diagrams wherever necessary.
Each answer should be written on new page only.
Write Question No. in the middle of the page.

Long Essay

2x20=40 Marks

1. A 55-year-old male with long-standing hypertension presents with headache, pedal edema and worsening renal function. His blood pressure remains uncontrolled despite treatment. Discuss:
 - a) Pharmacology of antihypertensive drugs
 - b) Role of ACE inhibitors, ARBs, Calcium channel blockers and Diuretics
 - c) Rational drug therapy in hypertensive patients with chronic kidney disease
 - d) Adverse effects, contraindications and recent therapeutic guidelines
2. A 58-year-old male with type 2 diabetes mellitus, hypertension and diabetic nephropathy presents with poor glycaemic control despite oral therapy. Discuss:
 - a) Pharmacology of insulin and insulin analogues
 - b) Newer anti diabetic drugs and their mechanisms and adverse effects
 - c) Rational drug selection in diabetic nephropathy
 - d) Adverse effects and therapeutic monitoring

Short Essay

6x10=60 Marks

3. A 68-year-old patient with chronic obstructive pulmonary disease (COPD) presents with acute exacerbation and severe breathlessness. Discuss pharmacotherapy of COPD.
4. A patient with chronic stable angina develops worsening symptoms despite nitrate therapy. Discuss antianginal drugs and rational combination therapy.
5. 5-HT receptor antagonist.
6. Pharmacological management of glaucoma.
7. Drugs used in inflammatory bowel disease.
8. Current pharmacotherapy of Alzheimer's disease and other dementias.

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MD PHARMACOLOGY – PAPER - III

QP CODE: 5023

Your answer should be specific to the questions asked.

Draw neat labeled diagrams wherever necessary.

Each answer should be written on new page only.

Write Question No. in the middle of the page.

Long Essay

2x20=40 Marks

1. A pharmaceutical company seeks approval for a biosimilar monoclonal antibody intended for treatment of rheumatoid arthritis. Discuss:
 - a) Drug development process from discovery to marketing
 - b) Clinical trial phases
 - c) Regulatory requirements for biosimilars
 - d) Post-marketing surveillance
2. A multicentric randomized controlled trial is planned to evaluate a new oral anticoagulant in patients with atrial fibrillation. Discuss:
 - a) Design of randomized controlled trials
 - b) Randomization, blinding and allocation concealment
 - c) Ethical considerations and informed consent
 - d) Statistical analysis and interpretation of results

Short Essay

6x10=60 Marks

3. Crossover and factorial study designs
4. Animal ethics and CPCSEA guidelines.
5. An investigator plans an observational cohort study to evaluate cardiovascular safety of a drug. Discuss cohort study design and advantages.
6. Pharmacoeconomics and cost-effectiveness analysis.
7. Intellectual property rights and patent regulations in drug development.
8. Measures of central tendency and dispersion

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**MD PHARMACOLOGY – PAPER - IV
QP CODE: 5024**

Your answer should be specific to the questions asked.

Draw neat labeled diagrams wherever necessary.

Each answer should be written on new page only.

Write Question No. in the middle of the page.

Long Essay

2x20=40 Marks

1. A 42-year-old woman with HER2-positive metastatic breast carcinoma has progressed despite conventional chemotherapy. She is considered for targeted biological therapy. Discuss:
 - a) Principles of targeted cancer therapy
 - b) Monoclonal antibodies and antibody-drug conjugates
 - c) Pharmacology of HER2-targeted agents
 - d) Recent advances, pharmacogenomics and future directions
2. A patient with severe refractory rheumatoid arthritis is being treated with a Janus kinase (JAK) inhibitor after failure of biologic therapy. Discuss:
 - a) JAK-STAT signaling pathway
 - b) Pharmacology of JAK inhibitors
 - c) Clinical applications and adverse effects
 - d) Recent advances in targeted immunomodulatory therapy

Short Essay

6x10=60 Marks

3. Recent advances in Alzheimer's disease.
4. Nanomedicine in drug delivery.
5. Novel drug delivery systems in pharmacotherapy.
6. Artificial intelligence and machine learning in drug discovery.
7. Pharmacogenomics and personalized medicine.
8. Recent advances in treatment of obesity.