MLT 2nd

Course Title: General pharmacology I

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Note:

- **Paper is divided into two questions, Q1 includes 15 MCQs and Q2 includes 15 True/False statements**
- **Each MCQ or T/F carry one mark with grand total of 30 marks**
- **Highlight or underline the appropriate option**
- **Before marking, read every statement carefully to understand the actual sense of question**

Q1. Select and highlight appropriate option for the given questions

1. A drug X is a large protein molecule. Its action on cholinergic transmission depends on an intracellular action within nerve endings. Which one of the following processes is best suited for permeation of very large protein molecules into cells?
    a. Aqueous diffusion
    b. Endocytosis
    c. First-pass effect
    d. Lipid diffusion
    e. Special carrier transport
2. Which of the following cytochrome isoforms is responsible for metabolizing the largest number of drugs?
    a. CYP1A2
    b. CYP2C9
    c. CYP2C19
    d. CYP2D6
    e. CYP3A4
3. Drug metabolism in humans usually results in a product that is
    a. Less lipid soluble than the original drug
    b. More likely to distribute intracellularly
    c. More likely to be reabsorbed by kidney tubules
    d. More lipid soluble than the original drug
    e. Less water soluble than the original drug
4. All the statements are correct, Except
    a. PK determines the beginning, extent, and strength of a drug's effect

b. Interaction of drug and receptor effect is studied in PD
c. Idiosyncratic reactions sometimes occurs due to genetic changes
d. Various doses, dosage form and frequency is adjusted in pharmacogenomics

5. By considering the properties passive diffusion, which one is not correct
    a. Aqueous soluble drugs cannot move easily across cell membrane
    b. Drug move inside body by sensing the concertation change
    c. Transporter overload is sometimes involve
    d. No specific drug structure is necessary
6. A patient is administered with drug A started toxic reaction but that drug is slowly metabolized by enzymes, what should be administered to reduce the toxicity
    a. Cimetidine
    b. Phenobarbital
    c. Grapefruit juice
    d. None of the above
7. In enterohepatic circulation, reactivated metabolites after metabolism belongs to
    a. Phase I
    b. Phase II
    c. Both phases
    d. Enzymes other than CYP P450
8. Drugs can be effectively distributed to an organ when it have properties like
    a. Highly perfused capillaries
    b. High plasma proteins binding
    c. Hydrophobicity of drugs
    d. Both a. and c.
    e. All of the above
9. A patient has some hypersensitivity to the drug A, for avoiding any adverse reaction he administered Drug B with same desired properties, both of the drugs are _____
    a. Bioequivalent
    b. Therapeutic equivalent
    c. Bio-inequivalent
    d. None of the above
10. There are two dosage forms of same therapeutic class of drug, one is simple tablet and other is enteric coated, the later one will affect the _____ drug
    a. Half-life

b. Elimination
c. Bioavailability
d. All of the above

11. Alteration in biological function is always secondary step to_____
    a. Drug action
    b. Drug effect
    c. Both a. and b.
    d. The above statement is incorrect
12. Which of the following statement is not true
    a. Mechanistically, every drug can illicit its action via enzymes, ion channels, transporters, receptors
    b. Majority of drugs show its effects by interacting with its target biomolecules
    c. The targeted biomolecules for initiating drug action are proteins in nature
    d. Mechanism of drug action always depends on its selectivity
13. Which of the following is linked directly/ indirectly to the flow of ions across cell membrane
    a. Enzyme linked receptors
    b. Ligand-gated ion channels
    c. Intracellular receptors
    d. G-protein coupled receptors
    e. Both b. and d.
14. Signals to the skeletal muscles are controlled by
    a. G-protein receptors
    b. Second messenger system only
    c. Nicotinic receptors
    d. None of the above
15. Which receptor require preliminary formation of ligand bonding that lead to moveable complex
    a. Enzyme linked receptors
    b. Ligand-gated ion channels
    c. Intracellular receptors
    d. G-protein coupled receptors

Q2. Select and highlight Ture/False for given statements

1. Clinical pharmacology includes the investigation, in terms of pharmacokinetic and pharmacodynamic parameters in various form of subjects (True/False)
2. Drugs having lipophilicity with greater extend will circulate for long period of time inside the body, hence will have prolong half-life (True/False)
3. In metabolism process, introducing the polar functional group into drug molecule may decrease its pharmacological activity (True/False)
4. Despite of lipid solubility of ligand the slowest signal transmission and processing occur through intracellular receptors (True/False)
5. Drugs having limited aqueous solubility and poor membrane permeability are mostly preferred to be administered via intravascular route (True/False)
6. Passive diffusion is the most common mechanism for drug absorption because of concentration gradient, no carrier transportation and saturability, along with appropriate drug structure (True/False)
7. It is not necessary that every drug will follow the same path for metabolism, it is only determined by the type of drug or chemical nature (True/False)
8. After efficient metabolism, drugs can be equally eliminated from body through urine and feases (True/False)
9. Bioavailability of a drug administered via oral route is the ratio of the AUC for oral administration compared with the AUC for IV injection (True/False)
10. In every scenario and class of drug, when the plasma concentration is declined to half then its effect will also be demolished according to plasma concentration (True/False)
11. Distribution of drug into body compartment is determined in terms of drug nature, molecular weight and plasma proteins binding (True/False)
12. All drugs that are used for treatment of any type of disease do not impart new function to our body (True/False)
13. In case of transporters, substrate can be facilitated across cell membrane in/against the direction of concentration gradient (True/False)
14. As compared to other receptors, intracellular receptors take long for initiating its effect (True/False)
15. Depending upon the nature of ligand, majority of drugs interact with receptors that are present across the cell membrane (True/False)

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Q No.1:

Ans:

- **1. A**
- **2. A**
- **3. D**
- **4. C**
- **5. A**
- **6. B**
- **7. A**
- **8. D**
- **9. C**
- **10. D**
- **11. B**
- **12. D**
- **13. E**
- **14. E**
- **15. D**

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QNo.2:

Ans:

- **1. True**
- **2. True**
- **3. True**
- **4. True**
- **5. False**
- **6. True**
- **7. True**
- **8. False**

- **9. True**
- **10. True**
- **11. True**
- **12. True**
- **13. True**
- **14. True**
- **15. True**

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