

MBBS SECOND PROFESSIONAL EXAMINATION 2007
PHARMACOLOGY AND THERAPEUTICS (MCQs)
MODEL PAPER

Total No. of MCQs 65
Total Marks: 65

Time Allowed: 1 hour 5 min

Table of Specification: MCQ No. 1 - 5.

1. **Plasma protein binding of drugs:**
 - a. Prolongs the half life of drugs
 - b. Increases the bio-availability of drugs
 - c. Increases the renal clearance of drugs
 - d. Increases the volume of distribution of drugs
 - e. Favors early onset of action of drugs**Key: a**

2. **Absorption of drugs from gastrointestinal tract occurs more:**
 - a. In ionized state
 - b. With larger molecular size
 - c. In case of tertiary amines
 - d. With greater water solubility
 - e. With longer disintegration time**Key: c**

3. **By knowing the half-life of a drug we can find out:**
 - a. The dose of the drug
 - b. Bio-availability of the drug
 - c. Time to reach the steady state
 - d. Rate of absorption
 - e. The pattern of their distribution in body**Key: c**

4. **Which of the following conjugation reactions occurs inside the microsomes of hepatocytes?**
 - a. Sulfate conjugation
 - b. Acetylation
 - c. Glycine conjugation
 - d. Glucuronide conjugation
 - e. Glutathione conjugation**Key: d**

5. **Therapeutic index of a drug:**
 - a. Is obtained by dividing ED50 by LD50
 - b. Is greater if a drug is more toxic
 - c. Is high if therapeutic widow is narrow
 - d. Is low if the drug has more tissue binding
 - e. Is low if the slope of its dose-response curve is steep**Key: e**

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Table of Specification: MCQ No. 6 - 9.

6. Which of the following drugs should be administered to reverse the bradycardia caused by vagal stimulation?

- a. Adrenaline
- b. Dopamine
- c. Dobutamine
- d. Atropine
- e. Theophylline

Key: d

7. Which of the following antimuscarinic drugs shows relative selectivity for M1 receptors?

- a. Tropicamide
- b. Ipratropium
- c. Glycopyrrolate
- d. Hyoscine
- e. Pirenzepine

Key: e

8. Which of the following actions of epinephrine is mediated through Beta-1 receptors?

- a. Release of renin from JG cells of kidneys
- b. Glycogenolysis in liver
- c. Negative feed-back at presynaptic adrenergic nerve endings
- d. Bronchodilatation
- e. Relaxation of intestinal smooth muscle

Key: a

9. Pralidoxime is administered to patients suffering from poisoning with Organophosphorous compounds to:

- a. Reduce the cholinergic effects
- b. Reactivate cholinesterase enzyme
- c. Counter to central effects of acetylcholine
- d. Prevent the respiratory embarrassment
- e. Stimulate production of fresh cholinesterase

Key: b

Table of Specification: MCQ No. 10 -16

10. A patient of Parkinson's disease is taking a combination of levodopa and carbidopa. The role of carbidopa is to block:

- a. Reuptake of dopamine in substantia nigra.
- b. DOPA decarboxylase in the brain.
- c. DOPA decarboxylase in peripheral tissues
- d. monoamine oxidase in the neostriatum.
- e. COMT in peripheral tissues.

Key: c

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11. A patient is suffering from Absence-seizure concomitant with generalized tonic-clonic seizures. Which of the following drugs is effective against both the disorders?
- Phenytoin
 - Ethosuximide
 - Phenobarbitone
 - Diazepam
 - Valproate sodium
- Key: e
12. Which of the following endocrine abnormality may be produced by D-2 receptor blockade caused by Phenothiazines?
- Hypothyroidism
 - Hyperprolactinaemia
 - Iatrogenic Cushing's Syndrome
 - Diabetes mellitus
 - Diabetes insipidus
- Key: b
13. The risk of the following adverse reaction increases when selective-serotonin reuptake inhibitors are used in combination with mono amine oxidase inhibitors:
- Antimuscarinic effects
 - Alpha adrenoceptor blocking effect
 - Reduced sexual function
 - Serotonin syndrome
 - Cardiac arrhythmias
- Key: d
14. Which of the following benzodiazepines is converted into its active metabolite by gastric hydrochloric acid?
- Clorazepate
 - Alprazolam
 - Bromazepam
 - Oxazepam
 - Diazepam
- Key: a
15. In a person addicted to Morphine, tolerance will not develop to:
- Euphoria
 - Miosis
 - Analgesic effect
 - Respiratory depressant effect
 - Sedative effect
- Key: b

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16. Induction of general anaesthesia with Thiopentone sodium should not be undertaken in a patient suffering from:
- Congestive cardiac failure
 - Diabetes mellitus
 - Hypertension
 - Bronchial asthma
 - Acute intermittent porphyria
- Key: e

Table of Specification: MCQ No. 17 -21.

17. Which of the following Antipyretic is preferred for relief of fever in a child of four years age?

- Naproxen
- Aspirin
- Diclofenac
- Paracetamol
- Piroxicam

Key: d

18. Use of highly selective COX-2 Inhibitors like Rofecoxib may be associated with increased risk of:

- Gastrointestinal bleeding
- Nephropathy
- Cardiovascular events
- Hepatotoxicity
- Reduced platelet count

Key: c

19. Aspirin is not used in young children for antipyretic effect, because it may be associated with:

- Salicylism
- Hypoprothrombinemia
- Renal impairment
- Metabolic acidosis
- Reye's syndrome

Key: e

20. A disease modifying drug used in rheumatoid arthritis that also chelates copper is:

- Penicillamine
- Aurothiomalate
- Methotrexate
- Sulfasalazine
- Etanercept

Key: a

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21. Colchicine is helpful in management of acute gout by:
- Increasing urinary excretion of uric acid
 - Reduced production of uric acid
 - Exerting strong analgesic effect
 - Inhibiting migration of leukocytes into the inflamed joints
 - Inhibiting cyclooxygenase enzyme in the inflamed joints.

Key: d

Table of Specification: MCQ No. 22 -26.

22. Which one of the following drugs exhibits its anti-hypertensive effect primarily by reduction of peripheral resistance?

- Diltiazem
- Clonidine
- Verapamil
- Amlodipine
- Atenolol

Key: d

23. A cardioselective beta receptor blocker that also possesses intrinsic sympathomimetic activity (partial agonist activity) and membrane stabilizing action (local anaesthetic effect) is:

- Esmolol
- Acebutolol
- Carvedilol
- Sotalol
- Timolol

Key: b

24. A calcium channel blocker preferably used in subarachnoid haemorrhage is:

- Verapamil
- Nifedipine
- Diltiazem
- Amlodipine
- Nimodipine

Key: e

25. Which of the following drugs is preferred for treatment of digoxin-induced cardiac arrhythmias?

- Procainamide
- Phenytoin
- D-Sotalol
- Amiodarone
- Flecainide

Key: b

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26. **Glyceryl trinitrate relieves stable (atherosclerotic) angina by:**
- a. Producing cGMP-dependent vasodilatation
 - b. Reducing preload of the heart
 - c. Reducing afterload on the heart
 - d. Causing redistribution of blood in coronaries
 - e. All of the above
- Key: e**

Table of Specification: MCQ No. 27 - 29.

27. **A diuretic that can lead to alkalinization of urine is:**
- a. Acetazolamide
 - b. Bendrofluazide
 - c. Frusemide
 - d. Amiloride
 - e. Ammonium chloride
- Key: a**

28. **A diuretic that produces its action mainly by acting on the proximal part of distal convoluted tubules is:**
- a. Ethacrynic acid
 - b. Triamterene
 - c. Hydroxychlorothiazide
 - d. Spironolactone
 - e. Mannitol
- Key: c**

29. **A diuretic that acts by inhibiting Na/K/2Cl symport in the renal tubules is:**
- a. Bendrofluazide
 - b. Frusemide
 - c. Amiloride
 - d. Acetazolamide
 - e. Spironolactone
- Key: b**

Table of Specification: MCQ No. 30 - 32.

30. **Warfarin:**
- a. Is generally administered by intramuscular injection
 - b. Has a quick onset of action
 - c. Inactivates factor XIIa
 - d. Is antagonized by Vitamin K-1
 - e. Activated partial thromboplastin time is used to regulate its dosage
- Key: d**

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31. A drug that inhibits ADP-induced platelet aggregation is:

- a. Abciximab
- b. Aspirin
- c. Eptifibatide
- d. Clopidorel
- e. Tirofiban

Key: d

32. A drug suitable for treatment of familial hypretriglyceridemia :

- a. Gemfibrozil
- b. Simvastatin
- c. Colestipol
- d. Cholestyramine
- e. Atorvastatin

Key: a

Table of Specification: MCQ No. 33 -36.

33. While traveling by car to a hill-station, a child suffered from nausea and vomiting. In order to prevent these symptoms to occur during return journey you would prescribe:

- a. Atropine
- b. Promethazine
- c. Ondensatron
- d. Diphenoxylate
- e. Chlorpromazine

Key: b

34. Acid rebound phenomenon is likely to occur with the use of:

- a. Magnesium trisilicate
- b. Aluminum hydroxide
- c. Sodium bicarbonate
- d. Aluminum phosphate
- e. Sucralfate

Key: c

35. A drug that causes purgation by local irritation of small intestine is:

- a. Senna
- b. Bisacodyl
- c. Sorbitol
- d. Castor oil
- e. Aloes

Key: d

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36. Loperamide and Diphenoxylate:

- a. Are very effective in controlling the diarrhoea of severe ulcerative colitis.
- b. Are preferred for control of diarrhoeas caused by infections
- c. Are primarily used in treatment of diarrhoeas in infants
- d. Should be preferred over ORS therapy in childhood diarrhoeas
- e. May produce substantial improvement in diarrhoea of irritable bowel syndrome

Key: e

Table of Specification: MCQ No. 37 - 40.

37. The following drug will produce bronchodilatation in an asthmatic patient:

- a. Ipratropium
- b. Montelukast
- c. Beclomethasone
- d. Nedochromil
- e. Cromolyn Sodium

Key: a

38. Theophylline is helpful in bronchial asthma by:

- a. Inhibiting phosphodiesterase
- b. Blocking Adenosine receptors
- c. Reversing fatigue of diaphragm
- d. Inhibiting antigen-induced release of histamine
- e. All of the above

Key: e

39. A patient presenting with acute episode of bronchial asthma should be preferably treated with:

- a. Oral administration of LTD-4 receptor blockers
- b. Administration of Mast Cell Stabilizing drugs by aerosol
- c. Administration of long acting Beta-2 receptor agonists by inhalation
- d. Administration of short acting Beta-2 receptor agonists by inhalation
- e. Oral administration of slow-release tablets of theophylline

Key: d

40. An opium-alkaloid solely used as a cough suppressant is:

- a. Codeine
- b. Thebaine
- c. Noscapine
- d. Papaverine
- e. Dextromethorphan

Key: c

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Table of Specification: MCQ No. 41 - 46.

41. A drug that acts by inhibiting bacterial topoisomerase is:

- a. Co-trimoxazole
- b. Doxycycline
- c. Ofloxacin
- d. Amikacin
- e. Clindamycin

Key: c

42. Which of the following cephalosporins is more likely to be associated with hypoprothrombinemia:

- a. Ceftriaxone
- b. Cefoperazone
- c. Ceftazidime
- d. Ceftizoxime
- e. Cefaclor

Key: b

43. Which of the following drugs may be used in regimens for eradication of *H. pylori*?

- a. Clarithromycin
- b. Tobramycin
- c. Ticarcillin
- d. Ciprofloxacin
- e. Albendazole

Key: a

44. Sulphamethoxazole is combined with trimethoprim in co-trimoxazole because the two drugs:

- a. Have matching volumes of distribution
- b. Have similar plasma protein binding
- c. Have matching half lives
- d. Inhibit different metabolic pathways in the organisms
- e. Are excreted through the same route

Key: c

45. The aminoglycosides are not effective against anaerobic bacteria because:

- a. These organisms do not have binding sites for aminoglycosides
- b. These drugs fail to enter into anaerobes
- c. These drugs are actively effluxed from anaerobes
- d. These drugs are inactivated under anaerobic conditions
- e. The anaerobes produce inactivating enzymes against aminoglycosides

Key: b

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46. The tetracyclines are not prescribed to the growing children because they:

- a. May cause pseudomembranous enterocolitis
- b. May cause photosensitivity
- c. May cause severe vertigo
- d. May impair bony growth
- e. May cause Fanconi-like syndrome

Key: d

Table of Specification: MCQ No. 47 -49.

47. In the chemotherapy of tuberculosis:

- a. Ethambutol is the most quickly acting sterilizer.
- b. Pyrazinamide is active at neutral pH
- c. Streptomycin acts better against intracellular bacilli
- d. Rifabutin causes more drug interactions than rifampin
- e. Neurotoxicity of isoniazid is reversed by pyridoxine

Key: e

48. Which of the following antimalarial drugs will eradicate the relapses in a patient of benign tertian malaria?

- a. Primaquine
- b. Mefloquine
- c. Artemether
- d. Pyremethamine
- e. Sulfadoxine

Key: a

49. The drug of choice for treatment of *Taenia saginata* infestation is:

- a. Mebendazole
- b. Pyrantel pamoate
- c. Albendazole
- d. Praziquantel
- e. Ivermectin

Key: d

Table of Specification: MCQ No. 50 - 51.

50. Which one of the following antiviral agents is used against infections caused by cytomegalovirus?

- a. Ganciclovir
- b. Amantadine
- c. Adefovir
- d. Ribavirin
- e. Idoxuridine

Key: a

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51. A drug that is administered orally for treatment of infections by dermatophytes is:
- Nystatin
 - Griseofulvin
 - Clotrimazole
 - Miconazole
 - Tolnaftate
- Key: b

Table of Specification: MCQ No. 52 - 55.

52. Which of the following antineoplastic drugs is an antimetabolite:
- Carmustine
 - Busulphan
 - Cisplatin
 - Fluorouracil
 - Vincristine
- Key: d

53. The main mechanism of antineoplastic action of the anthracycline antibiotics is:
- Binding with tubulin of the cancer cells
 - Inhibition of folic acid metabolism in cancer cells
 - Alkylation of reactive radicals in cancer cells
 - Intercalation of the DNA molecule in cancer cells
 - Disruption of the ribosomes in cancer cells
- Key: d

54. Among the alkaloids of *Vinca rosea*:
- Vinblastine cause more neurotoxicity than vincristine
 - Vincristine causes more bone marrow depression than vinblastine
 - Vincristine is more useful in childhood leukemias
 - Vinblastine has mechanism of action different than vincristine
 - The clinical uses of the two alkaloids are practically the same.
- Key: c

55. Which of the following drugs used in chemotherapy of breast cancer acts by inhibiting the Estrogen receptor?
- Diethylstilbestrol
 - Tamoxifen
 - Anastrozole
 - Paclitaxel
 - Cyclophosphamide
- Key: b

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Table of Specification: MCQ No. 56 - 62

56. **Dexamethasone:**

- a. Is less potent than prednisolone
- b. Also has mineralocorticoid activity
- c. Improves glucose tolerance
- d. Is a naturally occurring glucocorticoid
- e. Suppresses hypothalamo-hypophysio-adrenal axis

Key: e

57. Which of the following Insulin preparations has the longest duration of action?

- a. Insulin aspart
- b. NPH Insulin
- c. Insulin Zinc Suspension Lente
- d. Glargine
- e. Glulisine

Key: d

58. Which of the following Insulin secretagogues is not a Sulfonylurea in its chemical structure?

- a. Chlorpropamide
- b. Nateglinide
- c. Glibenclamide
- d. Glipizide
- e. Glimepiride

Key: b

59. Which of the following antidiabetic drugs acts by binding with PPAR- γ receptor?

- a. Metformin
- b. Acarbose
- c. Repaglinide
- d. Pioglitazone
- e. Gliclazide

Key: d

60. The mechanism of antithyroid action of Propylthiouracil is to:

- a. Inhibit iodination of the tyrosil residues
- b. Inhibit coupling of the iodotyrosil residues
- c. Inhibit peroxidase enzyme in thyroid gland
- d. Reduce the circulating Thyroid-stimulating immunoglobulins
- e. All of the above

Key: e

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61. The most serious adverse reaction that may occur with the use of Thionamide antithyroid drugs is:
- Agranulocytosis
 - Joint pains
 - Paresthesias
 - Alopecia
 - Skin rashes

Key: a

62. The radio-active Iodine ¹³¹I:
- Exerts antithyroid action by emitting gamma radiation
 - Is most suitable for young adult male patients
 - Is safe for use during pregnancy
 - May cause delayed hypothyroidism
 - Has a rapid onset of action

Key: d

Table of Specification: MCQ No. 63- 65

63. A taxi driver comes to the clinic with complaints of runny nose, effused eyes, fever and malaise. He wishes to continue his work while taking treatment for these symptoms. Which one of the following anti histamines would be most suitable for him?
- Chlorpheniramine
 - Diphenhydramine
 - Fexofenadine
 - Meclizine
 - Hydroxyzine

Key: c

64. A drug that is administered systemically for the treatment of acute glaucoma is:
- Timolol
 - Acetazolamide
 - Physostigmine
 - Demecarium
 - Latanoprost

Key: b

65. Which of the following chelators has been correctly paired with the metal for whose poisoning it is clinically used?
- | | | |
|-----------------------------|-----|---------|
| a. Edetate Calcium Disodium | --- | Mercury |
| b. Dimercaprol | --- | Arsenic |
| c. Succimer | --- | Gold |
| d. Penicillamine | --- | Silver |
| e. Deferoxamine | --- | Lead |

Key: b