

RAN-2606000102015001/2406000102010501

 IInd M.B.B.S. Examination August - 2026

Pharmacology, (Paper - I) Set 1

Time: 3 Hours]

[Total Marks: 100

સૂચના : / Instructions

(1) ઉપરોક્ત દર્શાવેલ વિગતો ઉત્તરવહી પર અવશ્ય લખવી.

Fill up strictly the above details on your answer book

Seat No.:

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Student's Signature

Section I
Q.1. MCQs

1×20 = 20

- “Nicotinic” sites include all of the following except
 - Bronchial smooth muscle
 - Adrenal medullary cells
 - Skeletal muscle
 - Sympathetic ganglia
- Acidic drugs mainly bind to plasma with
 - Albumin
 - α - acid glycoprotein
 - Both (a) and (b)
 - None of the above
- The choose the drug to be used as trans-dermal patch for management of cancer pain from the following options
 - Morphine
 - Pethidine
 - Fentanyl
 - Tramadol
- The drug of choice for anaphylactic shock is
 - Adrenaline 0.5ml 1: 1000 solution IM.
 - Adrenaline 0.5ml 1:1000 solution s.c.
 - Adrenaline 0.5ml 1:10,000 solution IM.
 - Adrenaline 0.5ml 1:10,000 solution s.c.
- The following NSAID cannot be prescribed to a patient of epilepsy
 - Piroxicam
 - Indomethacine
 - Ketorolac
 - Aspirin
- The following sympathmimetic amine has agonist action only on β_1 & β_2 receptors
 - Adrenaline
 - Noradrenaline
 - Isoprenaline
 - Mephentermine
- Drug used as diagnostic agent for myasthenia gravis
 - Physostigmine
 - Neostigmine
 - Pyridostigmine
 - Edrophonium

8. Drugs useful for cessation of smoking are all except
 - a) Nicotine
 - b) Varenicline
 - c) Bupropion
 - d) Amoxapine
9. All are drugs used for open angle glaucoma except
 - a) Netarsudil
 - b) Neostigmine
 - c) Brimonidine
 - d) Levobunolol
10. The following drug is not from 3rd generation anti-hypertensives drug which boasts of additional properties
 - a) Carvedilol
 - b) Labetolol
 - c) Betaxolol
 - d) Metoprolol
11. All are indications of 3rd generation anti-histaminic therapy except
 - a) Allergic rhinitis
 - b) Hay fever
 - c) Red watering itching eyes
 - d) Dermographism
12. Drug used to control vertigo in Meniere's disease is
 - a) Betahistine
 - b) Mizolastine
 - c) Rupatadine
 - d) Fexofenadine
13. Inhaled medication recommended as the 1st line bronchodilator for maintenance of treatment of symptomatic COPD
 - a) Inhaled corticosteroids
 - b) Long Acting Bronchodilator (LABA or LAMA)
 - c) Oral theophylline alone
 - d) Systemic corticosteroids
14. Before administering intravenous 50% dextrose in an unconscious chronic alcoholic, an essential vitamin to be administered to prevent Wernicke's encephalopathy is
 - a) Vitamin B₆ (Pyridoxine)
 - b) Vitamine B₁ (Thiamine)
 - c) Vitamin B₁₂ (Cyanocobalamin)
 - d) Vitamin C (Ascorbic acid)
15. A2-5mcg/kg/min dose of dopamine in cardiogenic shock will increase
 - a) Cardiac output
 - b) Urine output
 - c) Both (a) & (b)
 - d) Heart rate
16. Therapeutic Index is
 - a) Value of ED₅₀ / LD₅₀
 - b) A range between LD & ED
 - c) LD₅₀ / ED₅₀
 - d) ED₅₀ X LD₅₀
17. Deficiency of CYP2D6 enzyme leads to
 - a) Increase activity of warfarin
 - b) Failure of analgesic activity produced by codeine
 - c) Resistance to coumarin anticoagulant
 - d) Acute intermittent porphyria

18. The earliest evidence that a drug is stored in tissue is
 - a) An increase in plasma protein binding
 - b) A large apparent volume of distribution (V_d)
 - c) A decrease in the rate of formation of metabolites by the liver
 - d) An increase in the number of side effects produced by the drug
19. The following drug is mydriatic but not cycloplegic
 - a) Phenylephrine
 - b) Tropicamide
 - c) Cyclopentolate
 - d) Atropine
20. Adrenergic β_2 agonist produce muscle tremor by
 - a) Facilitating neuromuscular transmission
 - b) Incomplete fusion of contractile response of individual fibres
 - c) Enhanced firing of muscle spindles
 - d) Both (b) & (c)

Section II

Q.2. Answer in short (Any five) **3×5 = 15**

- a) Give the definition of pharmacovigilance (Pv) & the activities involved in Pv. Discuss the process of causality assessment done under Pv program.
- b) Give the mechanism of action of lignocaine. Discuss the advantages & disadvantages of fixed dose combinations (FDC) of lignocaine with adrenaline used for local anaesthesia.
- c) What is phase IV of a clinical trial? Discuss the participants included in this phase & also give importance of a Phase IV clinical trial.
- d) Enumerate the three different doses of Aspirin used in therapeutics. Based on pharmacological action give the rationale behind this usage.
- e) Give the advantages of Methadone substitution therapy for opioid dependence.
- f) Describe & discuss the role of a physician in health care system

Q.3. Write answers in detail (Any three) **5×3 = 15**

- a) Define agonist & antagonist. By drawing Dose Response Curve (DRC) with appropriate examples, explain the phenomenon of competitive & non competitive antagonism.
- b) Give therapeutic indications of β -blockers.
- c) Give the mechanism of action, therapeutic indication & side effects of the vesico-relaxant agent Mirabegron.
- d) Give the drug therapy of status asthmaticus.

Q.4. Case Based Question **10**

A 40-year-old male visited OPD of orthopedic department complaining of severe pain in small joints of his foot with excruciating pain & swelling in his first metatarsal joint of right foot (big toe). He had attended a friend's pre-wedding party the previous night where he had consumed a hearty meal of butter paneer & chole kulche with a few alcoholic drinks as well! After detailed history & blood tests, his serum uric acid was found to be quite high with total blood count & WBC also on the higher side. He admitted to being a treated case of gout with occasional flare ups which he would manage with use of OTC analgesics like ibuprofen & diclofenac sodium. Patient was prescribed oral tab colchicine in adequate doses to take care of the acute episode. He was advised to look out for a certain adverse effects & report to the emergency in case of severe ADR.

Answer the following questions :

1. Give the mechanism of action of colchicine in acute gout. Also give the specific ADR of colchicine when prescribed for gout, which is also considered diagnostic for gout when it appears. 02+01
2. Give the names of at least two drugs belonging to other groups used for management of a case of chronic gout. 02
3. Give the mechanism of action of probenecid in management of chronic gout. Give one contraindication to prescription of probenecid in a patient of gout. 02+01
4. Name two conditions other than gout where serum uric acid can be high (secondary hyperuricaemia) 02

Section III

Q.5. Answer in short [Any five] 3×5 = 15

- a) Give the mechanism of action & adverse effects of disulfiram. Give examples of two other drugs causing disulfiram like reaction.
- b) Discuss the concept of “on & off phenomenon in relation to Parkinson’s disease.
- c) Why prescription for an infant & a prescription for a geriatric patient be different from an adult patient? Give justification for your answer with examples.
- d) Define “shelf-life” of a drug. Give its importance in therapeutics.
- e) Give the mechanism of action of nasal decongestants available as OTC drug. Explain why nasal decongestants are to be used with caution in patients on anti-hypertensive therapy.
- f) Name two anti-cholinergic drugs used in therapeutics. Explain why anti-cholinergic drugs are contraindicated in elderly men.

Q.6. Answer in detail [Any three] 5×3 = 15

- a) Discuss the therapeutic uses of various prostaglandin analogues.
- b) Give the classification of anti-tussive drugs. Discuss how the management of dry cough differs from productive cough with the mechanism of action of drugs used for the same.
- c) Explain how the 3rd generation β -adrenergic blocking drugs are different from the older previously used 2nd & 1st generation drugs.
- d) Give the mechanism of action, therapeutic indication & uses of Lamotrigine.

Q.7. Case based question 10

During a routine ophthalmic examination, the optician noted a raised intra ocular pressure with optic nerve changes in a 56-year-old woman. Further tests revealed that she had open-angle (simple) glaucoma. Based on this case history

Answer the following -

1. Enumerate the various drugs useful for the management of glaucoma. 03
2. Give the most effective & appropriate drug for therapy of an open angle glaucoma. Discuss the mechanism of action & adverse effects of the chosen drug. 01+02+02
3. Give how α_2 agonists analogue is helpful in the therapy of open angle glaucoma. Also give the name of pro-drug of adrenaline used in open angle glaucoma. 01+01



RAN-2606000102015002/2406000102010502

IInd M.B.B.S. Examination August - 2026

Pharmacology, (Paper - II) Set 1

Time: 3 Hours]

[Total Marks: 100

સૂચના : / Instructions

- (1) ઉપરોક્ત દર્શાવેલ વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fill up strictly the above details on your answer book

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Student's Signature

Section I

Q.1. MCQs

1×20 = 20

- All are drug of choice for hook worm infestation except
 - Albendazole
 - Pyrental pamoate
 - Levamisol
 - Praziquantal
- A patient of chronic liver disease develops drowsiness & flapping tremor (asterixis). The preferred drug commonly used to reduce ammonia level is
 - Neomycine
 - Lactulose
 - Ursodeoxycholic acid
 - Framycetin
- The standard intensive phase regimen for a newly diagnosed drug-sensitive pulmonary tuberculosis patient under the National TB Elimination Programme (NTEP) consists of
 - HR for 2 months
 - HRZE for 2 months
 - HRE for 4 months
 - HRZ for 6 months
- Direct thrombin inhibitor is
 - Rivaroxaban
 - Bivalirudin
 - Fondaparinux
 - Both (a) & (b)
- Indications of primaquine therapy is
 - Plasmodium vivax infection
 - G-6-PD deficiency
 - Pregnancy
 - 4 month old infant
- Antihypertensive contraindicated in pregnancy is
 - Labetalol
 - Hydralazine
 - Enalapril
 - Methyldopa
- Which of the following is a class III anti-arrhythmic drug is
 - Adenosine
 - Pindolol
 - Amiodarone
 - Propranolol

8. Drug causing highest increase in serum high density lipoprotein (HDL) is
 - a) Ezetimibe
 - b) Rosuvastatin
 - c) Niacin
 - d) Gemfibrozil
9. Of the following drugs causing vasodilatation, which of the following is a arteriolar venodilator?
 - a) Nifedipine
 - b) Minoxidil
 - c) Hydralazine
 - d) Nitroprusside
10. The following antithyroid drug is relatively safe in 1st trimester of pregnancy
 - a) Methimazole
 - b) Propylthiouracil
 - c) Carbimazole
 - d) Iodine
11. The following anti-tubercular drug acts by inhibiting mycobacterium ATP synthase inhibition
 - a) Levofloxacin
 - b) Ethambutol
 - c) Bidaquiline
 - d) Linezolid
12. Drug used in oral candidiasis is
 - a) Terbinafine
 - b) Nystatin
 - c) Gresiofulvin
 - d) Clotrimazole
13. Benzodiazepine antagonist is
 - a) Methadone
 - b) Flumazenil
 - c) Naloxone
 - d) Disulfram
14. All are the drugs used in management of postpartum hemorrhage except
 - a) Ergometrine
 - b) Oxytocin
 - c) Misoprostal
 - d) Magnesium sulfate
15. Which of the following is potassium channel opener
 - a) Nimodipine
 - b) Nicorandil
 - c) Nitrendipine
 - d) Nifedipine
16. Drug of choice in megaloblastic anaemia is
 - a) Vitamin B6
 - b) Vitamin B12
 - c) Vitamin B1
 - d) Folic acid
17. ACE Inhibitors are not indicated in patients with the following conditions except
 - a) Bilateral renal artery stenosis
 - b) Hyperkalaemia
 - c) Pregnancy
 - d) Congestive heart failure
18. Antidote for Heparin toxicity is
 - a) Vitamin K
 - b) Naltrexone
 - c) Protamine sulfate
 - d) Pralidoxime
19. The following laxatives are used in therapy of irritable bowel syndrome (IBS) except
 - a) Lubiprostone
 - b) Bisacodyl
 - c) Linaclotide
 - d) Tenapanor

20. In women of child bearing age, clomiphene citrate produces the following effects except
- Hot flushes
 - Ovulation
 - Decreased FSH and LH secretion
 - Polycystic ovaries

Section II

- Q.2. Answer in short (Any five)** **3×5 = 15**
- What is antibiotic stewardship program (ASP)? Based on WHO-AWaRe classification of antibiotics, discuss the importance of judicious usage of antimicrobial agents.
 - Give the mechanism of action of methotrexate as anticancer drug.
 - Discuss the mechanism of action, use's & adverse effects of phosphodiesterase-5 inhibitors.
 - Enumerate the various therapeutic uses of Albendazole.
 - Discuss the responsibilities of patient & doctor in shared decision making ?
 - Write a short note on Sodium-glucose cotransport-2 inhibitors (SGLT-2 inhibitors).
- Q.3. Write answers in detail (Any three)** **5×3 = 15**
- Name the drugs used as emergency contraception. Give their mechanism of action & adverse effects. What precautions are to be taken while using emergency contraceptive as an OTC drug?
 - Discuss the regimen for prevention of transmission of HIV to the unborn child in a pregnant patient with HIV.
 - Give the drug therapy of inflammatory bowel disease.
 - Discuss the drug therapy in hypertensive emergencies & urgencies with special emphasis on mechanism of action, adverse reaction & preferred route of drug administration .
- Q.4. Case Based Question** **10**
- An 84-year-old man presented to medicine OPD with swelling over ankle & feet. He also had puffiness around his eyes. He complaint of breathing difficulties & severe cough while lying down. Patient was highly incapacitated, not being able to walk a few steps at a time without shortness of breath. On examination, enlarged liver below his costal margin was found. X-Ray also confirmed cardiomegaly. A diagnosis of moderate heart failure due to dilated cardiomyopathy was made. Patient was prescribed Tablet Furosemide 40 mg once in the morning, Tablet Ramipril 2.5 mg twice in a day. Based on the case history,
- Answer the following -**
- Give the different classes of drugs prescribed for a patient with a diagnosis of CHF. Explain the different therapeutic objectives of treating a patient with chronic heart failure? **02+02**
 - Give the therapeutic advantage of Ramipril or its congener in a patient of CHF? Also name one other drugs known to modify the progress of disease in a patients of CHF. Specify its mechanism of action. **02+02**
 - What adverse effects are to be expected from uses of furosemide? **02**

Section III

Q.5. Answer in short [Any five]

3×5 = 15

- Write the advantages of LMW (low molecular weight) heparin over UFH (unfractionated heparin).
- Classify thyroid inhibitors. Discuss the role of propranolol in thyrotoxicosis.
- Write a short note on stimulant purgatives. Discuss the drawbacks of purgative abuse.
- Give the adverse effects of aminoglycoside antimicrobial agents.
- Enumerate the various drugs useful in topical therapy of acne vulgaris.
- Give the mechanism of action, therapeutic usage & toxicity of vancomycin.

Q.6. Answer in detail [Any three]

5×3 = 15

- What is acute iron poisoning? Give the manifestations and drug therapy of acute iron poisoning.
- Give the classification & therapeutic uses of anti-platelet drugs. Give the mechanism of action of one anti-platelet drug of your choice.
- Classify various drugs used for management of peptic ulcer. Give the mechanism of action, adverse effects & drug interactions of proton pump inhibitors.
- Give the various therapeutic indication of corticosteroids. Justify their uses based on pharmacological actions. Discuss means to prevent hypothalamic-pituitary-adrenal axis suppression in patients on corticosteroid therapy.

Q.7. Case based question

10

A 40 years old obese patient, presented with symptoms of weakness, lethargy, increased thirst & frequent night awakening for urination. On investigations her fasting blood serum was found to be 187 mg/dl with HbA1C: 8.5%, PPBG: 280 mg/dl. This was repeated several times with similar results. The patient was advised a diet and exercise program. After 6 months, patient was able to decrease weight only from 127 to 118 kg. There was no significant change in fasting serum glucose levels. A fasting cholesterol level was 290 mg/dl, with a low-density lipoprotein (LDL) 190 mg/dl, HDL: 30 mg/dl. The renal and hepatic functions were within normal limits. Patient's blood pressure was also within normal limits. Patient was diagnosed with NIDDM & was put on appropriate therapy.

Answer the following Questions

- Enumerate the available drugs (both oral as well as parenteral) used for the management of NIDDM. 03
- Give the indications for switching a patient on oral hypoglycaemic drugs to insulin therapy. 02
- Which oral antidiabetic agent would you prefer in a newly diagnosed case of NIDDM? Justify your choice of selection of the drug. Describe the mechanism of action and adverse effect of your chosen drug. 01+01+02
- Name one recently approved drug helpful in weight loss for such obese patients with NIDDM. 01