

2406000102010501-S
(SUPPLEMENTARY EXAM) FEBRUARY-2025
SECOND MBBS
PHARMACOLOGY (PAPER - I) (NEW) (OMR)

[Time: As Per Schedule]

[Max. Marks: 100]

Instructions:

1. Fill up strictly the following details on your answer book
 - a. Name of the Examination : **SECOND MBBS**
 - b. Name of the Subject : **PHARMACOLOGY (PAPER - I) (NEW) (OMR)**
 - c. Subject Code No : **2406000102010501-S**
2. Sketch neat and labelled diagram wherever necessary.
3. Figures to the right indicate full marks of the question.
4. All questions are compulsory.
5. Frist 20 mins has been allotted for MCQs.
6. Answers must be brief, precise and to the point.

Seat No.

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Student's Signature

Section I

Q.1 Multiple choice questions (MCQs)

1 × 20

(Each Question Carries one mark and there is no negative marking)

1. Which of the following agent binds to GABA receptor Chloride channel complex?
 - a) Ethanol
 - b) Alphaxolon
 - c) Zolpidem
 - d) Buspirone

2. Alpha-receptor stimulation includes all of the following effects EXCEPT:
 - a) Relaxation of gastrointestinal smooth muscle
 - b) Contraction of bladder base, uterus and prostate
 - c) Stimulation of insulin secretion
 - d) Stimulation of platelet aggregation

3. Which of the following agents enhances the bioavailability of Levodopa in patients with Parkinson's disease:
- a) Amantadine
 - b) Ropinirole
 - c) Entacapone
 - d) Selegiline
4. Mechanism of action of Mianserin:
- a) Inhibits alpha-adrenergic, H₁, and some types of serotonin receptors.
 - b) Inhibits alpha-adrenergic, H₂, and some types of serotonin receptors.
 - c) Inhibits beta-adrenergic, H₁, and some types of serotonin receptors.
 - d) Inhibits alpha- adrenergic and H₁ receptors.
5. Omalizumab is indicated for which of the following conditions:
- a) Multiple myeloma
 - b) Psoriasis
 - c) Bronchial Asthma
 - d) Rheumatoid Arthritis
6. Which of the following drug undergoes Hoffman's elimination?
- a) Atracurium
 - b) Pancurinium
 - c) Mivacurium
 - d) Vecuronium
7. Which of the following is an example of physiological antagonism?
- a) Heparin-protamine
 - b) Prostacycline-thromboxene
 - c) Adrenaline-phenoxybenzamine
 - d) Physostigmine-Acetylcholine
8. Following are uses of anticholinesterases. EXCEPT.
- a) Alzheimer's disease
 - b) Myasthenia gravis
 - c) Organophosphorus poisoning
 - d) Glaucoma

9. A 3-year-old child was undergoing squint surgery, initial heart rate was 140 beats per min. after anaesthesia and start of surgery heart rate dropped to 40 beats/min. what should be the next step?
- a) Stop surgery b) Decrease plane of anaesthesia
c) Inj glycopyrrolate d) Inj atropine
10. Which of the following does not potentiate the action of neuromuscular blocker?
- a) Hypothermia b) pH changes
c) Halothane d) Hyperkalaemia
11. After which phase of clinical trial a new drug is marketed?
- a) Phase I b) Phase II
c) Phase III d) Phase IV
12. For pre-anesthetic medication all drugs can be used EXCEPT.
- a) Diazepam b) Glycopyrrolate
c) Metoclopramide d) Phenobarbitone
13. Which of the following drug is effective in painful tingling sensation due to diabetic neuropathy:
- a) Aspirin b) Ibuprofen
c) Gabapentin d) Tramadol
14. Drug of choice for myoclonic seizures is:
- a) Valproic acid b) Phenytoin
c) Ethosuximide d) Carbamazepine
15. Which of the following agent is used for acute iron poisoning?
- a) Penicillamine b) Deferasirox
c) Desferioxamine d) Dimercaprol

16. Alkaline diuresis is done for treatment of poisoning due to:

- a) Barbiturates
- b) Morphine
- c) Amphetamine
- d) Ethyl alcohol

17. Which of the following statement is wrong about Buspirone?

- a) It doesn't produce withdrawal symptoms on stoppage.
- b) It doesn't produce sedation
- c) It has anticonvulsant action
- d) It has no muscle relaxant activity

18. Inverse agonist has

- a) Affinity but no intrinsic activity
- b) Affinity and submaximal intrinsic activity
- c) Affinity but intrinsic activity with minus sign
- d) Both affinity and maximal intrinsic activity

19. A young patient is being treated for myasthenia gravis, which requires frequent adjustment of the optimal dose of Neostigmine. The patient is challenged with Edrophonium to evaluate the effectiveness of the cholinesterase inhibition. Optimal dosing will be indicated by

- a) An increase in muscle strength
- b) A decrease in muscle strength
- c) No change in muscle strength
- d) Initially increase and later on decrease in muscle strength

20. A 3 year old child presented to OPD with the symptoms of influenza. Aspirin is contraindicated in this patient because of increased risk of

- a) Gastric bleeding
- b) Thrombocytopenia
- c) Fanconi syndrome
- d) Reye's syndrome

Q.2 Answer in Brief [any Five]:

3 × 5 = 15

- a. Explain the first order kinetics and zero order kinetics with suitable diagram and examples.
- b. Compare and contrast depolarizing and non-depolarizing neuromuscular blockers.
- c. Write advantages of atypical antipsychotics. Explain in brief about extrapyramidal side effects of antipsychotics.
- d. Write a note on triptans.
- e. Give rationale behind: (A) Tamsulosin in benign prostate hypertrophy (B) Colchicine in acute gout.
- f. Classify DMARDs. Explain the role of methotrexate in rheumatic arthritis.

Q.3 Write answer in details [any three]:

5 × 3 = 15

- a. Describe adverse effects, contraindications, and therapeutic uses of β - blockers.
- b. Classify anticholinergic drugs. Describe the treatment of smoking cessation.
- c. Classify antiepileptic drugs. Describe adverse effects of phenytoin and valproic acid. Write down the treatment of febrile convulsion.
- d. Describe various factors that modifying drug actions.

Q.4 Answer the following based on given case scenario.

10 × 1 = 10

A 40-year-old patient known case of moderate chronic asthma with frequent exacerbation, brought to the emergency department with severe breathlessness. Patient took MDI Salbutamol at home, but it did not relieve the symptoms. Patient was on MDI FORACORT (Formoterol + Budesonide) BD from last 6 months. Patients' current diagnosis is status asthmaticus. Answer the following.

- a. Classify anti-asthmatic drugs Describe the drug therapy for status asthmaticus with its pharmacological basis.
- b. What is the rationale behind the Formoterol + Budesonide combination?
- c. Write down adverse effects of inhaled corticosteroids and how it can be minimized?

Section II

Q.5 Answer in Brief [any Five]:

3 × 5 = 15

1. Write a note on drug antagonism.
2. Which are the distinctive features of second generation anti-histaminic? Explain the role of cinnarizine in vertigo.
3. Describe pharmacotherapy of methanol poisoning.
4. Which are specific antidotes of acute anti-cholinesterase poisoning? Write the rationale of using these drugs.

5. Describe pharmacological basis of aspirin in myocardial infarction and preeclampsia. Enumerate its contraindications.
6. Why local anesthetics should not use in inflamed tissue? Comment on addition of adrenaline to local anesthetics.

Q.6 Write answer in details [any three]:

5 × 3 = 15

- a. Describe adverse effects, contraindications/precautions, and therapeutic uses of morphine.
- b. List sympathomimetic drugs. Describe therapeutic uses of adrenalin with pharmacological basis.
- c. Classify antidepressant drugs. Describe adverse effects of TCAs. List the uses of SSRIs.
- d. Define Pharmacovigilance and adverse drug reactions. Explain in brief about drug withdrawal reactions and teratogenicity with appropriate examples.

Q.7 Answer the following based on given case scenario.

10 × 1 = 10

A 62-year female patient came to OPD with complaint of tremors in hands that also occurs during rest, difficulty walking, problems with coordination and difficulty speaking for 3 months. Patient diagnosed with Parkinson's disease. Patient prescribed with combination of levodopa 100 mg + carbidopa 10 mg tablets once a day. Answer the following:

- A. Classify the drug's use for Parkinson's diseases
- B. Describe in detail about various adverse effects of levodopa therapy
- C. Describe benefits and drawbacks of levodopa and carbidopa combination
- D. Which drugs produce Parkinson's like symptoms? Which drugs are given in treatment of drug induced Parkinsonism.

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 2. Sketch neat and labelled diagram wherever necessary.
 3. Figures to the right indicate full marks of the question.
 4. All questions are compulsory.
 5. Answers should be precise and to the point.
 6. First 20 mins have been allotted to solve multiple choice questions.

Seat No:

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Student's Signature

SECTION - I

Q.1 Multiple choice questions (MCQs)

1 × 20 = 20

(Each question carries one mark and there is no negative marking.)

1. Which amongst the following antimicrobials exhibits a long post antibiotic effect?
 - a) Fluorouinolones
 - b) Macrolide
 - c) Beta-lactams
 - d) Oxazolidinones
2. Tadalafil should not be used in
 - a) Diabetics
 - b) Patient on vasodilator therapy
 - c) Pulmonary hypertension
 - d) Erectile dysfunction
3. Which of the following pair is correct for heavy metals and their chelating agents?
 - a) Iron – BAL
 - b) Mercury-Calcium disodium edetate
 - c) Copper – d-penicillamine
 - d) Arsenic – Deferasirox

4. Which of the following is pure bradycardia drug?
 a) Verapamil b) Acebutolol c) Ivabradine d) Amiodarone
5. A 30-year-old pregnant woman has a history of rheumatoid arthritis which has been Managed successfully with NSAIDS. However, she has recently visited her general practitioner complaining of burning epigastric pain worsened by food intake. Which of the following antiulcer drug is most likely contraindicated in this patient:
 a) Famotidine b) Omeprazole
 c) Misoprostol d) None of the above
6. Which of the following purgative increases the faecal bulk due to their water absorbing and retaining capacity?
 a) Methyl cellulose b) Lactulose
 c) Liquid paraffin d) Dioctyl sodium sulfosuccinate
7. Ciprofloxacin should not be given to an asthmatic using theophylline because:
 a) Ciprofloxacin decreases effects of theophylline
 b) Theophylline induces metabolism of ciprofloxacin
 c) Ciprofloxacin inhibits theophylline metabolism
 d) Theophylline inhibits ciprofloxacin metabolism
8. In post MI patient which dose of aspirin is recommended?
 a) 20 – 50 mg/day b) 75 – 150 mg/day
 c) 500 – 1000 mg/day d) 3000 – 4000 mg/day
9. Drug of choice for bleeding oesophageal varices is:
 a) Ethanolamine oleate b) Octreotide
 c) propranolol d) phytonadione
10. In which of the following disease is corticosteroids indicated?
 a) Osteoporosis b) peptic ulcer
 c) Neurocysticercosis d) kala-azar
11. Methotrexate is used for the management of all of these conditions except:
 a) Rheumatoid arthritis b) Psoriasis
 c) Leukopenia d) Organ transplantation

12. A 17-year-old girl had been taking a drug for treatment of acne for the last 2 years, which has led to pigmentation. Which drug could it be?
- a) Doxycycline
b) Azithromycine
c) Minocycline
d) Chlorpromazine
13. Drug of choice for syphilis is:
- a) Penicillin b) Rifampicin c) Tetracycline d) Erythromycin
14. Which of the following antibiotic is used in the treatment of Clostridium difficile associated diarrhoea?
- a) Ciprofloxacin b) Metronidazole
c) Piperacillin d) Clindamycin
15. Which of the following is valid indication for intramuscular iron therapy?
- a) Pregnancy b) Postpartum period
c) Emergency surgery d) Oral iron intolerance
16. Tirofiban is:
- a) Monoclonal antibody b) Antiplatelet drug
c) Anti-inflammatory drug d) Antianginal drug
17. Which of the following is the correct match about vitamin and its preferred use?
- a) Retinol- Alcoholic neuritis
b) Cholecalciferol- Psoriasis
c) Niacin- Hyperlipidaemia
d) Ascorbic acid- Peripheral neuropathy
18. Ulipristal is
- a) A synthetic progesterone
b) An antiprogestrone
c) A selective progesterone receptors modulator
d) A selective estrogen receptor modulator
19. Following drugs can cause gynaecomastia, except
- a) Cimetidine b) Spironolactone c) Finasteride d) Fluconazole
20. Which of the following SERM useful for treatment of osteoporosis?
- a) Estradiol b) Bisphosphonate c) Strontium d) Raloxifene

Q.2 Answer in Brief [any Five]:

3×5=15

- a) Explain chemoprophylaxis against specific organisms by giving suitable examples.
- b) Classify calcium channel blockers (CCBs). Why is nimodipine prescribed in subarachnoid haemorrhage?
- c) Compare and contrast: Metoclopramide and Domperidone.
- d) What is "relapse" in relation to malaria? Write drug therapy for relapsing malaria.
- e) Give reason:
 - A. Chloroquine is useful in hepatic amoebiasis but not in intestinal amoebiasis.
 - B. Albendazole is preferred over praziquantel for the treatment of neurocysticercosis.
- f) Explain two commonly employed "insulin regimens for diabetes" with suitable diagram

Q.3 Write answer in details [any three]:

5×3=15

- a) Classify drugs used in Congestive Cardiac Failure (CCF). Write current status of digoxin in therapy of CCF. Point out any two drugs along with its pharmacological basis which arrest/reverse disease progression for the same?
- b) Describe various complications and interactions of high ceiling diuretics. Elaborate role of spironolactone in cirrhotic oedema.
- c) Classify thyroid inhibitors. Describe mechanism of action, two important adverse effects and indications of Propylthiouracil.
- d) Enumerate Thrombolytics. Describe its mechanism and role in pharmacotherapy of acute myocardial infarction (MI). Write contraindications of thrombolytic therapy.

Q.4 Answer the following based on given case scenario.

10×1=10

A 45-year-old male patient comes with complains of polyuria and weight gain (90 kg). His FBS and PP2BS were 140 mg/dl and 200mg/dl respectively. while HbA1C was 6.7%. He was diagnosed as Type II Diabetes mellitus (DM). he was advised diet, exercise and other life style modifications. Answer the following questions regarding management of this case.

- a) Which oral antidiabetic drug will you prescribe for this patient? Why? 2
- b) Explain mechanism of action of drug which you have prescribed. 2
- c) Write treatment strategy of Type II Diabetes Mellitus. (Explain with flowchart) 2
- d) If above mentioned patient skipped his meal after taking antidiabetic drug, what could happen to him? and how will you manage this condition? 2
- e) How dapagliflozin and sitagliptin are beneficial in DM. 2

SECTION - II

Q.5 Answer in Brief [any Five]:

3×5=15

- a) Write short note on "Integrase Inhibitors".
- b) Classify anti-leprotic drugs. Describe pharmacotherapy of multibacillary leprosy as per NLEP guideline.
- c) Write pharmacological basis for:
 - i. Thiazides in diabetes insipidus
 - ii. Dopamine in cardiogenic shock
- d) Name two "Nitric Oxide (NO) donor". Describe therapeutic uses of any one of them.
- e) Elaborate use of Probiotics in diarrhoea.
- f) Compare and contrast: Oxytocin and Ergometrine.

Q.6 Write answer in details [any three]:

5×3=15

- a) Enlist various drugs from different categories for Hypertension. Write merits and demerits of any two 1st line antihypertensive drugs. Outline pharmacotherapy of Hypertensive emergency.
- b) What is "Hormone Replacement Therapy (HRT)"? Describe HRT in post-menopausal women.
- c) Enlist Fluoroquinolones. Outline Pharmacotherapy of Urinary tract infection.
- d) Classify extended spectrum penicillins. Describe mechanism of action, adverse effects and therapeutic uses of ampicillin/amoxicillin.

Q.7 Answer the following based on given case scenario.

10×1=10

A 35-year-old male presented to TB and Chest department with complaints of low-grade fever, weight loss, productive cough, night sweats and fatigue since more than 2 weeks. Patient's current weight is 56 kg. He is diagnosed as drug sensitive tuberculosis. The patient resides with his wife and two children (aged 7 and 4 years respectively). He had history of alcohol for 6 years.

- a) Which TB regimen should be started in this patient? Write one important adverse effect of each drug which you mentioned in this regimen. 2+2
- b) Is prophylaxis required in this case? To whom and why is it required? 2
- c) What is Tuberculosis preventive treatment (TPT)? Write two TPT regimens used under NTEP. 1+3
