All India Institute of Medical Sciences, Bhubaneswar

2nd Professional MBBS Supplementary Examination 2020 (Old Batch)

Time: 3 hours **Pharmacology (Paper II)** **Maximum marks:75**

Instructions: Answer all the questions. Draw neat labelled diagram wherever necessary. The subparts of a question must be answered together. Use separate answer sheets for Section 'A' & 'B'

SECTION - A

1. A 26-year-old lady with HIV infection is on combination therapy of zidovudine, lamivudine, and nevirapine and was eventually diagnosed with pulmonary tuberculosis. Antitubercular therapy comprising of isonazid, rifampicin, pyrazinamide and ethambutol was started. Ten days later the patient developed nausea and vomiting and severe jaundice. **(3+3+2+2=10)**
   a) Comment on the prescription.
   b) What remedial action should be undertaken?
   c) Name two adverse effects of rifampicin.
   d) Name two adverse effects of zidovudine.

2. **Discuss the pharmacotherapy of:** **(2x5=10)**
   a) Status asthmaticus
   b) Diabetic ketoacidosis

3. **Choose the right drug (one drug) for the following conditions.** **(4x2½=10)**
   a) 35-year-old man suffering from *Plasmodium vivax* malaria
   b) A 12-year-old boy having pharyngitis
   c) A 30-year-old lady with choriocarcinoma
   d) A 40-year-old man newly diagnosed with diabetes mellitus

4. **Write clinical significance of:** **(4x2½=10)**
   a) Using rifampicin in treatment of leprosy.
   b) Using minimum inhibitory concentration (MIC) values for surveillance of antibiotic resistance.
   c) Using "Mesna" during chemotherapy with cyclophosphamide
   d) Combining cilastatin with imipenem.

Please turn over

SECTION - B

1. Explain why/how: **(5x3=15)**

a) Propylthiouracil is preferred over carbimazole during pregnancy.

b) Gentamicin is administered in single dose rather than divided doses.

c) Liposomal Amphotericin B is preferred over other formulations of amphotericin B

d) Azithromycin is usually given as a short course (1-3 days) and not longer.

e) Teriparatide (recombinant parathyroid hormone) can prevent osteoporosis.

2. Explain with diagram: **(1x5=5)**

a) Mechanism of action of antifungal drugs acting through cell membrane and cell wall.

3. Write brief note on: **(4x 2½=10)**

a) Metformin – mechanism of action and two contraindications

b) Cyclosporine – two therapeutic uses and two important adverse effects

c) Vincristine – Mechanism of action and two important adverse effects

d) Oral rehydration solution – Composition and method of use

4. Give examples: **(5x1=5)**

a) Two antifungal agents used in management of cryptococcal meningitis.

b) One drug regimen used for *H. pylori* eradication.

c) Two drugs used for management of gastroesophageal reflux.

d) Two indications of first generation cephalosporins.

e) Two uses of calcium EDTA.

(5x3=15)

All India Institute of Medical Sciences, Bhubaneswar

2nd Professional MBBS Supplementary Examination 2020 (Old Batch)

Time: 3 hours **Pharmacology (Paper I)** **Maximum marks:75**

Instructions: Answer all the questions. Draw neat labelled diagram wherever necessary. The subparts of a question must be answered together. Use separate answer sheets for Section 'A' & 'B'

SECTION - A

1. A 43-year-old male hypertensive developed myocardial infarction and was admitted to the hospital. In addition to ST elevation, ECG also showed right bundle branch block. Patient was given oxygen, oral clopidogrel, low dose aspirin and metoprolol, I.V. glyceryl trinitrate and I.V. heparin and reteplase. One hour later the patient developed severe bradycardia, dysponea and blood pressure started falling. **(3+3+2+2=10)**

   a. Comment on what could have happened?
   b. What remedial steps can be undertaken?
   c. Name two adverse effects of glyceryl trinitrate.
   d. Name two non-cardiologic conditions where beta blockers are indicated.

(2x5=10)

2. **Discuss pharmacotherapy of**
   a. Status epilepticus
   b. Acute congestive glaucoma

(4x2½=10)

3. **Choose the right drug (one drug) for the following conditions with reason**
   a. A 56-year post-menopausal woman with mild to moderate hypertension
   b. A 12-year-old boy having absence seizure
   c. A 35-year-old female suffering from schizophrenia with predominant negative symptoms
   d. A 25-year-old male with pheochromocytoma

(4x2½=10)

4. **Write clinical significance of**
   a. Prolonged apnoea following succinylcholine administration.
   b. Using loop diuretics in renal failure
   c. "On-off" phenomenon in patient with parkinsonism who is on levodopa therapy
   d. Volume of distribution of a drug

Please turn over

Time: 3 Hrs 2nd Professiona

Instructions: Answer all the qu
question must be answered toge

1. A 55

SECTION - B

1. Explain why/how **(5x3=15)**

a. Hypokalemia enhances digitalis toxicity.

b. Beta blockers are avoided in patients with bronchial asthma.

c. Promethazine is useful in management of motion sickness.

d. Adrenaline should be avoided along with local anesthetic agents for ring block.

e. ACE inhibitors cause dry cough in some patients.

2. Explain with diagram **(1x5=5)**

a. Mechanism of action of loop diuretics.

3. Write brief note on **(4x2½=10)**

a. Morphine– mechanism of action and therapeutic uses
b. Lithium – therapeutic uses and adverse effects
c. Haloperidol – therapeutic uses and adverse effects
d. Neostigmine- mechanism of action and therapeutic uses

4. Give examples **(5x1=5)**

a. Two drugs which are used for the management of hypertriglyceridemia

b. Two drugs used for acute episode of migraine.

c. Two drugs which can be used to manage stage B heart failure.

d. Two drugs that can be used in prophylaxis of stable angina.

e. Two drugs which undergo saturation kinetics in high dose.

All India Institute of Medical Sciences, Bhubaneswar

2nd Professional MBBS Supplementary Examination 2020 (Batch 2017)

Time: 3 Hrs **Pharmacology (Paper–II)** **Max. Marks: 100**

Instructions: Answer all the questions. Draw neat labelled diagram wherever necessary. The subparts of a question must be answered together. Use separate answer sheets for Section 'A' & 'B'

SECTION - A

1. A 55-year-old male patient is brought to casualty, with a history of vomiting, polydipsia and mental confusion. On examination, BP 94/60 mmHg, pulse 138/min. dehydration of moderate degree and fruity smelling breath. History reveals that he is on insulin therapy for the last 3 years with good glycemic control. As reported by his family members, he was engaged in his father's rituals, skipped 2 meals and insulin doses on the day before this episode. Investigation reveals random blood sugar 525 mg/dl, presence of ketone bodies in urine. **(3+3+1+3=10)**

   Answer the following in the present scenario.

   a) Diagnose the case. What could be the reason of this emergency episode? Explain with diagram.
   b) Write down the line of management with rational basis.
   c) If there is acute insulin resistance, what would be the management approach?
   d) How it is differentiated from non- ketotic hyperglycaemic coma with respect to the metabolic, clinical and treatment parameters?

2. What are the advantages of Enoxaparin over unfractionated heparin? What are the therapeutic indications of Enoxaparin? **(2½ + 2½=5)**

3. Name two parenteral iron preparations. In which conditions parenteral iron therapy is indicated? What is the role of recombinant human erythropoietin in anaemia of chronic renal failure? **(1+2+2=5)**

4. Why inhaled medications are preferred in the treatment of asthma? Outline the treatment of status asthmaticus. **(2+3=5)**

5. Compare and contrast between **(2½+2½=5)**
   a) Oxytocin versus methyl ergonovine for induction of labor.
   b) Domperidone versus metoclopramide as antiemetic

6. A 55-year old post-menopausal woman developed breast carcinoma and underwent a radical mastectomy. As the tumour was ER+ve, she was put on tamoxifen 20 mg daily. On her check-up visit one year later, ultrasound examination of the uterus revealed thickening of the endometrium. **(2½ + 2½=5)**

   a) What is the cause and implication endometrial thickening?
   b) What should be a future therapeutic plan related to tamoxifen therapy?

7. Why omeprazole is administered orally in enteric coated form in empty stomach? Why the high-dose of omeprazole is not recommended in the elderly for long-term therapy? What is the role of omeprazole in gastroesophageal reflux disease (GERD)? **(1+2+2=5)**

8. Choose the right drug for the following conditions with rationale: **(2½ + 2½=5)**
   a) To avoid straining at stools for a patient who has undergone surgery for a hernia recently.
   b) To prevent cancer chemotherapy-induced nausea and vomiting.

9. Tablet Atorvastatin 20 mg was prescribed to a patient with dyslipidemia. After 2 months, his total cholesterol and LDL level were improved but triglyceride level was not controlled. The physician added tablet Gemfibrozil 300 mg and after one month the patient presented with generalised muscle pain, weakness and tenderness in calf muscles. **(2+1+2 = 5)**
   a) Why the patient developed muscle related symptoms?
   b) What investigation should be done?
   c) How will you manage this patient?

Time: 3 Hrs

SECTION - B

1. A 25-year-old girl presented with episodes of high fever preceded by chills, shivering along with headache, nausea and weakness for last 4 days. Blood smear showed presence of intraerythrocytic *P. vivax* and was treated with standard regimen of chloroquine and primaquine. She recovered but returned back on 7th day with a similar episode when blood smear was again found positive for *P. vivax*. **(3+1+2+3+1=10)**
   a) What is the standard chloroquine and primaquine based regimen for *P. vivax*?
   b) What additional test should have been done before prescribing primaquine?
   c) What is the most likely cause of recurrence of fever and parasitemia?
   d) How should the second episode be treated?
   e) Should primaquine medication be continued or stopped?

2. A 45-year old patient was admitted with fever, severe pain in right upper abdomen, vomiting, weakness and soft tender enlargement of liver below the costal margin. Ultrasound revealed a solitary abscess and stool was positive for amoebic cyst. A diagnosis of amoebic liver abscess was made and the patient was treated with Metronidazole 500 mg thrice daily for 7 days. **(2+1+2=5)**
   a) Was the choice of drug, dose and the route correct?
   b) Should metronidazole therapy be extended or a repeat course given?
   c) Should the patient be given any other anitamoebic drug in addition to or following metronidazole?

3. A dental surgeon got exposed to a 30-years old female patient's blood and through a piercing needle injury on the finger. On enquiry, the patient confessed that one year back she had tested HIV positive, but not taking any antiretroviral drug as she is asymptomatic. **(2½ + 2½=5)**
   a) What advice/treatment you should suggest to the dental surgeon?
   b) What advice/treatment you should suggest to the patient?

4. Explain the basis of combining **(2½+2½=5)**
   a) Piperacillin with tazobactam
   b) Sulfadoxine with pyrimethamine

5. Choose the right drug/drug regimen for the following clinical conditions with justification: **(2½ + 2½=5)**
   a) Prophylaxis for surgical site infection in a patient with a road traffic injury.
   b) A 35-year old patient diagnosed as Rifampicin resistant tuberculosis.

6. a) Differentiate between type1 and type 2 lepra reaction. Write the management approach explaining the basis. **(3)**
   b) Why rifampicin is given once in a month for treatment of leprosy explain. **(2)**

7. Explain why: **(2½ + 2½=5)**
   a) Anti-D immunoglobulin is given in Rh (-) women who has delivered a Rh (+) baby.
   b) Penicillamine is given in Wilson's disease.

8. a) Choose and prepare the antibiotic schedule for a 25-year-old lady in the first trimester of pregnancy who shows VDRL positive. **(2.5)**
   b) Why some of the antibiotics induce pseudomembranous enterocolitis. Mention the line of management. **(2.5)**

9. a. Enumerate two natural products of plant origin and mention their therapeutic status as anti-cancer agents. **(2.5)**
   b. Why allopurinol increases toxicity of 6- mercaptopurine if co-administered. How you will prevent it? **(2.5)**

All India Institute of Medical Sciences, Bhubaneswar
2nd Professional MBBS Supplementary Examination 2020 (Batch 2017)

Time: 3 Hrs **Pharmacology (Paper–I)** **Max. Marks: 100**

Instructions: Answer all the questions. Draw neat labelled diagram wherever necessary. The subparts of a question must be answered together. Use separate answer sheets for Section 'A' & 'B'

SECTION - A

1. A 67-year-old man is brought to the casualty with complaints of severe chest pain, breathlessness, sweating and giddiness. On examination, BP is 150/96mm Hg, ECG reveals ST segment elevation. He is diagnosed with acute myocardial infarction. **(2+2+2+2+2=10)**

a) What are the immediate measures needed before starting drug therapy?
b) What drug is given for relief of pain and explain its beneficial role?
c) What drugs are given for coronary reperfusion?
d) What drugs are advised in post MI period and explain their rationality?
e) Explain the beneficial role of non pharmacological therapy in post-MI period

2. Select the most appropriate drug in the following scenario with justification. **(2½ + 2½=5)**
a) A 65-year-old man requires a fundoscopic examination. Justify
b) A 35-year primigravida with 28 weeks of pregnancy develops hypertension (BP 156/94mmgHg).

3. Discuss the clinical significance of the following phenomena: : **(2½ + 2½=5)**
a) Propranolol undergoes high first pass metabolism
b) Down-regulation and up-regulation of β receptors.

4. a) Why Adrenaline (Not Noradrenaline) is given in Anaphylactic shock? **(2+3=5)**
b) Why Dopamine preferred over Noradrenaline in cardiogenic shock?

5. Discuss the role of ACE inhibitors and aldosterone antagonists in Cronic CHF. **(2½ + 2½=5)**

6. A patient suffering from cirrhosis with portal hypertension was on Spironolactone and developed significant bradycardia. His electrolyte report shows serum potassium level 6.5 mEq/L. Why spironolactone was prescribed and what is the reason behind deranged serum potassium level? **(2½ + 2½=5)**

7. Explain with a suitable diagram: **(5)**
Role of different anti-glaucoma drugs that affect aqueous secretion in wide angle glaucoma.

8. Explain the following terms and their clinical significance with suitable examples. **(2½ + 2½=5)**
a) First-pass metabolism
b) Redistribution

9. A farmer was brought to the hospital with convulsions, sweating and laboured breathing. On examination, he was semiconscious and had pinpoint pupils, excessive salivation, pungent odour from mouth and shallow respiration with ronchi all over the lungs. The blood pressure was also low. **(1+3+1=5)**
a) What is the probable diagnosis?
b) What is the line of management?
c) Name two other drugs causing pinpoint pupil.

Time: 3 H

Answer all t

SECTION – B

1. A 72-year-old male patient comes to neurology OPD with history of tremor, bradykinesia and has signs of cogwheel rigidity. He was on treatment with levodopa- carbidopa combination with clinical improvements and after four years, he comes for the reappearance of such symptoms.

(2+2+2+2+2=10)

a) What is the reason for reappearance of symptoms?
b) What is the line of management of this condition?
c) Mention the adverse effects that are found more with levodopa and carbidopa combination than levodopa alone?
d) He was prescribed with pyridoxine (40mg/day) as supplementation to improve the symptoms. (rational/irrational? Justify)
e) What is the therapeutic status of Ropinirole in Parkinsons disease?

2. A patient was hospitalized for fracture reduction and surgical repair of severe muscle and soft tissue trauma at multiple sites following a road traffic accident. Anaesthesist injected IV succinylcholine for endotracheal intubation. Suddenly patient developed prolonged apnea.

(2½ + 2½=5)

a) Explain the reason for apnea.
b) Suggest an alternative agent preferred in this condition with justification.

3. Choose right drugs for the following conditions with rationale: **(2½ + 2½=5)**

a) A 19-year old girl suffering from an acute attack of a migraine and not responding to ergotamine.
b) A 45 years old man diagnosed as refractory schizophrenia.

4. What are the differences between Tramadol and Morphine? Why the analgesic action of Tramadol is only partially reversed by Naloxone **(2½ + 2½=5)**

5. A 30-year old female patient presented with acute onset sharp, stabbing pain on one side of the face which originated at the angle of the jaw. She was diagnosed as suffering from trigeminal neuralgia and prescribed drug X. On the third day, she presented with rashes and photosensitivity. She also complained of dizziness, vertigo and diplopia. Her haemogram revealed leucopenia. **(1+2+2=5)**

a) Identify the drug X.
b) Why did the patient develop such adverse drug reactions?
c) How will you treat the patient?

6. Enumerate the advantages of one drug over the other: **(2½ + 2½=5)**

a) Advantages of Vecuronium over d-Tubocurarine in routine surgical procedures.
b) Advantages of Fexofenadine over Promethazine in allergic conditions.

7. A girl child aged 8 years is brought to OPD with a history of momentary loss of consciousness, patient apparently freezes, stares in one direction, no fall but minimal bilateral blinking of eyelids. The whole episode lasts for 1-2 minutes. Parents complain that such episode occurs frequently almost every day. EEG was advised and diagnosed as absence seizure. **(4+1=5)**

a. Mention the suitable anti-epileptics used for the treatment of this condition explaining their rationality.
b. Does the child need life long treatment? (yes/no). Justify.

8. A lower limb operative procedure has been planned under spinal anaesthesia. The expected duration of the surgical procedure is 2 hours. Which local anaesthetic drug should be used for spinal anaesthesia in this case and why? What are the common complications of spinal anaesthesia and how to prevent those?

(1+4=5)

9. Justify: **(2½ + 2½=5)**

a) Adrenaline is combined with local anaesthetics.
b) Allopurinol is preferred over probenecid in patients with chronic gout with renal insufficiency

All India Institute of Medical Sciences, Bhubaneswar
2nd Professional MBBS Final Examination 2020 (BATCH-2018)

Time: 3 Hrs **PHARMACOLOGY (PAPER–II)** **Max. Marks: 100**

Answer all the questions. Draw diagram wherever necessary. Use separate answer sheets for both Section-A & B.

SECTION - A

1. A 40-year-old woman presented with neck pain, fever, rigor, cough and generalised body ache, palpitation, sweats, dizziness, hand tremor, headache, vomiting, shortness of breath, fatigue and generalised numbness. One month back she was diagnosed with subacute thyroiditis and was on ibuprofen. The patient gave a history of 4 kg weight loss during the last week. Initial tests showed an undetectable (<0.1 µIU/L) thyroid-stimulating hormone (TSH), FT4 = 9.3 ng/dl, T3 = 548 ng/dl. **(1+1+5+3)**

   a) What is the probable diagnosis of the present condition?
   b) What additional investigations can be done?
   c) How will you manage the present condition of the patient?
   d) What is role of ibuprofen in subacute thyroiditis? What other drugs could have been prescribed for subacute thyroiditis?

2. Choose the right drug for the following conditions with rationale: **(2½+2½)**
   a) To avoid straining at stools for a patient who has undergone surgery for a hernia recently.
   b) To prevent cancer chemotherapy-induced nausea and vomiting.

3. Why low dose aspirin is used as anti-platelet drugs, not high dose? What are the therapeutic uses of antiplatelet drugs? **(2½+2½)**

4. What is the role of immunosuppressants in organ transplantation? What are the common adverse drug reactions of immunosuppressants? **(3+2)**

5. A 55-year old post-menopausal woman developed breast carcinoma and underwent a radical mastectomy. As the tumour was ER+ve, she was put on tamoxifen 20 mg daily. On her check-up visit one year later, ultrasound examination of the uterus revealed thickening of the endometrium. **(2½+2½)**
   a) What is the cause and implication endometrial thickening?
   b) What should be a future therapeutic plan related to tamoxifen therapy?

6. A 60-year old woman was on glimepiride. One day she observed religious fasting and took her morning dose on time. Few hours later, she was admitted to the emergency department in an unconscious state.
   a) What is the probable reason of unconsciousness and how to establish the diagnosis?
   b) How will you manage the patient?
   c) What subsequent advice may be given to the patient? **(1+2+2)**

7. Outline the treatment regimen (with dose and duration) each for the following conditions: **(2½+2½)**

   a) Diabetic ketoacidosis
   b) Iron deficiency Anemia

8. Explain the mechanism of action of different drugs used in the treatment of Peptic ulcer with the help of a diagram. **(5)**

9. Choose a right chelating agent for the following conditions with reason: **(2½+2½)**
   a) Iron overload in Thalassemic patient
   b) Lead Poisoning

PART B (50 Marks)

1. A 29-years old woman came to the OPD with the complain of urinary urgency, burning sensation during urination, moderate fever and suprapubic discomfort, for last two days. She revealed that she is having this kind of symptom for fourth time in that year and had taken treatment locally. Physical examination revealed; suprapubic tenderness and body temperature is 101^0 F. A provisional diagnosis of acute urinary tract infection was done. She was advised urine routine/microscopic examination and culture sensitivity. **(3+3+2+2)**

   a) Which antimicrobial agent shall be most suitable for her?
   b) What drug should she take to relieve urinary symptoms?
   c) Does she require any prophylactic antimicrobial? Why?
   d) What advice will you give her in addition to drug therapy?

2. A 26-year-old lady with HIV infection is on combination therapy of tenofovir, lamivudine, and nevirapine and was eventually diagnosed with pulmonary tuberculosis. Antitubercular therapy comprising of isonazid, rifampicin, pyrazinamide and ethambutol was started. Ten days later the patient developed nausea and vomiting and severe jaundice. She has also given history of sexual contact with a person whose HIV status is unknown. **(1+2+2)**

   a) Why the patient has developed jaundice?
   b) What remedial action should be undertaken?
   c) What advice should you give to the person who came to her contact?

3. A patient with systemic candidiasis received conventional formulation of Amphotericin B. The patient developed chill, fever, bodyache, nausea, vomiting and dyspnoea. **(2+3)**

   a) Why did the patient develop such symptoms?
   b) How will you manage the patient and prevent future complications?

4. A 45-year old patient was admitted with fever, severe pain in right upper abdomen, vomiting, weakness and soft tender enlargement of liver below the costal margin. Ultrasound revealed a solitary abscess and stool was positive for amoebic cyst. A diagnosis of amoebic liver abscess was made and the patient was treated with Metronidazole 500 mg thrice daily for 7 days.

   a) Was the choice of drug, dose and the route correct? **(2+1+2)**
   b) Should metronidazole therapy be extended or a repeat course given?
   c) Should the patient be given any other anitamoebic drug in addition to or following metronidazole?

5. Discuss the clinical significance of: **(2½+2½)**

   a) Anthracycline-induced cardiotoxicity.
   b) Ifosfamide-induced Hemorrhagic Cystitis.

6. A patient develops watery diarrhoea, fever, abdominal pain and leucocytosis in response to antibiotic therapy. *C. difficile* infection in the gut is confirmed and the physician starts treatment with Clindamycin. **(2+3)**

   a) What is the diagnosis and why did the patient develop this condition?
   b) Is the choice of Clindamycin in this situation correct? Justify your answer.

7. Explain the pharmacotherapy of the following conditions: **(2½+2½)**

   a) Lepra reaction
   b) Acute Lymphatic Filariasis

8. Explain the roles of Beta lactamase inhibitors in combating microbial infection. Explain why specific antimicrobial is combined with specific inhibitors. **(3+2)**

9. A 45 years old male patient reported before you with cough, fatigue and chest pain. He gives the history of Pulmonary TB infection one year back. He took the medicines but stopped after three months of treatment. **(3+2)**

   a) Explain the regimen of treatment (including doses and duration) for this patient.
   b) Write two important adverse effects of the drugs used.

All India Institute of Medical Sciences, Bhubaneswar

2nd Professional MBBS Final Examination 2020 (BATCH-2018)

Time: 3 Hrs **PHARMACOLOGY (PAPER–I)** **Max. Marks: 100**

Answer all the questions. Draw diagram wherever necessary. Use separate answer sheets for both Section-A & B.

SECTION – A (50 Marks)

1. A 45-year-old man with known hypertension for last 5 years, presents with sudden severe substernal pain while climbing upstairs. The pain subsided gradually after rest. He experienced similar episode of pain last week. **(2+4+4)**

   a) What is the most likely diagnosis?
   b) Suggest the treatment for the present episode with rationale.
   c) Suggest preventive therapy with justification.

2. Explain the clinical implications of enzyme induction and inhibition with examples. **(2½ + 2½)**

3. Compare and contrast the following: **(2½ + 2½)**
   a) First order vs Zero order kinetics.
   b) Cardiovascular effects of adrenaline and noradrenaline.

4. Explain with a diagram: Autonomic innervation and receptor types in the iris. Mention different drug classes used for the treatment of glaucoma. **(2+3)**

5. Outline the pharmacological basis of the use of Atropine and pralidoxime in organophosphorus poisoning. **(2½ + 2½)**

6. Enumerate five important uses of beta-adrenergic blockers and their adverse effects and contraindications. **(5)**

7. Choose the right drug for the following conditions with rationale: **(2½ + 2½)**
   a) A 45-year old man diagnosed with benign hypertrophy of prostrate.
   b) A 35-year old man developed drug-induced *Torsades de pointes*.

8. A 50-year-old hypertensive man with irregular drug treatment is admitted in the emergency department with blood pressure of 164/120 mm Hg. with sudden loss of unconsciousness. Prepare a flow chart for management of severe hypertension in this case. **(5)**

9. Discuss the role of Sacubitril-Valsatran in the management of congestive heart failure. **(5)**

SECTION B (50 Marks)

1. A 42-years woman is complaining of progressive morning stiffness and pain in the small joints of the hands since last 4 weeks. She complained of joint pain despite ongoing therapy with Ibuprofen. **(2+2+6)**
   a) What is the most likely diagnosis?
   b) What investigations may be done to confirm the diagnosis?
   c) Outline the pharmacological management of this condition.

2. Choose a skeletal muscle relaxant for the following conditions. Justify your answer. **(2½+2½)**
   a) Short surgical procedure.
   b) Spastic cerebral palsy.

3. A 21-year-old girl suffering of acute migraine and has been prescribed with ergotamine but there was no sign of improvement with ergotamine. What should be the next line of treatment for the case? What are the mechanism of action and adverse effects of ergotamine? **(2+3)**

4. Compare and contrast between 1st and 2nd generation H1-antihistaminic drugs. What are the therapeutic uses of antihistaminic drugs? **(2½+2½)**

5. A 42-year-old woman was diagnosed with major depression and prescribed tab. Amitriptyline 25 mg per day. The patient returned after one week and complained of no improvement. The psychiatrist advised her to continue the drug and come after one month **(2½+2½)**
   a) Why there was no improvement after one week?
   b) Comment on the decision taken by the psychiatrist.

6. A 34-year-old woman was diagnosed with resistant schizophrenia. What is the drug of choice for the condition and discuss the possible adverse effects of the drug. **(5)**

7. Define status epilepticus and discuss its pharmacological management of status epilepticus. **(5)**

8. What is the rationale of combining various drugs in balanced anaesthesia? **(5)**

9. Explain the mechanism of action of lignocaine diagrammatically. Discuss the advantages and disadvantages of combining adrenaline with Lignocaine for local anaesthetic purposes. **(2½+2½)**

All India Institute of Medical Sciences, Bhubaneswar
2nd Professional MBBS Final Examination 2019 (Old batch)

Time : 3 Hrs **Pharmacology (Paper II)** **Max. Marks: 75**

Instructions: *Answer all the questions. Draw neat labelled diagram wherever necessary. The subparts of a question must be answered together. Use separate answer sheets for Section 'A' & 'B'*

SECTION-A

1. A 58-year-old diabetic was on tablet metformin 1 g daily, tablet glimepiride 4 mg once daily. The patient was also getting vitamin B12 supplementation. He subsequently developed hypertension for which metoprolol 50 mg was prescribed **(4+2+2+2=10)**
   a) Comment on choice of antihypertensive drug for this patient.
   b) Mention two adverse effects of metformin.
   c) Mention the mechanism of action of glimepiride.
   d) Comment of the rationale of vitamin B12 supplementation.

2. **Discuss pharmacotherapy of** **(2 ×5 = 10)**
   a) Chloroquine resistant Plasmodium falciparum malaria
   b) Diabetic Ketoacidosis

3. **Choose a right drug for the following conditions with reason** **(4×2 ½ = 10)**
   a) A 30-year female suffering from Cytomegalovirus retinitis
   b) A 40-year male with heparin overdose
   c) A 50-year male suffering from inflammatory bowel disease
   d) A 38 -year-old male suffering from neurocysticercosis

4. **Write clinical significance of** **(4×2 ½ = 10)**
   a) Post antibiotic effect
   b) Filgrastim in cytotoxic drug therapy
   c) Boosted therapy in HIV infected patients
   d) Multidrug therapy for Mycobacteria

SECTION-B

5. **Explain why/how** **(5 × 3 = 15)**
   a) Parenteral cyanocobalamin in pernicious anaemia
   b) Cilstatin is combined with imipenem
   c) Oestrogens combined with progesterone in oral contraceptives
   d) Warfarin is contraindicated in pregnancy
   e) Salbutamol is preferred over adrenaline in bronchial asthma.

6. **Explain with diagram**
   a) Mechanism of action of Omeprazole **(1X5 = 5)**

7. **Write brief note on** **(4×2 ½ = 10)**
   a) Ciprofloxacin – Mechanism of action and adverse effects
   b) Metoclopramide – Mechanism of action and adverse effects
   c) Acyclovir – Therapeutic uses and adverse effects
   d) Deferoxamine – Mechanism of action and therapeutic uses

8. **Give examples** **(5 × 1 = 5)**
   a) Two tyrosine kinase inhibitors used in cancer
   b) Two drugs used for thyroid storm
   c) Two drugs for erectile dysfunction
   d) Two monoclonal antibodies against CD 20
   e) Two drugs used for type II Lepra reaction

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All India Institute of Medical Sciences, Bhubaneswar

2nd Professional MBBS Final Examination 2019 (Old batch)

Time : 3 Hrs **Pharmacology (Paper I)** **Max. Marks: 75**

Instructions: *Answer all the questions. Draw neat labelled diagram wherever necessary. The subparts of a question must be answered together. Use separate answer sheets for Section 'A' & 'B'*

Section-A

1. A 46-year-old male was administered an injection of adrenaline (1:1, 00,000) with lignocaine at base of his thumb for surgical nail removal. Later he developed severe gangrene of thumb. **(2+ 3+4+1=10)**
   a) Why has gangrene developed?
   b) How to manage this condition?
   c) Why adrenaline is given along with lignocaine?
   d) Mention two long acting local anaesthetics.

(2x5 = 10)

2. **Discuss pharmacotherapy of**
   a) Acute migraine
   b) Status epilepticus

(4×2 ½ = 10)

3. **Choose a right drug for the following conditions with reason**
   a) A 32-year-old male with Paracetamol poisoning
   b) A 25-year-old lady coming for medical termination of pregnancy of 7 weeks
   c) A 65-year-old hypertensive male suffering from benign hyperplasia of prostate
   d) A 40-year-old male suffering from obsessive-compulsive disorder.

(4×2 ½ = 10)

4. **Write clinical significance of**
   a) Microsomal enzyme induction
   b) Liposomal drug delivery system
   c) Therapeutic drug monitoring of antiepileptic drugs
   d) Restricted use of Digoxin in heart failure

Section - B

5. **Explain why/how** **(5 × 3 = 15)**

   a) Thiopentone is used as an induction agent

   b) Ethyl alcohol is used in methyl alcohol poisoning

   c) Salbutamol is preferred over adrenaline in bronchial asthma.

   d) Atropine is contraindicated in glaucoma

   e) Low dose aspirin is used as anti platelet agent.

6. **Explain with diagram only** **(1x5 = 5)**

   a) Dales vasomotor reversal

7. **Write brief note on** **(4×2 ½ = 10)**

   a) Clozapine – mechanism of action and therapeutic uses

   b) Ketamine – therapeutic indications and adverse effects

   c) Losartan – therapeutic indications and adverse effects

   d) Spironolactone – mechanism of action and adverse effects

8. **Give examples** **(5 × 1 = 5)**

   a) Two drugs which can cause extrapyramidal side effects.

   b) Two antipsychotic drugs which can cause QT prolongation.

   c) Two advantages of Fexofenadine over Promethazine in allergic disorders.

   d) Two beta blockers used in ischemic heart disease.

   e) Two antihypertensive drugs safe in pregnancy.

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All India Institute of Medical Sciences, Bhubaneswar
2nd Professional MBBS Final Examination 2019 (Batch 2017)
Time: 3 Hrs **Pharmacology (Paper–II)** **Max. Marks: 100**

Answer all the questions. Draw diagram wherever necessary. Use separate answer sheets for both Section-A & B.

Section - A

1) A 50-year-old male was admitted in the emergency and was diagnosed as status asthmaticus. He was immediately given Aminophylline 250 mg bolus i.v. injection, Hydrocortisone hemi succinate 100 mg i.v. injection, Salbutamol 2 mg I.M. injection and oxygen inhalation. **(3+2+1+4=10)**

a) Comment upon the rationality of the treatment. Justify with Reasons.

b) What precautions should be taken while administering above drugs?

c) How the patient is being managed after emergency state of Status asthmaticus is over.

d) Compare and contrast the mechanism of action and adverse effects of the Aminophylline and Salbutamol.

Write short notes/answers for the following: **(8X5=40)**

2) Explain the rationale for the following treatment strategies in Type 2 Diabetes Mellitus. **(2½ + 2½)**

a) Combination of Metformin and Glipizide

b) Switching from Oral antidiabetic drugs to Insulin

3) Explain why **(2½ + 2½)**

a) Ondansetron is preferred over Domperidone in cancer chemotherapy induced vomiting

b) Enoxaparin is preferred over unfractionated heparin for deep vein thrombosis. **(2½ + 2½)**

4) Outline the pharmacotherapy of

a) Megaloblastic anemia

b) Ulcerative Colitis

5) Discuss one treatment regimen (with dose and duration) each for the following conditions: **(2½ + 2½)**

a) Diabetic ketoacidosis

b) Peptic ulcer disease

6) Explain the site of action of different drugs used in the treatment of HIV with the help of a diagram. **(5)**

7) What are the difference in mechanism of action of GnRH agonists when used in pulsatile or continuous manner. Write their indications along with the rationale. **(3+2)**

8) Choose a right chelating agent for the following conditions with reason: **(2½ + 2½)**

a) Acute Iron poisoning

b) Lead Poisoning

9) Name Five common drugs from different therapeutic classes contraindicated in Pregnancy. Name five drugs which need dose reduction in Pediatric patients. **(2½ + 2½)**

Section - B

1) A 26-year-old man living in Bhubaneswar presented with high grade fever 105°F with chills and rigors. Patient is delirious and passed 200ml of urine in past 24 hours. Blood smear examination showed presence of intraerythrocytic Plasmodium Falciparum. **(3+3+2+2=10)**

a) What treatment regimen should be followed for this patient according to the national programme.

b) Discuss the advantages of this treatment.

c) List two adverse effects of this therapy.

d) Mention briefly the mechanism of action of the drugs used.

Write short notes/answers for the following: **(8X5=40)**

2) Discuss in brief the pharmacotherapy for the following conditions **(2½ + 2½)**

a) Hepatic amoebiasis

b) Multibacillary Leprosy

3) Compare and contrast: **(2½+2½)**

a) First generation fluoroquinolones and second generation fluoroquinolones

b) Amphotericin B and Fluconozole

4) Which drug/ regimen is preferred over the other for the respective condition? Explain with reasons. **(2½ + 2½)**

a) Ceftriaxone versus Cefotaxime in enteric fever

b) Rifampicin versus Rifabutin in Tuberculosis in HIV infected patient.

5) Explain the rationale for the following: **(2½+2½)**

a) Folinic acid rescue after a chemotherapeutic infusion for acute lymphoblastic leukemia

b) MESNA is administered with ifosfamide

6) Explain the pharmacological rationale for **(2½+2½)**

a) Combination Regimen for HIV infection

b) Combination of Amoxicillin and Clavulanic acid

7) Explain the pharmacotherapy of the following conditions: **(2½+2½)**

a) Neurocysticercosis

b) Trichomoniasis

8) Explain the roles of Vitamin D and parathyroid hormone in bone remodeling. Mention two Vitamin D analogues and their therapeutic uses. **(3+2)**

9) A 50-year-old male attends the hospital OPD with multiple, diffusely raised nodules over the face and arms for the past 1 month. The skin over the lesions is reddish and glossy. Sensation over face and arms is diminished and the ulnar nerve is thickened. The skin smear is positive for *M. leprae*.

a) Explain the regimen of treatment (including doses and duration) for this patient. **(3)**

b) Write the salient adverse effects of the drugs used. **(2)**

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All India Institute of Medical Sciences, Bhubaneswar

2nd Professional MBBS Final Examination 2019 (BATCH-2017)

Time: 3 Hrs **PHARMACOLOGY (PAPER–I)** **Max. Marks: 100**

Answer all the questions. Draw diagram wherever necessary. Use separate answer sheets for both Section-A & B.

SECTION - A

1. A 47-year-old male patient, a known case of hypertension for the past two years came to the out-patient department for a routine follow up. He was on hydrochlorothiazide 25mg for the past two years. On examination his blood pressure was 140/88 mm of Hg. There were no other unusual findings. On investigations, his two-hour post prandial blood glucose was 198mg/dL. It was decided that he would be advised lifestyle modification for his diabetes. **(6+2+2=10)**
   a) Which antihypertensive drug(s) should be preferred in this patient? Justify with reasons. Explain the mechanism of action and adverse effects expected with these drugs.
   b) Can hydrochlorothiazide be continued in this patient? Explain.
   c) A few years later, if the patient's blood pressure is poorly controlled, which antihypertensive combination should be preferred? Justify.

Write short notes/answers for the following: **(8x5=40)**

2. With the help of two examples explain the importance of pharmacogenetics in variability in drug response. **(2½ + 2½)**

3. Compare and contrast the following: **(2½ + 2½)**
   a) First order kinetics and zero order kinetics
   b) Cardiovascular effects of adrenaline and nor adrenaline

4. Explain the role of nitrates in the acute and prophylactic treatment of angina pectoris. **(2½+2½)**

5. Explain with a diagram: Autonomic innervation and receptor type in the iris. Mention two miotics and two mydriatics used therapeutically. **(3+1+1)**

6. Explain the non-cardiovascular uses of beta adrenergic blockers. **(5)**

7. Which phase of clinical trial is done after a drug is marketed? Why are such studies necessary? **(1+4)**

8. Give reasons for the following. **(2½ + 2½)**
   a) Neostigmine is preferred over physostigmine in myasthenia gravis.
   b) Distribution of drugs in all tissues is not equal.

9. A 65 year old man who was on digoxin 0.5mg/day for the last one year, attended the clinic with nausea and vomiting. On examination his BP was 110/70 mm Hg and pulse was 40/min. On investigation serum potassium was found to be normal. ECG revealed AV block. **(2+3)**
   a) Give reasons for the above effects.
   b) Outline the therapy for this patient.

SECTION B

1. A 24-year-old man diagnosed with schizophrenia, was prescribed an antipsychotic. The drug was effective in controlling the condition, however, after 10 days he developed a bent posture, a shuffling gait and failed to swing his arms while walking. **(4+4+2=10)**

   a) List out the antipsychotic drugs which could have been possibly used in this patient initially. Explain their mechanism of action.

   b) Explain why the patient developed a change in posture and gait after 10 days of the antipsychotic. What are the adverse effects of these drugs?

   c) What should be the line of management now? Justify.

Write short notes/answers for the following: **(8x5=40)**

2. Explain why a patient is administered 100% oxygen for inhalation during recovery from general anaesthesia with nitrous oxide and halothane? **(5)**

3. Choose a skeletal muscle relaxant for the following conditions. Justify your answer. **(2½+2½)**
   a) Spastic neurological disease
   b) Tracheal intubation

4. A 21-year-old complains that he develops breathlessness whenever he takes aspirin for headache. Explain this adverse effect of aspirin, with basis. Enlist the other adverse effects of aspirin. **(2+3)**

5. A 24-year-old male has been taking pheniramine tablet for his allergic rhinitis, whenever needed. He has recently got a new job as a truck driver. As part of his appointment he had to undergo a medical fitness test, during which the doctor prescribed an alternative to the anti-histaminic he was taking. **(2+2+1)**
   a) Why was an alternative anti-histaminic recommended?
   b) Name four drugs which can be used as alternatives to pheniramine in this patient.
   c) Mention two other clinical uses of H_1 anti-histaminic.

6. Explain the advantages and disadvantages of combining a local anaesthetic with adrenalin **(5)**

7. A 75-year-old patient with Parkinsonism maintained on levodopa-carbidopa combination, has off-late been having off-periods of akinesia. **(2+1+2)**
   a) Why is levodopa combined with carbidopa?
   b) What are 'off-periods' of akinesia?
   c) Briefly discuss the available options of further treatment in this patient.

8. Enlist the acute and chronic adverse effects of opioid analgesics. **(3+2)**

9. List the important sites of synthesis and the effects of thromboxane A_2 and prostacycline. **(1+4)**

All India Institute of Medical Sciences, Bhubaneswar

2nd Professional MBBS Supplementary Examination 2018

Pharmacology (Paper II)

Time: 3hours **Maximum marks:75**

Instructions: All questions are compulsory.

Answer Part A & Part B in separate Answer booklets

PART A (40 Marks)

1. A 50- year -old male complaining of epigastric pain was diagnosed as a case of duodenal ulcer with evidence for infection with *H. Pylori*. He was treated with tablet ranitidine 150 mg twice a day for 7 days. Though he felt fine within 2 days, his symptom recurred after a month.
   a) Comment on the initial treatment.
   b) What shall be the line of management, since the symptom recurred?
   c) Mention two important class of drugs that are contraindicated or to be used with caution in such case.
   d) Mention two drugs whose absorption may be interfered in such patient when co-administered orally with acid supressing drugs. **2+3+3+2 = 10**

2. **Discuss pharmacotherapy of** **5 ×2 = 10**
   a) Chloroquine sensitive plasmodium vivax malaria
   b) Status asthmaticus

3. **Choose a right drug for the following conditions with reason** **4×2 ½ = 10**
   a) A 25-year-old male suffering from acute amoebic dysentery
   b) Multiple worm infestation in a 12-year old child
   c) Scabies in a 35-year old female
   d) Enteric fever in a pregnant woman of 10 weeks gestation

4. **Write brief note on** **4×2 ½ = 10**
   a) Amphotericin B – Therapeutic uses & adverse effects
   b) Metformin-mechanism of action and adverse effects
   c) Combined oral Contraceptive- mechanism and therapeutic uses
   d) Iron Dextran-routes of administration and adverse effects

PART B (35 Marks)

5. Write clinical significance of **4×2 ½ = 10**

a) Antibiotic drug resistance

b) Avoiding any drug usage during the first trimester of pregnancy

c) Using cyclosporine in organ transplant patients

d) Preferring low molecular weight heparin over unfractionated heparin as anticoagulant

6. Explain with diagram only **1 x 5 = 5**

a) Mechanism of action of various antiretroviral agents

7. Explain why/how **5 × 3 = 15**

a) Artesunate is combined with sulfadoxine and pyrimethamine

b) Beta Adrenergic receptor blockers in thyroid storm

c) Folic acid administration may worsen neuropathy in B_{12} deficient patient.

d) Oxytocin is used to promote labour while ergometrine is not

e) Glucocorticoids should not be abruptly stopped in a patient on long term treatment

8. Give examples **5 × 1 = 5**

a) Two drugs used as emergency contraceptives

b) Two durgs used in patients with organ transplantation to prevent graft rejection.

c) Two drugs effective for anaerobic infections

d) Two antiemetics for chemotherapy induced nausea and vomiting

e) Two topical agents for *Taenia cruris* infection

All India Institute of Medical Sciences, Bhubaneswar

2nd Professional MBBS Supplementary Examination 2018

Pharmacology (Paper I)

Time: 3hours **Maximum marks:75**

Instructions: All questions are compulsory.

Answer Part A & Part B in separate Answer booklets

Part A (40 marks)

1. A 60 year old man presents with repeated episodes of chest pain on exertion for the past three months. His electrocardiogram (ECG) reveals ST depression. Blood pressure and other laboratory investigations are within normal limits. He is diagnosed to have chronic stable angina by the cardiologist.

   a) List the drugs that can relieve an acute attack of angina. Explain how these drugs alleviate chest pain. **(1+2)**

   b) Enumerate the drugs used for prophylaxis of angina. Explain how any one of these agents reduce the attacks of angina. **(1+2)**

   c) Does this patient require prophylaxis for angina? If yes Justify. **(1)**

   d) If this patient develops acute myocardial infarction, outline the treatment. **(3)**

2. **Discuss pharmacotherapy of** **(2 x 5 = 10)**
   a) Acute attack of migraine
   b) Organophosphorus poisoning

3. **Select the most appropriate drug for the following patients. Justify with reasons.** **(4 x 2½ =10)**

   a) A 42 year old man with pain due to fracture of both bones in left forearm
   b) A 20 year old college student with obsessive compulsive disorder
   c) A 25-year-old lady coming for medical termination of pregnancy of 7 weeks
   d) An 8-year-old child coming for fundoscopy for refractive error correction

4. **Write brief notes on:** **(4 x 2½ = 10)**
   a) Adrenaline-Mechanism of action and uses in anaphylactic shock
   b) Adverse effects of non-depolarising skeletal muscle relaxants
   c) Sodium valproate – therapeutic indications and adverse effects
   d) Ketamine – mechanism of action and adverse effects

Part B (35 marks)

5. **Explain the clinical significance of:** **(4 x 2½ = 10)**
   a) First pass metabolism
   b) Dose dependent action of dopamine
   c) Therapeutic drug monitoring of antiepileptic drugs
   d) Zero order elimination kinetics

6. **Illustrate diagrammatically** **(1 x 5 = 5)**
   a) Drugs acting on various sites in the treatment of Glaucoma.

7. **Explain why / how** **(5x 3 = 15)**
   a) Neostigmine is preferred over physostigmine for myasthenia gravis.
   b) Frusemide is called high ceiling diuretic.
   c) Prazosin should be started at a low dose
   d) Carvedilol is used in congestive cardiac failure.
   e) Morphine is contraindicated in head injury patients

8. **Write two examples for** **(5 x 1 = 5)**
   a) Two hit and run drugs
   b) Two cardio selective beta blockers
   c) Two ester linked local anaesthetics
   d) Two drugs causing physical dependence
   e) Two teratogenic drugs