**3 Hours** **Total Marks: 100**

1. **Attempt all questions.**
2. **All questions carry equal marks.**
3. **Draw neat labeled diagrams wherever necessary.**
4. **Use of log tables and non-programmable calculator is allowed.**

**Q.1 a. Answer the following : (Any six)** **06**

1. Explain the term: Therapeutic index
2. Salts of EDTA form a complex with lead or arsenic is an example of which type of antagonism ?
3. What is the specificity of a drug ?
4. Give the efficacy ratio
5. What are receptors ?
6. What is the potency of a drug ?
7. Give one example of the study of effect of drug by quantal response curve.
8. What is competitive antagonism ?
9. What is biophase ?

**Q.1 b. Answer the following questions: (Any Two)** **14**

1. What are GPRS ? explain their role in in drug response
2. Explain giving suitable examples, non-competitive antagonism. Explain its effect on the drug response curve of an agonist.
3. Explain giving suitable example the construction of a quantal dose response curve

**Q.2 a. Do as instructed: [MCQ] (Any six)** **06**

1. Several drugs have an affinity for retinal pigment and thus may accumulate in the eye. The pigment is
   a.melanin
   b. xanthene
   c. rhodopsin
   d. carotenoid
2. Stomach emptying time can be altered by
   a.volume of ingested material
   b. viscosity of ingested material
   c. both
   d. neither
3. The closer the pKa of a drug to the tissue pH, diffusion of drug
   a. will not be affected
   b. will be slower across the membrane
   c. will be faster across the membrane
   d. will not take place

4. The rate at which the drug reaches the site of action depends on
   a. rate of intake
   b. rate of absorption
   c. rate of metabolism
   d. rate of absorption and distribution

5. When an overdose is given, neither can the drug be removed nor its absorption retarded. This route of drug administration is
   a. Intravenous
   b. oral
   c. subcutaneous
   d. intramuscular

6. The passage of the drug from its site of administration into the blood
   a. Distribution
   b. absorption
   c. diffusion
   d. adsorption

7. The active efflux transporter in the blood brain barrier is
   a. cytochrome p450
   b. Pgp
   c. Pyp
   d. Pjp

8. Since the pH of CSF is about 7.35, drugs which tend to concentrate in the CSF are
   a. neutral drugs
   b. weak organic acids
   c. weak organic bases
   d. strong organic acids

9. The rate at which the drug penetrates the tissues and other body fluids depends on
   a. capillary permeability
   b. transport mechanisms available
   c. both
   d. neither

**Q.2 b. Answer the following questions: (Any Two)** **14**

1. Explain selective accumulation of drugs in any three tissues.
2. Elaborate on absorption of drugs from large intestine and rectum.
3. Influence of pH on drug absorption and distribution of drug.

**Q.3 a. Do as directed: (Any Six)** **06**

1. Define the term: Toxicity.
2. Anaphylaxis is an example of _____ hypersensitivity.
3. Give one example of the drug that causes pulmonary reaction.
4. State true or false-Prolonged administration of Gold salts causes cancer.
5. Give one example of the antidote given to cure methanol poisoning.
6. What do you mean by Drug Addiction?
7. Assign one supportive treatment for accelerated elimination of the absorbed poison from the blood.
8. Assign one antidote for lead poisoning.
9. Give any one effect of phenoxy herbicide inhalation.

**Q.3 b. Answer the following: (Any Two)** **14**

1. Explain the term Misuse Drug. Elaborate- Alcohol as an Abused Drug.
2. Discuss in detail the use of Supportive treatments being given to treat the pulmonary toxication.
3. What do you understand by the term- Adverse Drug Reaction. Elaborate on any 3 elements attributing to the Adverse drug Reaction.

**Q.4 a. Do as directed: (Any six)** **06**

1. Fill in the blank: The fatty acid sheath which surrounds and insulates most of the axons is called _____
2. Give any one role of autonomic nervous system
3. Name the neurotransmitter that regulates sleep-wake cycle.
4. Name the neurotoxin produced by banded krait.
5. What is synapse?
6. Fill in the blank : several “islands” of gray matter, buried deep within the white matter of the cerebral hemispheres are called _____
7. Which region of the brain controls breathing?
8. Name any one compound that inhibits nicotinic receptors.
9. Fill in the blank : Deficiency of L-DOPA causes _____

**Q.4 b. Discuss the following: (Any Two)** **14**

1. Different types of synaptic vesicle proteins with their functions.
2. Cerebrum with suitable diagram.
3. Propagation of nerve impulses with suitable diagram.

**Q.5 Write Short notes on the following (Any four)** **20**

**a.** Measurement of drug safety

**b.** Drug distribution across the placental barrier.

**c.** Absorption of drugs through skin.

**d.** Adverse effects of the drugs on Male reproductive system.

**e.** Electrical synapses

**f.** Cerebellum

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