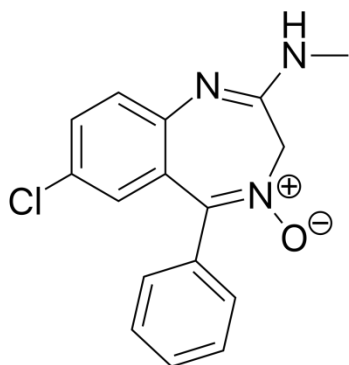


**FINAL YEAR UNIVERSITY EXAMINATION 2019-2020**  
**Final Year B.Pharm. Semester VIII**  
**SUBJECT-BPH\_C\_801\_T-Pharmaceutical Chemistry III**  
**MULTIPLE CHOICE QUESTIONS: PRACTICE QUESTION BANK**

**SET-I**

Q. 1 Which is the correct IUPAC name for the following structure?



- A] 5-chloro-2-(methylamino)-5-phenyl-3H-1,4-benzodiazepine
- B] 7-chloro-2-(methylamino)-5-pyridinyl-3H-1,4-benzodiazepine-4-oxide
- C] 7-chloro-2-(ethylamino)-5-phenyl-3H-1,5-benzodiazepine
- D] 7-chloro-2-(methylamino)-5-phenyl-3H-1,4-benzodiazepine-4-oxide

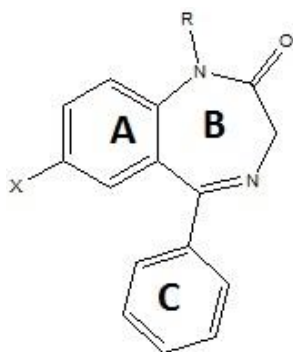
Q. 2 Which of the following is long acting sedative hypnotic?

- A] Diazepam
- B] Alprazolam
- C] Temazepam
- D] Imipramine

Q. 3 Name of oxide derivative used as sedative hypnotic is

- A] Diazepam
- B] Chlordiazepoxide
- C] Nitazepam
- D] Ramelteon

Q. 4 With respect to the following general structure which is the **correct** statement ?

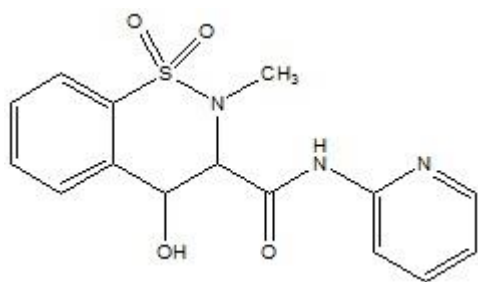


- A] X must be electropositive substituent for optimum activity
- B] X must be aromatic ring for optimum activity
- C] X must be electronegative substituent for optimum activity
- D] X must be H for optimum activity

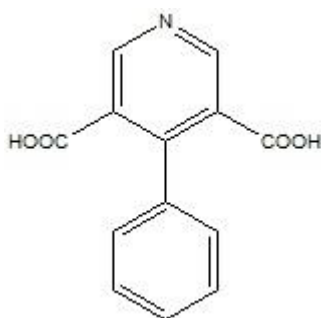
Q. 5 Which is the **incorrect** statement with respect to structure given in Q. 4

- A] Ring C is ortho substituted with electron withdrawing group for optimum activity
- B] Ring C when para substituted increases activity
- C] Ring C is diortho substituted with electron withdrawing group for optimum activity
- D] Ring C when para substituted decreases activity

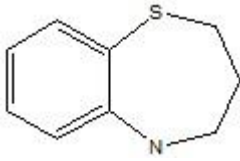
Q. 6 What is the starting material for synthesis of Piroxicam (structure given below)



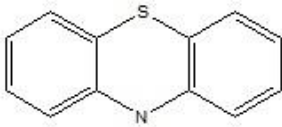
A]



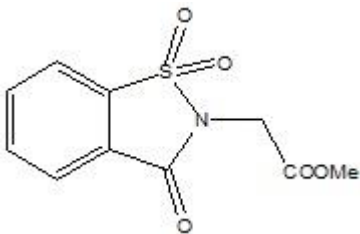
B]



C]



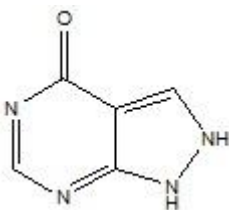
D]



Q. 7 Which one of the following is Cytokine inhibitor?

- A] Abatacept
- B] Fluoxetine
- C] Propranolol
- D] Aldosterone

Q. 8 Write the name and use for the following drug.



- A] Allopurinol, treatment of Gout
- B] Colterol, Adrenergic agent
- C] Atropine, Cholinergic antagonist
- D] Indomethacin, NSAID

Q. 9 Which of the following approach will lead to active metabolite for sulfinpyrazone?

- A] N-dearylation
- B] Sulfide formation
- C] para hydroxylation of phenyl ring
- D] S reduction

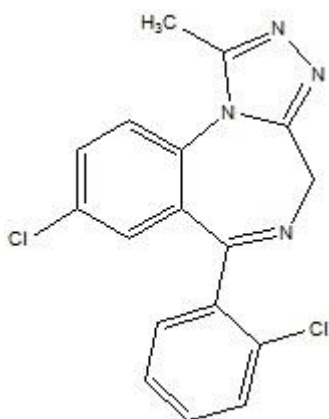
Q. 10 Anakinra is

- A] costimulation modulator
- B] anti-TNF alpha antibody
- C] TNF-alpha blocker
- D] interleukin receptor antagonist

Q. 11 Which of the following is GABA prodrug.

- A] tiagabine
- B] diazepam
- C] progabide
- D] mephobarbital

Q. 12 Alprazolam (structure given below) is short acting sedative hypnotic because of



- A] Presence of 4,5 double bond in diazepine ring
- B] Presence of 1,4-diazepine ring
- C] Presence of chlorine on phenyl ring
- D] Presence of methyl group on triazole ring

Q. 13 Which Acetylcholine esterase inhibitor is used for treatment of Alzheimer disease?

- A] Tacrine
- B] Physostigmine
- C] Neostigmine
- D] Pyridostigmine

Q. 14 Nicotine receptor is a type of which receptor?

- A] GPCR
- B] Ion channel receptor
- C] Kinase receptor
- D] Nuclear receptor

Q. 15 Donepezil contains which heterocycle as scaffold?

- A] Pyridine
- B] Piperidine
- C] Piperazine
- D] Pyrazine

Q. 16 Which of the following drug is an antidote for organophosphorus poisoning?

- A] Rivastigmine
- B] Donepezil
- C] Pralidoxime chloride
- D] Tacrine

Q. 17 Which of the following drug is COX-II inhibitor?

- A] Valdecoxib
- B] Piroxicam
- C] Nabumetone
- D] Mefenemic acid

Q. 18 Which of the following NSAID is a prodrug?

- A] Ibuprofen

- B] Indometahcin
- C] Diclofenac
- D] Sulindac

Q. 19 Drug increasing uric acid excretion is

- A] Colchicine
- B] Probenecid
- C] sulfinpyrazone
- D] allopurinol

Q. 20 What is side effect of carbamazepine?

- A] EPS
- B] loss of memory
- C] aplastic anemia
- D] addiction

Q. 21 Which of the following pair of drugs is used to treat Parkinson's disease?

- A] Carbidopa-Levodopa
- B] Selegillin Amantidine
- C] Carbidopa-Amantidine
- D] Sulfinpyrazone-Probenecid

Q. 22 Chemical class of Ibuprofen is,

- A] Aryl acetic acid
- B] Aryl propanoic acid
- C] Indole acetic acid
- D] Anthranilic acid

Q. 23 Which one of the following is example of mineralo-corticosteroid

- A] betamethasone
- B] prednisone
- C] Aldosterone

D] triamcinolone

Q. 24 Diethyl stilbestrol is active in which of the following form?

- A] cis form
- B] trans form
- C] meso compound
- D] R form

Q. 25 Which of the following is not an example of progestin?

- A] Tamoxifen
- B] Megestrol
- C] Norethindrone
- D] Medroxyprogesterone

Q. 26 Identify the drug with the following chemical name :

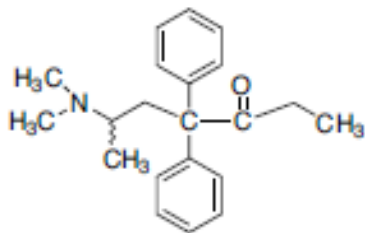
17 $\alpha$ -pregna-2,4-dien-20-yno-[2,3-*d*]isoxazol-17-ol

- a. Stanazolol
- b. Nandrolone
- c. Danazole
- d. Oxandrolone

Q. 27 Diazepam is metabolized to Nordazepam by \_\_\_\_\_ and \_\_\_\_\_.

- a. CYP2C19 & CYP3A4
- b. CYP2C18 & CYP3A3
- c. CYP2C17 & CYP3A2
- d. CYP2C20 & CYP3A5

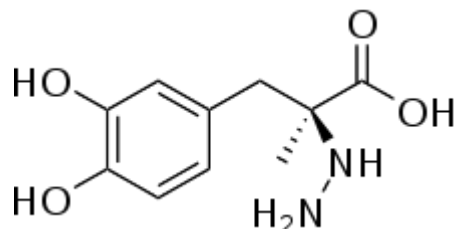
Q. 28 Identify the incorrect statement with reference to the following:



- a. Approved for analgesic therapy and for the maintenance and treatment of opioid addiction.

- b. opioid activity resides in the S-enantiomer
- c.  $\mu$ -receptor agonist
- d. synthetic opioid

Q. 29 Which is the correct IUPAC name for the following structure?



- a. (S)-2-Amino-3-(3,4-dihydroxyphenyl)propanoic acid
- b. (R)-N-methyl-N-(1-phenylpropan-2-yl)prop-1-yn-3-amine
- c. (2S)-3-(3,4-dihydroxyphenyl)-2-hydrazino-2-methylpropanoic acid
- d. (2R)-3-(3,4-dihydroxyphenyl)-3-Pyridino-2-ethylbutanoic acid

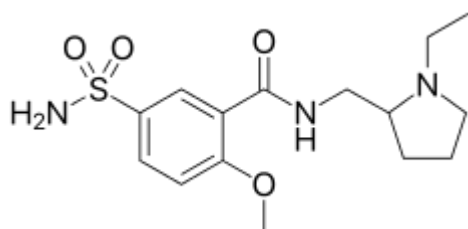
Q. 30 The effect of larger substitution on side chain N in case of phenylethanolamine is

- a. Increase in  $\beta$ 2 receptor selectivity
- b. Increase in  $\alpha$  receptor activity
- c. Increase in nonselectivity towards  $\alpha$ ,  $\beta$  receptors
- d. Loss of direct sympathomimetic activity

Q. 31  $\alpha$ -CH<sub>3</sub> substituent present in the profens,

- a. decreases cyclooxygenase inhibitory activity and induces toxicity of the profens.
- b. decreases cyclooxygenase inhibitory activity and decreases toxicity of the profens.
- c. increases cyclooxygenase inhibitory activity and increases toxicity of the profens.
- d. increases cyclooxygenase inhibitory activity and reduces toxicity of the profens.

Q. 32 Which is the correct IUPAC name for the following structure?



- a. 8-chloro-11-(4-methylpiperazin-1-yl)-5H-dibenzo[b,e][1,4]diazepine
- b. N-[(1-ethylpyrrolidin-2-yl)methyl]-2-methoxy-5-sulfamoylbenzamide
- c. 8-chloro-6-(4-methylpiperazin-1-yl)benzo[b][1,4]benzoxazepine
- d. 4-[4-(4-chlorophenyl)-4-hydroxypiperidin-1-yl]-1-(4-fluorophenyl)butan-1-one

Q. 33 If additional unsaturation is introduced in the Ring A in Glucocorticoids, it results in

- a. Increase in Glucocorticoid activity



- b. Changes the conformation of A ring
- c. Enhance anti-inflammatory effect
- d. Decreases Salt retaining activity

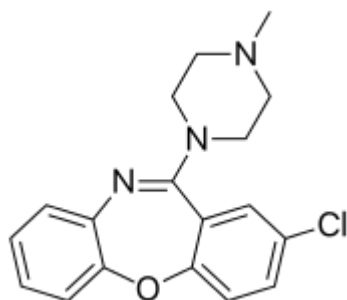
Q. 34 What kind of change in the structure of direct acting sympathomimetic are responsible for making them indirectly acting compounds?

- a) Removal of 3'-OH
- b) Removal of 4'-OH
- c) Removal of 3',4'- OH
- d) Retention of 3'-OH and replacing 4'-OH with -CH<sub>2</sub>OH

Q. 35 Because diazepam clearance is decreased in the elderly and in patients with hepatic insufficiency, a dosage \_\_\_\_\_ may be warranted.

- a. Enhancement
- b. Reduction
- c. No effect
- d. Remain Constant

Q. 36 The given drug has affinity for which receptors?



- a) D<sub>2</sub> and 5HT<sub>2</sub> receptors
- b) D<sub>2</sub> and Muscarinic receptors
- c) D<sub>1</sub> and 5HT<sub>2</sub> receptors
- d) D<sub>1</sub> and Muscarinic receptors

Q. 37 The short elimination half-life of Zolpidem is because its aryl methyl groups is extensively \_\_\_\_\_

- a) α hydroxylated
- b) β hydroxylated
- c) δ hydroxylated
- d) θ hydroxylated

Q. 38 What interactions are involved in binding the phenol group to the target binding site in Morphine?

- a. Ionic interactions
- b. Hydrogen bonding interactions

- c. van der Waals binding interactions
- d. The group does not bind

Q. 39 Major pathway of metabolism of NSAID's by

- a. Conjugation
- b. Hydrolysis
- c. Oxidation
- d. Reduction

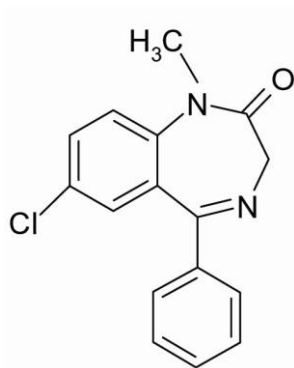
Q. 40 3-(dimethylamino)phenol and dimethylcarbamic chloride are the starting materials for the synthesis of

- a. Neostigmine
- b. Physostigmine
- c. Pyridostigmine
- d. Rivastigmine

Q. 41 Which of the following are semi-synthetic opiates?

- a. Codeine
- b. Oxycodone
- c. Fentanyl
- d. Endomorphins

Q. 42 Identify the IUPAC nomenclature of following



- a. 7-chloro-1-methyl-5-phenyl-3H-1,4-benzodiazepin-2-one
- b. 7-chloro-2-methylamino-5-phenyl-1,4-benzodiazepine-4-oxide
- c. 7-nitro-5-phenyl-1H-benzo [e] [1,4]diazepin-2(3H)-one
- d. 7-Chloro-1,3-dihydro-1-methyl-5-phenyl-1,4-benzodiazepin-2-one

Q. 43 Which one of the following is a Selective serotonin inhibitor?

- a. Imipramine
- b. Doxepine
- c. Amoxapine
- d. Escitaprolam

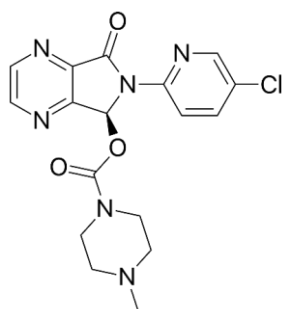
Q. 44 Which one of the following is a Azapirones anxiolytic agent.

- a. Oxazepam
- b. Buspirone
- c. Clonazepam
- d. Eszopiclone

Q. 45 Which of the following is aminoalcohol type of an anticholinergic?

- a) Procyclidine
- b) Benztropine
- c) Isopropamide
- d) Tropicamide

Q. 46 Which is the correct IUPAC name for the following structure?



- a. [(7S)-6-(5-chloropyridin-2-yl)-5-oxo-7H-pyrrolo[3,4-b]pyrazin-7-yl]4-methyl piperazine-1-carboxylate.
- b. [(7S)-6-(5-chloropyridin-2-yl)-5-oxo-7H-pyrrolo[3,4-b]piperazin-7-yl]4-methyl pyrazine-1-carboxylate.
- c. [(7S)-6-(5-chloropyridin-2-yl)-5-oxo-7H-pyrrolo[3,4-b]piperidin-7-yl]4-methyl pyrimidin-1-carboxylate.
- d. [(7S)-6-(5-chloropyridin-2-yl)-5-oxo-7H-pyrrolo[3,4-b]furan-7-yl]4-methyl piperazine-1-carboxylate.

Q. 47 Primary use of fluoxetine is

- a. Antidepressant
- b. Anxiolytics
- c. Antipsychotics
- d. Sedative Hypnotic

Q. 48 Which of the following is  $\gamma$ -vinyl GABA

- a. Phenytoin
- b. Vigabatrine
- c. Valproic acid
- d. Gabapentine

Q. 49 Naproxen is a derivative of \_\_\_\_\_

- a. Arylpropionic acid

- b. Arylethanoic acid
- c. Arylpropionic ester
- d. Arylpropionic ether

Q. 50 Which feature of acetylcholine interacts with the binding site of cholinergic receptors by hydrogen bonding?

- a. The acyl methyl group
- b. The ester
- c. The quaternary nitrogen
- d. All three N-methyl groups

## SET-II

1) Identify selective  $\alpha_1$  antagonist containing quinazoline nucleus from the following agents.

a) Tolazoline b) Phentolamine c) Phenoxybenzamine d) Prazosin

2) Mechanism of action of ramelteon is

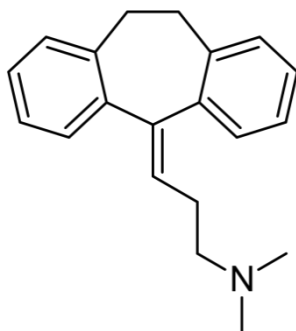
a) NMDA receptor antagonist b) Melatonin receptor antagonist

c) GABA receptor antagonist d) Serotonin receptor antagonist

3) Which of the following Acetylcholine esterase inhibitor does not contain quaternary ammonium group?

a) Physostigmine b) Neostigmine c) Pyridostigmine d) Edrophonium

4) Amitriptyline (structure given below) undergoes metabolism to give active metabolite by



a) O-demethylation b) N-demethylation c) Oxidative deamination d) Oxidative hydroxylation

5) Which of the following is not a structural feature of opioid antagonist?

a) Presence of allyl/cyclopropylmethyl group at 17<sup>th</sup> position

b) Replacement of 6 -OH with Keto group

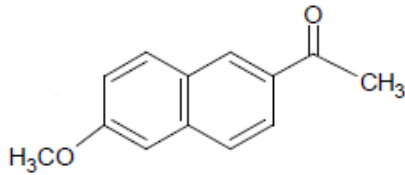
c) Presence of 7-8 double bond

d) Substitution of 14 $\beta$ -OH

6) The enzyme which degrades dopamine is

a) COMT b) DOPA decarboxylase c) Aldehyde reductase d) Cyclooxygenase

7) Identify the Non-Steroidal Anti-inflammatory drug that can be synthesized using following reagent.



- a) Diclofenac      b) Naproxen      c) Piroxicam      d) Nimesulide
- 8) Which one of the following statement of trimethadione is inappropriate?
- a) Trimethadione is a prodrug  
 b) Trimethadione is used in absence seizures  
 c) Trimethadione belongs to imminostilbene class  
 d) Trimethadione is antagonist of T type of calcium channels
- 9) -----is purely anabolic steroid with no androgenic activity.
- a) Testosterone      b) Stanozolol      c) 17 $\alpha$ -Methyltestosterone d) Oxymesterone
- 10) An antipsychotic drug fluphenazine is given as an ester of decanoic acid
- a) To increase potency      b) To increase duration of action  
 c) To increase chemical stability      d) To increase binding modes with the receptor
- 11) Name a NSAID associated with minimal gastric side effects
- a) Diclofenac      b) Flurbiprofen      c) Aspirin      d) Nabumetone
- 12) Which of the following is not tricyclic antidepressant?
- a) Fluoxetine      b) Imipramine      c) Chlorimipramine      d) Amitriptyline
- 13) Which one of the following drug inhibit xanthine oxidase
- a) Febuxostat      b) Probenecid      c) Colchicine      d) Sulfipyrazone
- 14) ----- co-administered with levodopa.
- a) Selegline      b) Amantadine      c) Carbidopa      d) Benztropine
- 15) Which one of the substituent can be present on nitrogen in narcotic antagonist?
- a) Methyl      b) Cyclopropyl methyl      c) Phenyl ethyl      d) Ethyl
- 16) Select an anticonvulsant from the following which acts by Ca<sup>+2</sup> blockade.
- a) Phenytoin      b) Carbamazepine      c) Valproic Acid      d) Trimethadione
- 17) Identify metabolite of diazepam from the following.

- a) Chlordiazepoxide      b) Oxazepam      c) Nitrazepam      d) Clonazepam

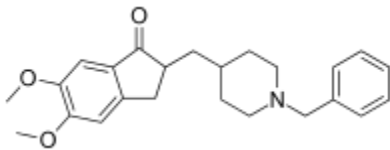
18) Which drug is COMT resistant?

- a) Isoproterenol    b) Salbutamol    c) Colterol    d) Epinephrine

19) What is relation between xylometazoline and oxymetazoline?

- a) Both are  $\alpha_2$  adrenergic agonists.      b) Both are 2-aminoimidazolines  
c) Oxymetazoline is metabolite of xylometazoline d) Both are adrenergic antagonists

20) Mention therapeutic use of



- a) Mysteria Gravis    b) Insecticide    c) Glaucoma    d) Alzheimer disease

21) Which of the following statement is not true with respect to Imipramine?

- a) It is MAO inhibitor  
b) It gets metabolized by N-dealkylation  
c) It is norepinephrine and serotonin reuptake inhibitor  
d) Dibenzazepine is basic scaffold present

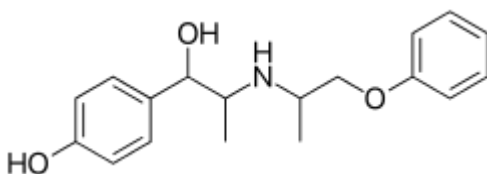
22) Succinylcholine needs to be administered with ----- to prevent enzymatic degradation

- a) Tubocurarine      b) Gallamine      c) Decamethonium d) Neostigmine

23) Why  $17\alpha$  substituent in androstane is important?

- a) Increase potency      b) Increase anabolic activity  
c) Provide oral bioavailability      d) Increase progestational activity

24) Mechanism of action of



- a) Nonselective  $\beta$  agonist      b) Nonselective  $\beta$  antagonist  
c) Selective  $\beta_2$  agonist      d) selective  $\beta_2$  antagonist

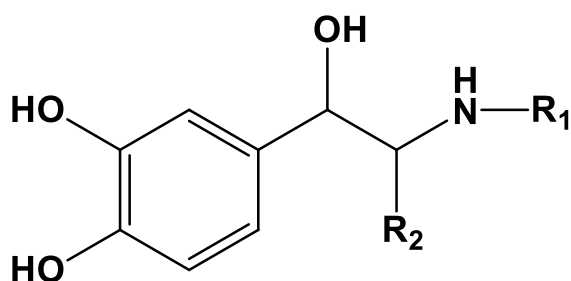
25) The IUPAC name of Buspirone is

- a) 8-[4-(4-pyrimidin-2-yl piperazin-1-yl)butyl]-8-azaspiro [4.5] decane-7,9-dione
- b) 8-[4-(4-pyrimidin-2-yl piperazin-1-yl)propyl]-8-azaspiro [4.5] decane-7,9-dione
- c) 8-[4-(4-pyridin-2-yl piperazin-1-yl)butyl]-8-azaspiro [4.5] decane-7,9-dione
- d) 8-[4-(4-pyrimidin-2-yl piperazin-1-yl)butyl]-8-azaspiro [4.5] decane-6,8-dione

26) Which one of the following anti epileptic drug do not contain ureide in its structure

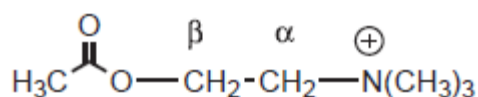
- a) Phenytoin b) Trimethadione c) Ethotoin d) Lamotrigine

27) Refer the general structural of direct acting sympathomimetic. Converting catechol to resorcinol is responsible for----- . Select the correct answer.



- a) Increased  $\alpha$  receptor selectivity
- b) Nonselective nature of drug
- c) Increases  $\beta_2$  receptor selectivity and bioavailability
- d) Indirect activity

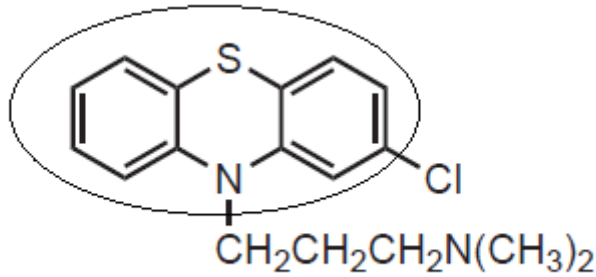
28) In the structure of Acetylcholine (shown below), substitution of  $\alpha$ -methyl group-----.



- a) Increases muscarinic activity
- b) Increases nicotinic activity
- c) Increases antagonistic activity
- d) No change in activity

29) Identify the encircled nucleus in the following.





- a) Dibenzazepine    b) Benzodiazepine    c) Phenothiazine    d) Benzoxazine

30) Which drug is a structural hybrid of meperidine and methadone?

- a) Loperamide    b) Diphenoxylate    c) Fentanyl    d) Pheneridine

31) In the case of thioxanthene type of an antipsychotics more active isomers have ----- configuration.

- a) Cis                  b) Trans    c) E                  d) R

32) Which one of the following drug shows minimal EPS

- a) Pimozide    b) Clozapine    c) Droperidol                  d) Chlorpromazine

33) Codeine is-----.

- a) Methylated analog of morphine                  b) Acetylated analog of morphine  
c) Antagonist of morphine                          d) Metabolite of morphine

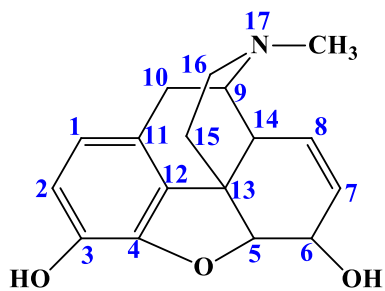
34) The  $\beta$  blocker which contain aryethanolamine scaffold

- a) Esmolol    b) Metoprolol    c) Sotalol    d) Timolol

35) To which chemical class does the anticholinergic drug dicyclomine belong?

- a) Aminoalcohol    b) Aminoamides    c) Amino alcohol esters    d) Amino alcohol ethers

36) The given molecule has how many chiral centers?

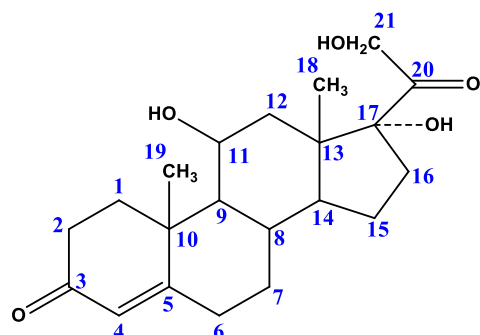


- a) 3    b) 4    c) 5    d) 6

37) Which substituent in celecoxib is responsible precluding binding with COX I enzyme?

a) Sulfamoyl   b) Phenyl   c) Methyl   d) Trifluoromethyl

38) Read the statements given below related to SAR of glucocorticoids and choose the correct option given below.



A: Introduction of 9 $\alpha$ -Fluoro decreases salt retention property

B: Methyl group at 16<sup>th</sup> position can be either  $\alpha$  or  $\beta$  for better glucocorticoidal activity

a) A correct

b) B correct

c) A and B both correct

d) A and B both wrong

39) Which structural feature of morphine is missing in levorphanol?

a) Phenyl ring   b) Epoxide bridge   c) Piperidine ring   d) O3- OH group

40) In case of Phenothiazine -Cl group at 2<sup>nd</sup> position and 3 C chain separating N10 and amino nitrogen is essential because -----.

a) It is important for lipophilicity

b) It gives dopamine like arrangement

c) To maintain potency

d) It increases CNS penetration.

41) Center of acidity in case of Piroxicam can be represented by---

a) -SO<sub>2</sub>NCH<sub>3</sub> group   b) Enolic acid   c) Pyridine ring   d) -OH group

42) Identify the incorrect pair from the following.

a) Fluoxetine: Phenoxyphenylpropylamine

b) Vigabatrine:  $\gamma$ -Vinyl GABA

c) Bethanechol: Carbamate ester

d) Ritodrine: Catechol hydroxyl

43) Which one of the following group can be tolerated in 7<sup>th</sup> position of benzodiazepine ring

a) -NH<sub>2</sub> b) -OH c) -NO<sub>2</sub> d) -CH<sub>3</sub>

44) Find the wrong pair

a) Prazosin : $\alpha_1$  blocker                      b) Guanabenz:  $\alpha_2$  agonist  
c) Phenylephrine:  $\alpha_1$  agonist              d) Phenylephrine:  $\alpha_2$  antagonist

45) Identify the correct statement related to benzomorphan.

a) They are obtained by removal of epoxide bridge of morphine.  
b) They do not contain B, C, E ring of morphine  
c) Cis and Trans isomer have unequal analgesic activity  
d) They are obtained by removal of C ring of morphine

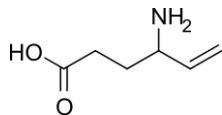
46) Find the odd one out

a) Gallamine              b) Succinylcholine              c) Decamethonium              d) Procyclidine

47) Which of the following benzodiazepine is suitable for treatment in children & old age patients?

a) Diazepam b) Oxazepam c) Temazepam d) Nitrazepam

48) What is the mechanism of action of



a) Inhibit reuptake of GABA                      b) Inhibit GABA transaminase  
c) Inhibit glutamate decarboxylase              d) Blocks GABA receptor

49) Modification of nonrigid opioid like ---- leads to butyrophenone whereas butyrophenones are modified to-----type of antipsychotic.

Complete the statement by selecting the correct pair from the following.

a) Meperidine, Diphenylbutylpiperidine              b) Methadone, Diphenylbutylpiperidine  
c) Meperidine, Benzamide                              d) Methadone: Benzamide

50) Which conformer of acetylcholine binds with the receptor?

a) Synperiplanar              b) Antiperiplanar              c) Synclinal                      d) Anticlinal

