

03/24

**The West Bengal University of Health Sciences**  
**MBBS 2nd Professional Examination (New Regulation) March - April 2024**

Subject: Pharmacology  
Paper: II

Full Marks: 100  
Time: 3 hours

*Attempt all questions. The figures in the margin indicate full marks.*

1. a) A 8 year old boy was sent for neurological evaluation because of episodes of apparent inattention. His mother gave a h/o episodes of staring look which lasts for few seconds, following which he resumes his normal activity. He was diagnosed to have absence seizures. 3+8+2+2
  - i) Describe the mechanism of action of the drug of choice for absence seizures.
  - ii) Write down the adverse effect, uses and drug interactions of the said drug.
  - iii) What is fosphenytoin and it has replaced IV phenytoin in treatment of status epilepticus.
  - iv) How will you manage a case of febrile convulsion.
- b) A 30 year old patient of IDDM presented in emergency in confused state with shortness of breath, sweating, palpitation. She had history of fever for few days. Physical examination revealed deep acidotic breathing with fruity smell. Blood report shows total leucocyte count-21650/cu.mm, CBG – 485mg/dl, ABG Shows  $\text{HCO}_3^-$  10 mEq/Lt, ketone bodies positive in urine routine examination. 1+6+4+2+2
  - i) What is your provisional diagnosis?
  - ii) How do you manage this condition?
  - iii) What is the mechanism of action of insulin?
  - iv) What is acute insulin resistance?
  - v) Mention two newer insulin delivery devices.
2. a) Classify peripherally acting muscle relaxant. Write down the mechanism of action of depolarizing muscle relaxant and its adverse effects. Rationale of using Dantrolene sodium in Malignant hyperthermia. 4+4+2  
b) Enumerate the drugs used in acid-peptic disorders. Write the mechanism of actions of proton pump inhibitor with schematic diagram. Outline the triple and quadruple therapy for helicobacter pylori infection. 4+4+2  
c) A 42 year old lady reported with breast carcinoma and bone metastasis. Her cancer was managed and now she receives morphine 6 hourly for her bone pain. What is the mechanism of action of morphine as an analgesic? Why is morphine contraindicated in cases of head injury? Which drug is used in morphine overdose and what is its mechanism of action? 4+2+2+2
3. Write short notes on following: 2 x 5
  - a) Monoclonal antibodies as anti-cancer agent.
  - b) Atypical antipsychotics.
4. Explain the following statements: 5 x 4
  - a) Isoniazid is an essential component of all antitubercular regimens.
  - b) Recombinant parathyroid hormone is used to prevent osteoporosis.
  - c) Dapagliflozin is useful beyond diabetes mellitus.
  - d) Mesna is combined with cyclophosphamide.
  - e) Letrozole is first line adjuvant therapy after mastectomy in post menopausal women.

10 x 1

5. Choose the correct option for each of the following:

i) Major limitations of clozapine for treatment of schizophrenia:

- a) Inability to benefit negative symptoms.
- b) Its potential to cause agranulocytosis.
- c) It produces hyperlactinemia.
- d) High incidence of extrapyramidal symptoms.

ii) Bisphosphonates are beneficial in all of the following except:

- a) Paget's disease.
- b) Rickets.
- c) Osteolytic bony metastasis
- d) Senile osteoporosis

iii) 'Diffusion hypoxia' is likely to occur only after use of nitrous oxide because it:

- a) Is a respiratory depressant
- b) Has low blood solubility and is used in high concentration
- c) Is a very potent anaesthetic
- d) Interferes with diffusion of oxygen into the tissues

iv) A gastrokinetic drug acts by inhibiting 5HT<sub>2</sub> and D<sub>2</sub> receptor as well as stimulating 5HT<sub>4</sub> receptor in myenteric plexus:

- a) Levosulpiride
- b) Metoclopramide
- c) Itopride
- d) Cinitapride

v) In nodulocystic acne, treatment is:

- a) Antifungal
- b) Antibiotics
- c) Steroids
- d) Isotretinoin

vi) One of the following is glucocorticoid of choice for fetal lung maturity:

- a) Prednisolone
- b) Fluticasone
- c) Beclomethasone
- d) Dexomethasone

vii) Ketamine is the preferred anesthetic for the following except:

- a) Hypertensive
- b) Trauma cases who have bled significantly
- c) Burn dressing
- d) Short operations on asthmatics

viii) A 35 year old male presented with an attack of acute gout. He was treated with 10 day course of naproxen. His blood uric acid level is high. What future line of treatment is most appropriate?

- a) No regular medication and treat attacks of acute gout when they occur with naproxen
- b) Regular long-term treatment with naproxen
- c) Regular long-term treatment with allopurinol
- d) Start with allopurinol and naproxen for 2 months followed by long-term allopurinol treatment

ix) Cell cycle specific anticancer agents are all except:

- a) Vinca alkaloids
- b) Bleomycin
- c) Hydroxyurea
- d) Cisplatin

x) Total dose of levonorgestrel for emergency contraception:

- a) 1.5 mg single pill
- b) 1.5 mg two pills
- b) 7.5 mg single pill
- d) 0.25 mg two pills