Sample MCQ's

First year M. Pharm Sem-I (CBCS)

Modern Pharmaceutical and Medicinal Chemistry

Q1. ____ is prodrug of ampicilline for enhancing its chemical stability.

A) Bacampicillin

B) Pivampicillin

C) Hetacillin

D) Talampicillin

Q2. Which of the following is an example of a mutual prodrug?

a) Prontosil is the prodrug for sulfanamide

b) Aspirin is the prodrug of salicylic acid

c) Benorylate prodrug for NSAIDs and paracetamol

d) Diesters pro-prodrug for pilocarpic acid

Q3. Prodrugs with two active compounds are known as _____

a) Mixed type prodrugs

b) Pro-prodrugs

c) Bioprecursors

d) Mutual prodrug

Q4. Which of the following will be the pharmacokinetic application of prodrugs?

a) Improvement of taste

b) Improvement of odour

c) Site-specific drug delivery

d) Reduction in GI irritation

Q5. How improvement of a drug in case of taste is done?

a) Injecting the drug so no taste related problems

b) Reducing the drug solubility in the saliva

c) Lower affinity for the taste receptors and making the drug sweet

d) Reducing drug solubility in saliva and lower affinity for taste receptors

Q6. Why carbenicillin cannot be given orally?

a) Tastes bad

b) Bad odour

c) Degraded by saliva

d) Hydrolysed easily

Q7. A prodrug is

a)An inactive drug that is transformed in the body to an active metabolite

b)The prototype member of a class of drugs

c)The oldest member of a class of drugs

d)A drug that is stored in body tissues and is then gradually released in the circulation

Q8. An example of a tripartite mutual prodrug is, which upon hydrolysis by an esterase produces following compounds.

a) amoxicillin, penicillanic acid sulfone, and formaldehyde

b) amoxicillin, penicillanic acid sulfone, and acetaldehyde

c) ampicillin, penicillanic acid sulfone, and formaldehyde

d) ampicillin, penicillanic acid , and acetaldehyde

Q9. Some enzymes use nucleophilic amino acid side chains or cofactors in the active site to form covalent bonds to the substrate.This is known as

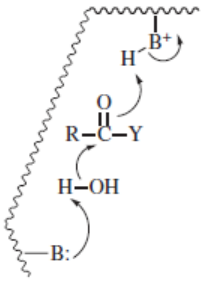
a) nucleophilic catalysis

b) Acid catalysis

c) Base catalysis

d) Electrostatic Catalysis

Q10. Figure given below represent _____ type of catalyst



a) nucleophilic catalysis
b) General acid catalysis
c) General Base catalysis
d) Simultaneous acid and base catalysis

Q11.____Coenzyme is derived from Vitamins B6

a) Pyridoxal 5′-phosphate

b) Tetrahydrofolate

c) Nicotinamide adenine dinucleotide

d) Flavin mononucleotide

Q12.The major interaction responsible for holding the Pyridoxal 5′-phosphate (PLP) in the active site is

a) Ionic interaction between phosphate group and cationic group of active site

b) covalent interaction between aldehyde group of the PLP and a lysine residue of active site to from Schiff base

c) Hydrogen bonding interaction

d) van der waals interaction

Q13. Give name of co-factor required for racemization of amino acid by Racemases enzyne

a) pyridoxal 5’-phosphate

b) tetrahydrofolate

c) flavin mononucleotide

d) protoporphyrin IX

Q14. flavin coenzymes catalyze _____ reaction

a) Decarboxylation reactions of amino acids
b) redox and monooxygenation reactions
c) Racemization reactions
d) Transfer of amino group of the substrate amino acid to another molecule

Q15.____ type of mechanism involved in flavin-dependent D-amino acid oxidase-catalyzed oxidation of D-amino acids

a) Two-electron followed by one-electron mechanism
b) Two-Electron (Carbanion) Mechanism
c) Hydride Mechanism
d) one-electron (radical) Mechanism

Q16. The transition state of a catalyzed reaction is

a) a highly-populated intermediate on the reaction pathway.
b) higher in energy than that of an uncatalyzed reaction
c) lower in energy than that of an uncatalyzed reaction.
d) lower in energy than the reaction substrate.

Q17.The *occupancy theory* Gaddum and Clark states that

a) The intensity of the pharmacological effect is directly proportional to *affinity* of drug to receptors
b) The intensity of the pharmacological effect is inversely proportional to the number of receptors occupied by the drug
c) The intensity of the pharmacological effect is inversely proportional to *affinity* of drug to receptors
d) The intensity of the pharmacological effect is directly proportional to the number of receptors occupied by the drug

Q18. A full agonist or partial agonist is said to display

a) Positive efficacy
b) Zero efficacy
c) Negative efficacy

d) Positive and negative efficacy

Q19. In the case of agonists

a) Rate of association would be slow, but the dissociation would be slow fast

b) Rate of association would be fast, but the dissociation would be slow

c) Intermediate rates of association and dissociation

d) Rates of both association and dissociation would be fast

Q20. Primary site for drug metabolism

a) Stomach

b) Liver

c) Kidney

d) Muscle

Q21. Select phase II pathway which forms non-polar metabolite

a) Glucuronic Acid Conjugation

b) Sulfate Conjugation

c) Acetyl Conjugation

d) Amino Acid Conjugation

Q22. Give name of Co-enzyme and enzyme catalyses glucuronic acid Conjugation pathway

a) Uridine-5'-diphospho-α-D-glucuronic acid and UDP-Glucuronosyl transferase

b) Uridine-5'-diphospho-β-D-glucuronic acid and UDP- glucuronic acid transferase

c) Uridine-5'-diphospho-β-D-glucuronic acid and UDP-Glucuronosyl transferase

d) Uridine-5'-diphospho-α-D-glucuronic acid and UDP- glucuronic acid transferase

Q23. Alcohol dehydrogenase require _____ as the cofactor

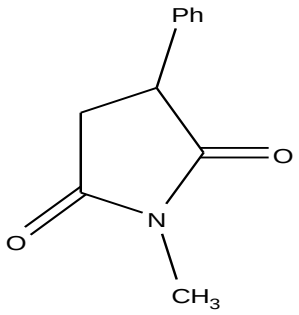
a) tetrahydrofolate

b) NAD+ or NADP+

c) pyridoxal 5’-phosphate

d) *S*-Adenosyl methionine

Q24. Phensuximide is enzymatically *N*-demethylated and hydrolyzed stereospecifically to



Phensuximide

a) S-(+)-2-phenylsuccinic acid

b) S-(+)-2-phenylsuccinamic acid

c) R-(+)-2-phenylsuccinic acid

d) *R*-(−)-2-phenylsuccinamic acid

Q25. Which of the following statements is **not true** about cytochrome P450 enzymes?

a) They contain haem and magnesium.

b) They belong to a general class of enzymes called monooxygenases.

c) There are over 30 different cytochrome P450 enzymes.

d) Variation in cytochrome P450 enzyme profile between individuals can explain individual variation in drug susceptibility.

Q.26 In drug discovery, lead identification involves the below mentioned steps, except;

a) Choosing the disease

b) Choosing a drug target

c) Market surveillance

d) Identifying a bioassay

Q.27 Choose a correct statement about using NMR as a detection system for identifying a bioassay

a) The method can detect weak binding which would be missed by conventional screening methods

b) It can identify the binding of small molecules only

c) It is not complementary to HTS

d) It cannot identify the binding of small molecules

Q.28 The Most biologically active natural products are;

a) Primary metabolites

b) Highly reactive chemical species

c) Secondary metabolite

d) Tertiary metabolite

Q.29 Which of the following sourse of lead compound is not obtained from marine world

a) Coral

b) sponges

c) Fish

d) Morhine

Q.30 Choose a correct statement about the enzyme inhibitors

a) It should be able to inhibit any type of enzyme

b) Broad range of enzymes should be inhibited by them

c) Enzyme inhibitors should show selectivity between the various isozymes of an enzyme

d) It can be any molecule which may not have affinity for the enzyme