

M.B.B.S. SECOND PROFESSIONAL EXAMINATION, JANUARY/ FEBRUARY- 2018
PHARMACOLOGY
PAPER - FIRST

[Time allotted: Three hours]

[Max Marks: 40]

Q. 1. Multiple Choice questions (attempt all MCQs in the allotted first 15 minutes in the OMR sheet) (½ x 16= 08)

SET - D

1. Which of the following drugs is used for the prophylaxis of migraine but **not** for angina pectoris?
 - a. Verapamil
 - b. Diltiazem
 - c. Flunarizine
 - d. Amlodipine
2. Most specific drug for the treatment of peptic ulcer caused due to chronic use of NSAIDs is:
 - a. Sucralfate
 - b. Pirenzepine
 - c. Omeprazole
 - d. Ranitidine
3. Allopurinol is most likely to potentiate the pharmacological action of:
 - a. 5-Fluorouracil
 - b. Bleomycin
 - c. 6-Mercaptopurine
 - d. Doxorubicin
4. Alkalinisation of urine hastens the excretion of:
 - a. Weakly basic drugs
 - b. Weakly acidic drugs
 - c. Strong electrolytes
 - d. Non-polar drugs
5. Transdermal drug delivery systems offer the following advantages **except**:
 - a. Produce high peak plasma concentration of the drug
 - b. Produce smooth and non-fluctuating plasma concentration of the drug
 - c. Minimise interindividual variation in the achieved plasma drug concentration
 - d. Undergo very little first pass metabolism of the drug
6. Dobutamine acts on :
 - a. D-1
 - b. D-2
 - c. Beta-1
 - d. Beta-2
7. Rate limiting step in catecholamine synthesis is:
 - a. Phenylalanine hydroxylase
 - b. Tyrosine hydroxylase
 - c. Dopa-decarboxylase
 - d. Dopamine hydroxylase
8. Sildenafil is a:
 - a. Beta blocker
 - b. PDE-5 Inhibitor
 - c. Alfa blocker
 - d. PDE-6 Inhibitor
9. Which is true for Sumatriptan?
 - a. 5-HT_{1D/1B} receptor antagonist
 - b. Dilates cranial blood vessels
 - c. Suppress neurogenic inflammation
 - d. Causes nausea
10. A 51-year old woman with symptoms of major depression also has narrow angle glaucoma. Which antidepressant should be avoided?
 - a. Amitriptyline
 - b. Sertraline
 - c. Bupropion
 - d. Mirtazepine
11. Opioid receptors are:
 - a. Nuclear receptors
 - b. G-protein coupled receptors
 - c. Receptors with enzyme activity
 - d. Chloride channels
12. Peripheral adverse effects of levodopa, including nausea, hypotension, and cardiac arrhythmias, can be diminished by including which of the following drugs in the therapy?
 - a. Ropinirole
 - b. Bromocriptine
 - c. Carbidopa
 - d. Entacapone
13. A 35-year old man presents with symptoms of repeated hand washing. He realizes that his behaviour is interfering in his daily activities. Which drug would you prefer?
 - a. Imipramine
 - b. Fluvoxamine
 - c. Lithium
 - d. Tranylcypromine
14. Lithium interferes with the synthesis of:
 - a. Inositol
 - b. Glutamate
 - c. Arginine
 - d. Proline
15. Anti-psychotic with maximum anticholinergic side effects:
 - a. Olanzapine
 - b. Fluoxetine
 - c. Thioridazine
 - d. Haloperidol
16. Torsades de pointes has been reported with use of which of these.
 - a. Levocetirizine
 - b. Fexofenadine
 - c. Astemizole
 - d. Loratidine

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Note: Attempt all questions.
Draw suitable diagrams (wherever necessary)

Q. 2. Give reasons why:

(1 x 4 = 04)

- a. SSRIs are preferred over TCA in depression
- b. Oximes are used in organophosphate poisoning
- c. Inhaled corticosteroids are used in bronchial asthma
- d. Dopamine is used in shock

Q. 3. Problem based question:

(1 x 4 = 04)

Ram Singh, 65 years of age, diagnosed case of Parkinsonism, complained of difficulty in walking, slowing of movement of limbs and inability to cope with his routine work. His complaint ameliorated on treatment with L-dopa, but also having nausea and vomiting. On suggestion of friend he started taking vitamin supplements. His earlier symptoms started reappearing.

- a. What is the cause of recurrence of symptoms? What measure could have been taken to rectify this problem?
- b. What drugs can be used for treatment of nausea and vomiting?
- c. Name other drugs which can be used to treat Parkinsonism.
- d. Why does on and off phenomenon occur. How will you treat it?

Q. 4. Write short notes on:

(2 x 4 = 08)

- a. Pre-anaesthetic medication
- b. Alfa blockers in Benign Prostatic Hypertrophy
- c. Pharmacovigilance
- d. Second gas effect

Q. 5. (i) Classify anti-epileptics. Discuss the mechanism of action, therapeutic uses & adverse effects of sodium valproate.

(1+3 = 04)

(ii) Classify beta-blockers & explain the therapeutic uses & adverse effects of propranolol.

(1+3 = 04)

Q. 6. Write in brief about:

(2 x 4 = 08)

- a. Proton pump inhibitors
- b. Ketamine
- c. Sublingual route of drug administration
- d. Ondansetron

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Q. 1. Multiple Choice questions (attempt all MCQs in the allotted first 15 minutes in the OMR sheet) (½ x 16= 08)

SET - B

1. Longest acting insulin is:
 - a. Global zinc suspension
 - b. Insulin-zinc suspension
 - c. Neutral protamine-zinc insulin
 - d. Protamine-zinc insulin
2. A patient suffering from AIDS is on zidovudine, lamivudine and indinavir therapy. He develops pulmonary tuberculosis for which treatment is started. Which of the following should be avoided in him?
 - a. INH
 - b. Pyrazinamide
 - c. Ethambutol
 - d. Rifampicin
3. Which antibiotic acts by inhibiting protein synthesis?
 - a. Cefotetan
 - b. Oxacillin
 - c. Doxycycline
 - d. Ciprofloxacin
4. The antibiotic known to cause "Red Man" syndrome is:
 - a. Clindamycin
 - b. Cefadroxil
 - c. Vancomycin
 - d. Azithromycin
5. Drug of choice for treatment of malaria due to *Plasmodium vivax* in a 25 year old pregnant female is:
 - a. Chloroquine
 - b. Primaquine
 - c. Sulfadoxine-pyrimethamine
 - d. Quinine
6. Angiotensin converting enzyme inhibitors are useful in congestive heart failure as:
 - a. First choice drugs unless contraindicated
 - b. An alternative to diuretics
 - c. A substitute for digitalis
 - d. Adjuncts only in resistant cases
7. Propranolol is contra-indicated in a patient of angina pectoris who is already receiving:
 - a. Nifedipine
 - b. Aspirin
 - c. Verapamil
 - d. Isosorbide mono-nitrate
8. Treatment of choice in hypertension with diabetes mellitus is:
 - a. β -blockers
 - b. Thiazides
 - c. ACE inhibitors
 - d. Calcium channel blockers
9. A drug that binds to and inhibits Gp IIb/IIIa glycoprotein and is responsible for platelet anti aggregatory effects:
 - a. Clopidogrel
 - b. Enoxaparin
 - c. Fondaparinux
 - d. Tirofiban
10. A patient has iron deficiency anaemia. The agent that can be used to improve the absorption of iron is:
 - a. Antacid
 - b. Tetracycline
 - c. Ascorbic acid
 - d. Phosphates
11. Which is an orally acting ovulation inducing drug?
 - a. Clomiphene
 - b. Danazol
 - c. Mifepristone
 - d. Menotropin
12. An old woman is required to receive 4 cycles of cancer chemotherapy. After her first cycle of chemotherapy, she developed chemotherapy induced thrombocytopenia. Then in the next cycle, it would be appropriate to give this patient:
 - a. Darbopoietin alpha
 - b. Filgrastim (G-CSF)
 - c. Iron dextran
 - d. Oprelvekin (IL-1)
13. Which of the following drugs is effective against pseudomonas infection?
 - a. Ampicillin
 - b. Ceftriaxone
 - c. Colistin
 - d. Cefixime
14. Finasteride acts by blocking:
 - a. α -receptors
 - b. 5- α reductase enzyme
 - c. Androgen receptors
 - d. β -receptors
15. Receptor for which of the following is present intra-cellularly?
 - a. Insulin
 - b. Corticosteroid
 - c. Epinephrine
 - d. Glucagon
16. Which of the following drugs promotes the release endogenous insulin?
 - a. Acarbose
 - b. Glipizide
 - c. Metformin
 - d. Pioglitazone

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Note: Attempt all questions.
Draw suitable diagrams (wherever necessary)

Q. 2. Give reasons why:

(1 x 4 = 04)

- a. Bigunides are used in obese diabetics patients.
- b. Primaquine should be avoided in G6PD deficiency.
- c. Sildenafil is cautiously used in patients with concurrent cardiac disease.
- d. LMWH is preferred over unfractionated heparin for anticoagulant therapy.

Q. 3. Problem based question:

(1 x 4 = 04)

A 30 year old male complains of pain and burning micturition and is being treated for UTI (urinary tract infection). After the treatment was initiated, he complained of pain in heel and was diagnosed to have Achilles tendonitis.

- a. What is the most likely drug used for the treatment of this patient? What is the mechanism of action of this drug?
- b. Name the drugs used for the treatment of UTI. What general advices will you give to the patient?
- c. What is the spectrum of this class of drugs?
- d. Enumerate urinary antiseptics and urinary analgesics.

Q. 4. Write short notes on:

(2 x 4 = 08)

- a. Tocolytics
- b. Secnidazole
- c. Fluconazole
- d. Vinca Alkaloids

Q. 5. (i) Classify anti-hypertensive drugs. Write the mechanism of action and adverse effect of ACE Inhibitors.

(2+1+1 = 04)

(ii) Classify quinolones antibiotics. Describe mechanism of action, adverse effects of Ciprofloxacin.

(2+1+1 = 04)

Q. 6. Write in brief about:

(2 x 4 = 08)

- a. Antiplatelet drugs.
- b. SERMs
- c. Warfarin
- d. Atorvastatin