Multiple Choice Questions

PHARMACOLOGY

Pharmacology Department
Faculty of Medicine
Ain Shams University

2019 / 2020

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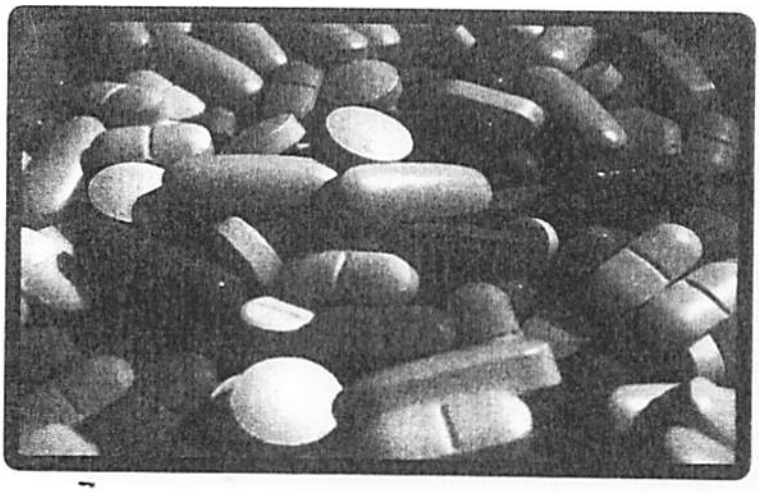

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Contents

Pharmacokinetics

1. The following are **True** concerning diffusion of drugs across cell membranes **EXCEPT**:
   A. Most drugs cross cell membranes primarily by passive diffusion.
   B. Diffusion depends on lipid-solublity.
   C. Acidification of urine hastens excretion of weakly acidic drugs.
   D. Aspirin is mostly non-ionized in the empty stomach.
   E. Drugs can cross cell membrane mainly in non-ionized form.
2. Important factor/s which may govern diffusion of drugs across cell membranes
   A. pKa value of the drug
   B. pH of the medium
   C. Lipid solubility of the drug
   D. Molecular weight of the drug
   E. All of the above
3. Which of the following statements is/are **True**?
   A. Bioavailability after oral administration is determined by hepatic extraction ratio
   B. Dialysis is useful in toxicity of drugs with large volume of distribution
   C. Propranolol increases hepatic first pass metabolism.
   D. Drugs with variable bioavailability include digoxin & phenytoin.
   E. A &D
4. Which of the following is a **True** statement?
   A. Acetylation is a phase I reaction
   B. Theophylline is a drug with saturation kinetics and narrow therapeutic index
   C. A constant amount of a drug with 1^{ST} -order kinetics is eliminated per unit time.
   D. Steady-state plasma concentration of drugs with zero-order kinetics is achieved after 4 $t_{1/2}$.
   E. The first-pass effect is most likely to occur if the drug is given sublingually.

1. C	2. E	3. E	4.B

5. Drug/s reducing hepatic 1st pass metabolism is/are:

A. Rifampicin
C. Erythromycin
B. Propranolol
D. B and C
E. All of the above

6. Clearance is useful in calculation of

A. Maintenance dose.
D. Bioavailability
B. Loading dose.
E. A and C.
C. $t_{1/2}$.

7. Which of the following is a **True** statement concerning drug clearance?

A. Clearance is useful in calculation of loading dose.
B. When extraction ratio is less than 0.2 its clearance is nearly enzyme-dependent.
C. It is inversely proportional to the blood flow to the clearing organ.
D. Lipid solubility increases renal excretion of drugs.
E. It is directly proportional to volume of distribution

8. A main determinant of bioavailability (F) following oral administration is

A. Hepatic extraction ratio (E)
B. Elimination rate constant (Ke)
C. Bioequivalence
D. Volume of distribution
E. All of the above

9. Lipophilicity reduces

A. Absorption
B. Volume of distribution (V_d)
C. Hepatic elimination
D. Renal excretion
E. B and D

5. D	6. E	7. B	8.A	9. D

10. Drugs with small volume of distribution (V_d) are characterized by

A. Limited tissue uptake

B. Dialysis is useful in toxicity

C. Their V_d cannot be less than 5 liters.

D. All of the above.

E. A and B

11. The following characteristic of a drug tends to reduce its volume of distribution

A. Low ionization at physiological pH

B. High Lipid solubility

C. High tissue binding

D. High plasma proteins binding

E. A and D

12. The following drugs do not readily cross to the CNS in meningitis

A. Streptomycin C. Tetracycline

B. Rifampicin D. Penicillins E. A and C

13. The following drugs do not readily cross to the CNS

A. Dopamine C. Atropine

B. Levodopa D. Neostgmine E. A and D

14. The following is/are a phase II reaction/s

A. Reduction C. Acetylation

B. Hydrolysis D. Oxidation E. C and D

15. Microsomal enzymes include

A. Dehydrogenase

B. Esterases

C. CY P450 enzyme system (mixed-function oxidases).

D. Glucoronyl transferase

E. C and D

10. D	11. D	12. E	13. E	14.C	15. E

16. In which organ is the majority of cytochrome P450s most highly expressed?

A. Brain

B. Liver

C. Lung

D. Kidney

E. Small intestine

17. When drug/drug interactions involve inhibition of metabolism, which of the following types of drugs are of the most concern?

A. Drugs with a narrow therapeutic index

B Drugs with a high extraction ratio.

C. Drugs that are highly polar

D. Drugs that are highly bound to albumin

E. Short acting drugs that are used in single doses.

18. Which of the following statements is **False**?

A. Lipid solubility decreases renal excretion of drugs

B. Urine alkalinisation decreases the excretion of weak acids

C. Addition of bicarbonate decreases the absorption of weak acids

D. Excretion is enhanced by increasing polarity

E. Alkaline medium of intestine enhances absorption of weak basic drugs.

19. Extraction ratio (E) of a drug is

A. Fraction of the drug eliminated by the liver.

B. Volume of blood cleared by the liver per unit time.

C. Volume of a fluid cleared from the drug per unit time.

D. Amount of the drug eliminated by the liver

E. None of the above.

16. B	17. A	18. B	19.A

20. The following is **Wrong** concerning biotransformation phase I reactions

A. Include oxidation by CY P450 enzyme system, reduction & hydrolysis

B. Unmask a polar group

C. Convert drug to an easily excreted ionized metabolite.

D. Result in formation of non toxic polar, rapidly eliminated conjugates

E. All drugs become inactive

21. Enzyme inducers include

A. Phenytoin C. Phenobarbitone

B. Carbamazepine D. Rifampicin E. All of the above

22. Enzyme inhibitors include

A. Chloramphenicol C. Erythromycin

B. Ciprofloxacin D. Ketoconazole E. All of the above

23. Which of the following is a **True** statement?

A. Loading dose = steady state concentration (Css) x clearance (CLs).

B. Maintenance dose = steady state concentration (Css) x volume of distribution (V_d).

C. Elimination half life of a drug = 0. 693 V_d divided by CLs.

D. Drugs with zero order kinetics have a fixed half life.

E. Drugs with first order kinetics have an increasing t1/2

24. The following is **not true** concerning factors affecting drug clearance

A. It is inversely proportional to the blood flow to the clearing organ.

B. It is inversely proportional to binding of the drug to plasma proteins

C. It is directly proportional to the activity of secretory processes.

D. It is directly proportional to volume of distribution.

E. A and D

20. D	21. E	22. E	23. C	24.E

25. Drug (s) with saturation kinetics and narrow therapeutic index

A. Phenytoin. C. Salicylates.

B. Theophylline D. A and B. E. All of the above.

26. Which of the following definition (s) is (are) **incorrect**

A. Systemic clearance/ amount of drug cleared from circulation per unit time.

B. Extraction ratio/ fraction of the drug eliminated by the liver.

C. Hepatic clearance / volume of blood cleared by the liver per unit time

D. Plasma half life is directly proportional to volume of distribution

E. A and D..

27. Regarding "first-order kinetics", the following is **Wrong**:

A. Generally applies to high plasma concentration of theophylline

B. The rate of clearance is proportional to concentration

C. More common than zero order kinetics

D. Steady state concentration is reached after multiple dosing

E. Plasma half life is fixed.

28. In "first-order kinetics", the following statement/s is/ are true **Except**:

A. Constant amount of the drug is eliminated per unit time

B. Fixed $t_{1/2}$

C. There is steady-state plasma concentration

D. Elimination rate is directly proportional to plasma concentration

E. The eliminating process is unlimited.

29. In "zero-order kinetics", the following is **Incorrect**

A Half life ($t_{1/2}$) of the drug is different at high and low concentration

B. Constant fraction of the drug is eliminated per unit time

C. Steady-state plasma concentration is not achieved

D. Ethanol is a famous example of a drug with zero-order kinetics

E. The eliminating process is limited.

25. D	26. A	27. A	28. A	29.B

MATCH the pharmacokinetic parameter or term to the appropriate statement.

A. Systemic clearance (CLs)

B. Volume of distribution (Vd)

C. Half-life ($t_{1/2}$)

D. Hepatic extraction

E. Bioequivalence ratio (E)

F. Bioavailability (F)

30. A main determinant of bioavailability (F) following oral administration

31. Represents rate & extent of drug absorption as measured by area under curve

32. Can be calculated for drugs administered intravenously (IV) by dividing the bolus dose administered by the initial resultant plasma concentration

33. Used to describe drugs with identical areas under the curve (AUCs)

34. Can be calculated by dividing rate of elimination by drug concentration

30. D	31. F	32.B	33.E.	34.A

Problem solving I.

Drug A is a basic drug with pKa 9 and follows first order kinetics. The Vd of the drug is 300 L. Clearance of the drug is hepatic.

1. Hepatic clearance is defined as:

   A. Volume of blood cleared from drug per unit time

   B. Amount of drug removed from circulation per unit time

   C. Amount of drug excreted by the kidney per unit time

   D. None of the above

2. Which value should be also known to calculate the initial loading dose:

   A- Plasma half life

   B- Steady state concentration

   C- Extraction ratio

   D- Maintenance dose

   E- A and B

3. The following is true about drug A;

   A. It is better absorbed in stomach

   B. Hemodilysis can be used in treatment of its toxicity

   C. Acidification of urine can enhance its excretion

   D. B and C

1. A	2. B	3. C

Problem solving II.

Drug A is acidic and follows first order kinetics. Its pKa is 3, its clearance is 10 ml/min and its t1/2 is 6 hours.

1. Which value should also be known to calculate the intravenous maintenance dose:

   A. Bioavilability

   B. Steady state concentration

   C. Extraction ratio

   D. Loading dose

   E. A and B

2. The time to reach steady state concentration is about :

   A. 12 -18 hours

   B. 18-24 hours

   C. 24-30 hours

   D, 30 -36 hours

   E. None of the above

3. The following is true about drug A;

   A. It is eliminated by a constant amount per time

   B. Antacids can enhance its absorption

   C. Alkalinization of urine can enhance its excretion

   D. A and C

1.B	2. C	3. C

Pharmacodynamics

1. The following is /are **incorrect** concerning therapeutic index of drugs

   A. It is calculated by dividing ED_{50} by LD_{50}

   B. Can be obtained from the All/None curve

   C. It gives an idea about the safety of the drug

   D. Can be obtained from the graded dose-response curve

   E. A and D

2. The following is /are **incorrect** concerning ED_{50} of drugs

   A. It is the dose that produces 50% of the maximal response in the all/none curve.

   B. It is the dose that cures 50% of cases in graded dose-response curve

   C. It gives an idea about the potency of the drug

   D. The lower the ED_{50} the more potent the drug .

   E. A and B

3. The following may be used to assess drug efficacy in the graded dose-response curve

   A. Slope of the curve.

   B. ED_{50}

   C. Emax

   D. A and C.

4. Regarding a competitive antagonist, which statement is **correct**?

   A. It decreases affinity of the agonist to receptor

   B. Causes downward & non-parallel shift in the dose-response curve

   C. It decreased the maximal effect obtained with agonist

   D. High dose of the agonist cannot overcome its effect

   E. It does not cause change in ED50

1. E	2. E	3. C	4.A

5. Regarding a non competitive antagonist, which statement is **correct**?

A. Binds irreversibly to the recognition site of the receptor.

B. Causes parallel shift to the right in the dose-response curve

C. Causes a decrease in E_{max}.

D. Causes an increase in ED50

E. A and C

6. Regarding a partial agonist, which of the following is/are **incorrect**?

A. In absence of the agonist, it activates the empty receptor.

B. In the presence of the agonist, it acts as an antagonist.

C. Efficacy is less than that of a full agonist.

D. Affinity is less than that of a full agonist.

E. C and D

Cross Match receptors to their second messengers

7. α2 - M2	A. guanylyl cyclase- mediated increase in cyclic GMP
8. Beta	B. G_q - mediated liberation of DAG and IP_3
9. α_1- M1 -M3	C. G_i - inhibition of adenylyl cyclase →↓cAMP
10. Nitric Oxide	D. Gs – stimulation of adenylyl cyclase →↑ cAMP

Cross Match

11. Nicotinic action of Ach	A. Cl^- channels
12. Benzodiazepines	B. Combined Na^+/K+ channels
13. Steroid hormones	C. Receptors linked to Tyrosine Kinase
14. Insulin	D. Intracellular receptor affecting gene transcription
	E. Linked to G_s resulting in increased cAMP

5. E	6. D	7. C	8. D	9.B
10. A	11.B	12.A	13. D	14. C

Cross Match

15. Hypersensitivity	A. Precipitation of porphyria with barbiturates
16. Idiosyncrasy	B. Anaphylaxis with penicillins
17. Mutagenicity	C. Cleft palate with antiepileptics
18. Teratogenecity	D. Peptic ulcer with aspirin
19. Iatrogenic Disease	E. Gene abnormalities with metronidazole

Cross Match

20. Intolerance	A. Lower threshold to a normal pharmacologic action seen at doses lower than therapeutic
21. Cross tolerance	B. Tolerance to a related drug from the same group.
22. Tolerance	C. Acute non-responsiveness, not overcome by increasing dose
23. Tachyphylaxis	D. Reduced responsiveness on repeated intake; overcome by increasing the dose

Cross Match the type of interaction occurring on co-administration of the following drugs

24. Sulfonamides plus trimethoprim	A. Potentiation
25. Barbiturate plus another sedative	B. Synergism.
26. Beta lactamase inhibitors with ampicillin.	C. Summation

Cross Match each drug to its potential drug interactions

27. Rifampicin	A. Theophylline toxicity due to inhibition of its metabolism
28. Erythromycin	B. Bleeding with warfarin due to displacement from plasma proteins
29. Sulfonamides	C. Risk of pregnancy due to increase metabolism of oral contraceptives
30. Aspirin	D. Chelatation of Ca^{2+} & Al^{3+} in antacids
31. Tetracyclines	E. Kernicterus in the newborn due to displacememt of bilirubin from plasma proteins

15. B	16. A	17. E	18. C	19.D	20. A
21. B	22. D	23. C	24. B	25. C	26. A
27.C	28. A	29. E	30. B	31. D	

Cross Match each pharmacogenetic disorder to the drug that might reveal it

32. Precipitation of porphyria	A. Corticosteroids
33. Malignant Hyperthermia or apnea	B. Barbiturates
34. Raised Intraocular Pressure.	C. Succinylcholine
35. Increased risk of neuropathy & hepatitis in slow acetylators	D. Isoniazid

Cross Match each drug to the adverse effect that may follow its sudden withdrawal

36. Alcohol	A. Hypertension
37. Corticosteroids	B. Angina
38. β-blockers	C. Hypoglycemia
39. Clonidine	D. Thromboembolism
40. Warfarin	E. Anxiety & convulsions

32. B 33. C 34. A 35. D
36. E 37. C 38. B 39. A 40. D

Match the following drugs to the most appropriate statement

A. Essential drugs

B. Orphan drugs

C. OTC drugs

D. FDA category -X drugs

E. FDA category- A drugs

F. Prodrugs

41. Drugs needed for treatment of rare diseases

42. Drugs that meet the priority health care needs of the population

43. Drugs safe in pregnancy as no risk was detected in human studies

44. Drugs contraindicated in pregnancy

45. Drugs dispensed without a prescription

46. Inactive drugs that are transformed in the body to active metabolites

41. B	42. A	43.E	44. D	45. C	46. F

47. If the adult dose of a drug is 173 mg, a child with a body surface area of 1 m^2 should receive:

a. 100 mg b. 87 mg c. 120 mg d. 95 mg

48. Drugs X and Y are oral hypoglycemic agents. Drug X at a dose of 50 mg reduces the serum blood glucose by 50 mg/dl. Drug Y at a dose of 5 mg reduces the serum blood glucose by 50 mg/dl. Therefore:

a. Drug X is less efficacious than drug Y

b. Drug X is less potent than drug Y

c. Toxicity of drug y is less than that of drug X

d. Drug Y will have a shorter duration of action than drug X

49. Which of the following receptor types mediate the slowest action?

a. Ion Channels

b. Receptors linked to Tyrosine Kinase

c. G protein-Coupled Receptors

d. Receptors regulating transcription

50. Which of the following is true about oral dosage forms:

A. Coated tablet/ coat dissolves in intestine to avoid gastric irritation

B. Syrup/ aqueous solution of the drug

C. Spansule/ has rapid onset and long duration

D, Elixir/ sweetened aqueous solution of the drug

51. Which of the following favors most, patient's compliance?

A. Metered-dose inhaler

B. Intramuscular injection

C. Subcutaneous implants

D. Vaginal suppositories

47. A	48. B	49.D	50. C	51. C

52. If the adult dose of a drug is 17 mg, a child aged 5 years should receive:

A. 12 mg B. 5 mg C. 10 mg D. 7 mg

53. Drugs X and Y are antihypertensive agents. Drug X in the maximum prescribing dose reduces the blood pressure by 30 mmHg. Drug Y in the maximum prescribing dose reduces blood pressure of the same patient by 20 mmHg. Therefore:

A. Drug Y is less efficacious than drug X

B. Drug X is more potent than drug Y

C. Toxicity of drug X is less than that of drug Y

D. Drug X will have a shorter duration of action than drug Y

54. The fastest neurotransmitters activate the following type of receptors:

A. Ion Channels

B. Receptors linked to Tyrosine Kinase

C. G protein-Coupled Receptors

D. Receptors Regulating Transcription

55. The following is a suitable route for irritant drugs:

A. Intravenous

B. Intramuscular

C. Subcutaneous

D. None of the above

56. If the adult dose of a drug is 10 mg, a child weighing 21 Kg should receive:

A. 1 mg B. 3 mg C. 6 mg D. 9 mg

57. The flowing route is used only for topical drug administration

A. Skin

B. Inhalation

C. Intranasal

D. Rectal

E. None of the above

52. B	53. A	54.A	55.A	56. B	57. E

AUTONOMIC PHARMACOLOGY

Adrenergic Drugs

Cross match the following to their hemodynamic effects

1.Norepinephrine A. Decreases diastolic & mean blood pressure & increases heart rate

2. Isoprenaline B. Increases mean blood pressure & increases heart rate

3.Epinephrine C. Prodrug, increases blood pressure with reflex vagal bradycardia

4. Midodrine D. Marked increase in blood pressure with reflex bradycardia

Cross match the following to their hemodynamic effects

5. Phenylephrine A. Renal vasodilator, positive inotrope & chronotrope with - vasopressor effects in high dose

6. Dopamine B. Weak positive inotrope; powerful splanchnic vasodilator

7. Dobutamine C. Positive inotrope, minimal effect on blood pressure or heart rate

8. Dopexamine D. Increase blood pressure with reflex vagal bradycardia

Cross match each drug to its mechanism of action

9. β-1-selective, positive inotrope

10. Splanchnic vasodilator that activates β_2, D_1 & D_2 receptors

11. Peripheral vasodilator that activates D-1 receptor

12. Vasopressor that activates α-1 receptor

A. Midodrine

B. Dobutamine

C. Fenoldopam

D. Dopexamine

E. Salbutamol

13. The following agent does not stimulate β_1-receptors:

A. Isoprenaline C. Dopexamine

B. Dobutamine D. Dopamine

14. The following agent does **not stimulate** β_2-receptors:

A. Ritodrine C. Dopexamine

B. Celiprolol D. Dobutamine

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

15. The following agent does **not act** on α_1-receptors:

A. Tamsulosin C. Dobutamine

B. Carvedilol D. Labetalol E. Dopamine

16. The following agent does **not act** on dopaminergic receptors:

A. Dobutamine

B. Dopamine

C. Dopexamine

D. Fenoldopam

17. Which of the following can activate dopaminergic as well as adrenergic receptors?

A. Dopamine C. Dopexamine

B. Dobutamine D. A & C

18. In paroxysmal supraventricular tachycardia with hypotension, reflex bradycardia may be induced by:

A. Isoprenaline C. Dobutamine

B. Clonidine D. Phenylephrine

Cross match each drug to its mechanism of action

19. Midodrine

20. α- methyl dopa

21. Fenoldopam

22. Clonidine

23. Salmeterol

A. Long acting β2 agonist used in asthma

B Short acting β2 agonist used in asthma

C. Peripheral vasodilator that activates D1 receptor used in hypertensive crisis

D. Vasopressor that activates α 1 receptor used in postural hypotension

E. Central α_2- and imidazoline receptor agonist used in hypertensive urgency

F. Central α_2 receptor agonist used in pregnant hypertensive patients

15. C 16. A 17. D 18. D

19. D 20. F 21. C. 22. E 23. A

24. Salbutamol replaced epinephrine in treatment of bronchial asthma because

A. It seldom induces tremors or tolerance on long term use.

B. Longer duration of action since it is not metabolized by MAO or COMT.

C. No cardiac complications in regular doses.

D. Can be given by many routes

E. All except A

25. The following indication/s of epinephrine is/ are entirely due to its α effect

A. Anaphylactic shock C. Prolong action of local Anesthetics

B. Cardiac Arrest D. Epistaxis E. C and D

Cross match the following sympathomimetics to their uses

26. Terbutaline/ritodrine A. Alpha agonist topical nasal decongestant

27. Epinephrine B. Dual acting systemic nasal decongestant

28. Oxymetazoline C. Directly acting hemostatic in epistaxis

29. Pseudoephedrine D. Beta $_2$ agonist in premature labor/threatened abortion

Cross match the following adrenergic drugs to their indications

30. β_2 agonists A. Chronic refractory HF/acute HF/ cardiogenic shock

31. β_1 agonists B. Asthma/threatened abortion/premature labor

32. α_1 agonists C. Thyrotoxicosis

33. α_2 agonists D. Fundus examination/allergic conjunctivitis

E. Hypertension

34. Dopamine is preferred to dobutamine in cardiogenic shock with hypotension or renal impairment because:

A. D-1 effect of dopamine induces renal vasodilation & increases renal blood flow.

B. Dopamine induces alpha- mediated vasopressor effect.

C. Beta-1 effect of dobutamine increases arrhythmia compared to dopamine.

D. A and B.

E. All of the above

24. E	25. E	26. D	27. C	28. A	
29. B	30. B	31. A	32. D	33. E	34. D

35. Regarding prazosin, the following is **not true**

A. It is used in benign prostatic hyperplasia.

B. Doxazocin is preferred to it as it is longer acting with less 1st dose hypotension

C. Tamsulosin is preferred to it in benign prostatic hyperplasia as it induces minimal change in BP as it acts on α_{1A} not α_{1B} receptors.

D. It causes mydriasis.

36. The following is **not** an adverse effect of α blockers

A. 1st dose postural hypotension.

B. Tachycardia, marked with non-selective agents

C. Fluid retention.

D. Hypertriglyceridaemia

E. Impaired ejaculation and sexual dysfunction

Cross match the following drugs to their indication

37. Phenoxybenzamine A. Selective α-1 blocker/ benign prostatic hyperplasia

38. Prazosin B. Non-selective, long acting α blocker / pheochromocytoma

39. Phentolamine C. α-1/ β blocker / most hypertensive crisis except heart failure

40. Labetalol D. Non-selective, short acting α blocker/extravasation of α agonists / hypertensive crisis in pheochromocytoma /clonidine rebound

41. The following is **not correctly** matched to its adverse effect

A. Clonidine/ rebound hypertension even on missing a single dose

B. Bisoprolol/ rebound tachycardia & anginal pain on sudden withdrawal

C. Phenylepherine/ rebound nasal congestion

D. Midodrine/ hypotension and tachcardia

42. The following agent/s is/are a prodrug:

A. Clonidine C. Midodrine

B. Pseudoephedrine D. α- methyl dopa. E. C and D

35. D	36.D	37. B	38. A
39. D	40. C	41. D	42. E

43. The following adverse effects are seen with both methyl dopa & clonidine

A. Sedation, dry mouth and sexual dysfunction

B. Bradycardia and salt and water retention

C. Depression, parkinsonism & hyperprolactinemia

D. Hepatitis, hemolytic anemia, systemic lupus

E. A and B

44. The following difference/s between propranolol & other β- blockers is/are **True**

A. Betaxolol has no membrane-stabilizing activity, thus preferred in glaucoma as it does not induce corneal anesthesia.

B. Pindolol has intrinsic sympathomimetic activity, induces less bradycardia thus preferred in hypertensives with low resting heart rate, but not in angina.

C. Carvedilol has vasodilator & antioxidant effects, useful in hypertension & in chronic heart failure.

D. Bisoprolol is cardioselective with less risk of Raynaud's phenomenon and less delay in recovery from hypoglycemia.

E. All of the above

Cross Match the following beta blockers to the suitable statement

45. Pindolol	A. long acting hydrophilic preferred in hepatic dysfunction
46. Nadolol	B. Has no membrane-stabilizing activity, preferred in glaucoma
47. Timolol	C. Has intrinsic sympathomimetic activity not used in angina
48. Nebivolol	D. Releases endothelial nitric oxide

49. The following adverse effect of β blockers is not due to β-1 blockade:

A. Bradycardia .

B. Heart failure.

C. Hypotension.

D. Prolongation of insulin-induced hypoglycemia.

43. E	44. E	45. C	46. A
47. B	48. D	49. D	

50. The following adverse effect of β blockers is not due to β2 blockade:

A. Bronchospasm.
C. Cold extremities.
B. Prolong insulin-induced hypoglycemia.
D. Hypotension

51. Esmolol is used in:

A. Perioperative hypertension
C. Supraventricular arrhythmias
B. Chronic heart failure
D. A and B
E. A and C

52. Non- selective βB with vasodilator effect 2ry to α blockade

A. Labetalol
C. Nebivolol
B. Carvedilol
D. Celiprolol
E. A and B

53. A patient with severe hypotension is given norepinephrine. Which of the following drugs antagonizes both its vascular and cardiac actions?

A. Atenolol
C. Carvedilol
B. Esmolol
D. Celiprolol
E. Prazosin

54. Hydrophilic beta blockers have a long duration of action **Except** :

A. Esmolol
C. Nadolol
B. Atenolol
D. None of the above

55. Esmolol has an ultra-short duration of action due to

A. Its lipophilic nature.
B. Its hydrophilic nature
C. Hydrolysis by plasma esterases.
D. A and C

56. β- mediated antihypertensive effects of bisoprolol do **not include**:

A. Decrease renin release
B. Resetting of baroreceptors
C. Negative inotropic & chronotropic effects
D. Vasodilatation of skeletal blood vessels

50. D	51. E	52. E	53. C
54. A	55. C	56. D	

57. The following is/are **not true** concerning anti-anginal effects of β-blockers

A. Blockade of renin release.

B. Reduction in heart rate & myocardial contractility.

C. Reduction in blood pressure

D. Coronary vasodilation in vasospatic angina

E. Inhibition of lipolysis resulting in decreased fatty acid utilization.

58. The following is/are **true** concerning anti-arrhythmic effects of β-blockers

A. Decrease SAN rate & AVN conduction

B. Slow automaticity of sympathetically-induced ectopic focus.

C. Both of the above

D. None of the above

59. In prophylaxis of oesophageal varices, β2 blocking effect (s) of non-selective ß blockers reduce (s) portal blood flow 2^{ry} to:

A. Splanchnic vasoconstriction

B. Reduction of cardiac output.

C. Both of the above

D. None of the above

Cross match each β blocker with its use:

60. Propranolol A. Hypertension & chronic heart failure

61. Betaxolol B. Acute dissecting aortic aneurysm & pheochromocytoma

62. Labetalol C. Open-angle glaucoma

63. Carvedilol D. Prophylactic in oesophageal varices & migraine & in thyrotoxicosis

57. D	58. C	59. A	60. D
61. C	62. B	63. A	

Cholinergic Drugs

1. The fusion of storage vesicles with synaptic membranes and subsequent release of acetylcholine following an action potential is:

   A. Dependent on extracellular chloride levels

   B. Dependent on calcium influx through voltage sensitive calcium channels

   C. Mediated via a sodium-dependent carrier

   D. Facilitated via botulinium toxin

   E. Blocked by the drug hexamethonium

2. Activation of muscarinic receptors does **NOT** result in

   A. Increased secretion from sweat glands

   B. Contraction of bronchial smooth muscle

   C. Dilation of pupils due to relaxation of the sphincter muscle of the iris

   D. Contraction of the detrusor muscle of the bladder

   E. Decreased conduction velocity through the AV node

3. The nicotinic receptor does not mediate the acetylcholine effect at the following site

   A. Adrenal medullary cells C. Sympathetic ganglion

   B. Skeletal muscle D. Parasympathetic ganglion E. Sweat glands

Cross match each cholinomimetic drug to its suitable indication:

4. Pilocarpine
5. Bethanechol
6. Neostigmine
7. Physostigmine

A. Alzheimer dementia

B. Glaucoma/miotic/hair tonic/xerostomia

C. Atropine Toxicity

D. Megacolon

E. Antidote for curare/myasthenia gravis

1. B	2. C	3. E	4. B	5. D	6. E	7. C

8. Which of the following is **WRONGLY** matched to its indication?

A. Donepezil / Alzheimer dementia

B. Pyridostigmine / Myasthenia gravis

C. Cevemiline / Hair tonic

D. Bethanechol / Paralytic ileus

9. Regarding neostigmine, which of the following is **INCORRECT ?**

A. Counteracts mydriatics.

B. Quaternary amine & cannot cross BBB

C. Preceded by atropine to block muscarinic effects

D. Shorter duration than pyridostigmine

10. Pyridostigmine is drug of choice in treatment of :

A. Atropine toxicity -

B. Myasthenia gravis

C. Alzheimer

D. Megacolon

11. The only cholinomimetic that can antagonize atropine after fundus examination is:

A. Pilocarpine

B. Physostigmine

C. Ecothiophate

D. Edrophonium

12. A patient presents at the ER with the following symptoms: rhinorhea, salivation, confusion, lacrimation, urinary and fecal incontinence, bradycardia, muscle fasiculations and seizures. Which of the following agents is most likely to be responsible for the patient's symptoms?

A. Scopolamine

B. Pralidoxime

C. Malathion

D. Atropine

13. The following is **not** an adverse effect of cholinomimetics:

A. Bronchospasm

B. Tachycardia

C. Diarrhea

D. Aggravate peptic ulcer

8. C	9. A	10. B	11. C	12. C	13. B

14. Which drug is **WRONGLY** matched to its action in organophosphorus poisoning?

A. Atropine / for CNS and muscarinic effects

B. Diazepam / for Convulsions

C. Neostigmine / for nicotinic effects

D. Pralidoxime / cholinesterase regenerator

15. Which of the following is **Not** a contraindication of cholinergic agonists:

A. Asthma

B. Urinary retention

C. Peptic ulcer

D. Myocardial infarction

E. Intestinal obstruction

16. Hyoscine differs from atropine in all the following **Except**

A. More CNS depression

B. More effective antiemetic.

C. Longer acting mydriatic .

D. Pure antagonist thus does not induce initial bradycardia.

17. The following are therapeutic uses of atropine rather than atropine substitutes **except**

A. Organophosphate poisoning.

B. Asthma & COPD.

C. Hyperactive carotid sinus - heart block.

D. Travellers diarrhea

18. Atropine is used as pre-anesthetic medication due to all the following **EXCEPT:**

A. It blocks the cardiac muscarinic receptors.

B. It decreases blood pressure.

C. It decreases vomiting.

D. It induces bronchodilatation and stimulates respiration.

14. C	15. B	16. C	17. B	18. B

Cross match the following atropine substitute to their uses

19. Hyoscine butylbromide	A. Urinary incontinence
20. Benztropine	B. Antispasmodic
21. Oxybutinin	C. Anti-parkinsonian
22. Glycopyrrolate	D. Iridocyclitis
23. Homatropine	E. Cycloplegic in children
	F. Preanaesthetic medication

24. The following **is not** an adverse effects of atropine

A. Confusion. C. Dry mouth.

B. Bradycardia. D. Blurred vision E. Urine retention

25. Treatment of atropine poisoning **does not** include

A. Gastric lavage. C. Diazepam.

B. Neostigmine. D. Cooling blankets

26. Which of the following adverse effects would **NOT** be expected with scopolamine?

A. Blurred vision

B. Diaphoresis (increased sweating)

C. Constipation

D. Confusion

E. Xerostomia (dry mouth)

Cross match each neuromuscular blocker to its most suitable feature:

27. Mivacurium	A. Aternative to succinylcholine for endotracheal intubation
28. Vecuronium	B. Preferred in cardiac patients
29. Pancuronium	C. Avoided in cardiac patients
30. Rocuronium	D. Shortest acting

19. B	20. C	21. A	22. F	23. D	24.B
25. B	26. B	27. D	28. B	29. C	30. A

Cross match each neuromuscular blocker to its most suitable feature:

31. Mivacurium	A. May be given in renal or liver disease
32. Atracurium	B. Hydrolyzed by pseudo-cholinesterase
33. Vecuronium	C. Avoided in renal disease
34. Pancuronium	D. May be given in renal but not in liver disease.

35. Neuromuscular blocker(s) used for endotracheal intubation is/are:

A. Pancuronium C. Succinylcholine

B. Rocuronuim D. B&C

36. Competitive neuromuscular blocker(s) used for endotracheal intubation is/are:

A. Gantacurium C. Succinylcholine

B. Rocuronuim D A and B

37. Regarding the management of succinylcholine apnea, which is **CORRECT?**

A. Dantrolene preceded by atropine in Phase II block

B. Neostigmine preceded by atropine in Phase I block

C. Neostigmine preceded by atropine in Phase II block

D. Physostigmine preceded by atropine in Phase II block

38. Fasiculations produced by succinylcholine do not induce

A. Postoperative muscle pain C. Hypokalemia

B. Vomiting and aspiration pneumonia D. Increase intraocular pressure

31. B	32. A	33. D	34. C
35. D	36. D	37. C	38. C

Cross match each spasmolytic drug to its most suitable feature and use:

39. Diazepam	A. α_2-agonist/ in multiple sclerosis
40. Baclofen	B. GABA-B agonist/in multiple sclerosis
41. Tizanidine	C. GABA-A agonist/in most causes of spasticity
42. Dantrolene	D. Used locally in Wrinkles
	E. Used in Malignant hyperthermia

43. At the end of operation, the action of neuromuscular blocker is reversed by:

A. Atropine preceded by neostigmine

B. Neostigmine preceded by atropine

C. Atropine preceded by physostigmine

D. Physostigmine preceded by atropine

44. All the following are contraindications to succinylcholine **EXCEPT:**

A. Extensive muscle trauma

B. Family history of malignant hyperthermia

C. Burns

D. During electroconvulsive therapy

45. A medication/s that triggers malignant hyperthermia in susceptible individuals?

A. Halothane

B. Succinylcholine

C. Rocuronium

D. Atracurium

E. A and B

46. Which of the following drugs is **not correctly** matched to its clinical use?

A. Atropine/ paroxysmal supraventricular tachycardia.

B. Bethanechol/ post operative paralytic ileus & urine retention

C. Pilocarpine/ xerostomia associated with Sjogren's syndrome

D. A and C

E. A and B

39. C	40. B	41. A	42. E
43. B	44.D	45. E	46. A

MATCH the drug to the statement that best describes the drug.

A. Pilocarpine
B. Edrophonium
C. Atropine
D. Succinylcholine
E. Gantacurium
F. Sugammadex
G. Pralidoxime

47. This drug is rapidly hydrolyzed in the liver and plasma by esterases.
48. Relatively contraindicated in patients with benign prostatic hypertrophy (BPH).
49. Exerts its pharmacologic effects via inhibition of acetylcholinesterase.
50. Useful in glaucoma due to its ability to activate muscarinic receptors in the eye.
51. Reverses neuromuscular blockade by rocuronium, not preceeded by atropine.
52. Its effects on neuromuscular junction may be reversed by neostigmine or cysteine.

MATCH the drug to the statement that best describes the drug.

A. Acetylcholine
B. Mivacurium
C. Atropine
D. Bethanechol
E. Pralidoxime
F. Propranolol
G. Succinylcholine
H. Vecuronium

53. A treatment for organophosphate poisoning which antagonizes central effects
54. Resistant to hydrolysis by cholinesterase
55. A treatment for organophosphate poisoning which prevents "aging" of cholinesterase and reactivates the enzyme
56. A depolarizing neuromuscular blocker used in electroconvulsve therapy
57. Used only by instillation into the eye after cataract operations
58. Susceptible to degradation by cholinesterase
59. A non-depolarizing neuromuscular blocker used as an adjunct to anesthesia & in mechanical ventillation

47. D	48. C	49. B	50. A	51. F	52. E	53. C
54. D	55. E	56. G	57. A	58. A, B, G		59. B, H

AUTACOIDS

1. **Which of the following is correct concerning second generation antihistamines?**
   A. Do not exhibit any autonomic effects.
   B. More lipophilic than first generation.
   C. Inverse agonists at H1 receptors.
   D. Given in a single daily dose .
   E. C and D

2. The following is **correct** concerning second generation antihistamines
   A. More CNS depression than first generation.
   B. More effective antitussives than first generation agents.
   C. Azelastine is an important member.
   D. Diphenhydramine is the most effective of the second generation agents.
   E. Effective OTC hypnotics

3. The following is **not** an adverse effect of first generation antihistamines
   A. Drowsiness. C. Hypertension.
   B. Urine retention. D. Constipation

4. The following is **not** a therapeutic use of first generation antihistamines
   A. Antiemetics in motion sickness .
   B. OTC hypnotics. C. Peptic ulcer. D. Parkinsonism E. OTC antitussives

5. The following is **not** a histamine liberator:
   A. Morphine B. Hydralazine C. Cromolyn D. Atropine

Cross Match the following serotoninergic drugs to their indication

6. Buspiron — A. $5\text{-HT}_{1B/1D}$ agonist; anti-migraine drug.
7. Tegaserode — B. $5HT_3$ receptor antagonist used as antiemetic.
8. Sumatriptan — C. 5-HT_4 agonist; prokinetic in irritable bowel syndrome.
9. Ondanosetron — D. 5-HT_{1A} agonist; selective anxiolytic.

1. E	2. C	3. C	4. C	5. C
6. D	7. C	8. A	9. B	

Cross MATCH each of the following drugs to the most suitable indication

10. Glaucoma
11. Labour induction
12. Antiplatelet in dialysis machine
13. Maintains patency of ductus arteriosus
14. Closes patent ductus arteriosus

A. Alprostadil
B. Epoprostenol
C. Latanoprost
D. Dinoprostone
E. Indomethacin

Cross MATCH each of the following drugs to the most suitable indication

15. Prevention of premature labor & dysmenorrhea
16. Erectile dysfunction
17. Gastroprotective with NSAIDs
18. Pulmonary hypertension

A. Alprostadil
B. Epoprostenol
C. Misoprostol
D. NSAIDs

19. A prostaglandin analog preferred for labour induction & abortion since it induces bronchodilation.

A. Dinoprostone
B. Dinoprost
C. Carboprost
D. Alprostadil

Cross MATCH each prostaglandin analoge to its adverse effect

20. Gradual change in iris color
21. Diarrhea
22. Bronchospasm
23. Penile pain

A. Alprostadil
B. Dinoprostone/misoprostol
C. Latanoprost
D. Carboprost

24. Which of the following is a lipooxygenase inhibitor?

A. Zileuton
B. Zafirlukast
C. Zolpidem
D. Montalukast
E. Aspirin

10. C	11. D	12. B	13. A	14. E
15. D	16. A	17. C	18. B	19. A
20.C	21.B	22. D	23.A	24. A

Cross MATCH each drug to its use in patients with migraine

25. Ergotamine	A. Antiepileptic for migraine prophylaxis
26. Valproate	B. Antidepresant for migraine prophylaxis
27. Timolol	C. Initial therapy for moderate to severe cases
28. Sumatriptan	D. Mild infrequent migraine attacks
29. NSAIDs/Acetaminophen	E. Beta blocker for migraine prophylaxis
	F. Of choice in prolonged or frequent headaches

Cross MATCH each drug to its specific feature during management of migraine:

30.Metoclopromide	A. Long term use results in valvular heart disease .
31. Ergotamine	B. Suppresses firing of trigeminal nerve \
32. Sumatriptan	C. Added to ergotamine to increase its absorption
33. Topiramate	D. If used with SSRIs may result in serotonin syndrome

34. Regarding adverse effects and precautions with sumatriptan, which is **incorrect**?

A. Unpleasant taste with nasal spray

B. Chest pressure

C. Hypotension

D. Serotonin syndrome with SSRIs.

E. Contraindicated in patients with ischemic heart disease.

35. Regarding adverse effects of ergotamine, Which is **incorrect**?

A. Nausea and vomiting

B. Chest pressure

C. Vasospasm and gangrene ; avoid in peripheral vascular disease.

D. Valvular heart disease with long term use.

E. Hypotension

25. F	26. A	27. E	28. C	29. D					
30. C	31. A	32. D	33. B	34. C	35. E				

Problem solving

A female patient aged 40 years came to the emergency room suffering from severe unilateral headache and vomiting and acute attack of migraine was diagnosed. She received intranasal drug A, after which the attack was terminated and she was discharged from the hospital with a prescription containing anticonvulsant drug B for prophylaxis against migraine.

1. **Drug A is most probably:**
   A. Clonidine
   B. Sumatriptan
   C. Ergotamine tartrate
   D. Acetaminophen

2. **Mechanism of action of drug A is:**
   A. $5HT_2$ receptor antagonist
   B. $5HT_{1B/D}$ agonist
   C. Inhibition of prostaglandin synthesis
   D. Central alpha 2 agonist

3. **Drug A is useful in terminating acute attack of migraine primarily due to:**
   A. Inhibition of release of pro-inflammatory peptide; CGRP.
   B. Vasoconstriction of dural blood vessels
   C. Inhibition of vomiting center
   D. Inhibition of prostaglandin synthesis
   E. A and B

4. **Drug B is probably:**
   A. Verapamil
   B. Propranolol
   C. Valproate
   D. Clonidine

1. B	2.B	3. E	4. C

RENAL PHARMACOLOGY

1. The following diuretic is **NOT** secreted through the renal tubules:
   A. Hydrochlorothiazide
   B. Spironolactone
   C. Frusemide
   D. Triamterene
2. Loop diuretics are preferred to thiazides in
   A. Fluid overload due to heart failure
   B. Resistant hypertension due to volume expansion
   C. Sulfonamide hypersensitivity
   D. A and B
   E. All of the above
3. All of the following statements are correct **except:**
   A. Spironolactone antagonizes aldosterone receptor- decreasing synthesis of a protein that stimulates Na+ pump.
   B. Amiloride acts independent of aldosterone, blocking Na+ channels directly.
   C. Vasodilator action of thiazides is the basis for their antihypertensive effect
   D. Loop diuretics release PGs which result in vasodilation of efferent arteriole.
   E. Venodilation induced by loop diuretics is useful in acute pulmonary edema.
4. A diuretic inhibiting water reabsorption more than Na^+ with potent dehydrating effect
   A. Mannitol
   B. Frusemide
   C. Thiazides
   D. A or B
5. Hyponatremia can be aggravated with all of the following except:
   A. Carbamazepine
   B. Hydrochlorothiazide
   C. Furosemide
   D. Metolazone

1. B	2.D	3. D	4. D	5.C

6. In CHF with hyponatremia due to excess ADH, the most useful diuretic is:

A. Mannitol

B. Acetazolamide

C. Furosemide

D. Spironolactone.

7. Chlorothalidone is **NOT** useful in:

A. Edema of renal impairment

B. Hypertension with osteoporotic patient.

C. Hypercalcuria

D. Nephrogenic diabetes insipidus.

E. A and B

8. Complications of thiazide diuretic therapy do NOT include:

A. Hyperlipidemia & glucose intolerance

B. Hyponatremia., hypokalemia & metabolic alkalosis.

C. Hypercalcuria

D. Hyperuricemia.

9. Indapamide has the following characters:

A. Can be given in sulfonamide allergy

B. It has less metabolic side effects than thiazides

C. It is an important member of loop diuretics

D. A and B

10. In impaired renal function, an effective thiazide-like diuretic is:

A. Hydrochlorothiazide

B. Chlorthalidone

C. Metolazone

D. None of the above

11. Frusemide and hydrochlorothiazide have opposite effects on

A. Potassium excretion.

B. Magnesium excretion

C. Calcium excretion

D. Uric acid excretion

6. C	7. A	8. C	9. B	10. C	11. C

12. The following infusion is the most useful therapy for severe hypercalcemia:

A. Spironolactone plus saline. C. Furosemide plus saline.

B. Mannitol plus saline. D. Hydrochlorothiazide plus saline.

13. Furosemide is useful for the treatment of the following conditions **except:**

A. Acute pulmonary edema C. Hypertensive encephalopathy

B. Acute renal failure D. Hypercalcuria

14. The following is **NOT** true concerning refractoriness to loop diuretics

A. The diuretic is mixed with albumin and given IV.

B. Triamterene counteracts increased Na^+ reabsorption, 2^{ry} to hypertrophy of distal tubular cells

C. Increase furosemide dose to 5 folds

D. Spironolactone inhibits aldosterone dependent Na^+ reabsorption

15. Risk of ototoxicity with frusemide is increased by

A. Ampicillin C. Both of the above

B. Aminoglycosides D. None of the above

16. Risk of interstitial nephritis with frusemide is increased by

A. Cephalosporin C. Both of the above

B. Alprostadil D. None of the above

17. Antihypertensive effect of frusemide is deccreased by

A. NSAIDs C. Spironolactone

B. Epoprostenol D. Corticosteroids E. A and D

18. The following is/are **NOT** common between hydrochlorthiazide & frusemide:

A. Hypokalemia C. Venodilation

B. Hyperuricemia D. Ototoxicity E C and D

12. C	13. D	14. B	15. B	
16. A	17. E	18. E		

19. Triamterene differs from spironolactone in all the following **except**

A. Blocks Na^+ channels directly independent of aldosterone

B. Triamterene has a more delayed onset of action & is longer acting

C. It is preferred to spironolactone in treatment of hypomagnesemia.

D. It does not induce gynecomastia as it has no antiandrogenic effect

20. In patients with sulfonamide allergy, we can use:

A. Hydrochlorothiazide C. Bumetanide E. Acetazolamide

B. Ethacrynic acid D. Frusemide

21. Uses of acetazolamide include all the following **except:**

A. Urinary calcium phosphate stones

B. Emphysema and high altitude sickness

C. To alkalinize urine for excretion of salicylates

D. To alkalinize urine for excretion of barbiturates

22. Mannitol may be useful in all the following conditions **except**:

A. Treatment of increased intracranial pressure.

B. Treatment of increased intraocular pressure.

C. Treatment of acute renal failure and acute pulmonary edema..

D. Prophylaxis in acute renal failure.

23. The following statements about triamterene are correct **except**:

A. Weak diuretic with short duration of action.

B. Used in hypokalemia & hypomagnesemia

C. May induce gynecomastia.

D. May induce metabolic acidosis.

24. The following can cause hypokalemia **except**:

A. NSAIDs C. Salbutamol

B. Amphotericin D. Corticosteroids.

19. B	20. B	21. A	22.C	23. C	24.A

25. NSAIDs have the following renal adverse reactions **except**:

A. Reduced glomerular filtration in hypovolemic patients.

B. Salt and water retention

C. Hypokalemia.

D. Low dose aspirin results in hyperuricemia.

E. Nephrotoxicity.

26. All of the following drugs cause metabolic acidosis **except**:

A. Metformin. C. Spironolactone.

B. NSAIDs D. Thiazides.

Cross match each diuretic to the specific precaution in renal impairment

27. Dose should be increased 5 times
28. Preferred thiazide like preparation
29. May precipitate heart failure
30. May cause hyperkalemia

A. Frusemide
B. Mannitol
C. Metolazone
D. Bumetanide
E. Spironolactone

Cross Match each diuretic with its site of action

31. Torsemide — A. 2 Cl-/Na+/K+ / ascending limb of loop of Henle
32. Thiazides — B. $NaHCO_3$ / proximal tubules
33. Spironolactone — C. NaCl / early part of distal tubule
34. Acetazolamide — D. Na+/K+/H+ exchange/ distal tubule

25. C	26.D	27. A	28. C	29. B
30. E.	31. A	32. C	33. D	34. B

Cross Match

35. Frusemide — A. Used in Ca stone due to hypercalcuria

36. Hydrochlorothiazide — B. Used in hypomagnesemia

37. Amiloride — C. Used in hypercalcemia

38. Acetazolamide. — D. Induces Ca stone formation due to alkalinization of urine

39. Patient with history of sulfonamide hypersensitivity, suffered head injury with brain edema, which of the following combinations is best for him?

A. Acetazolamide and mannitol

B. Metolazone and mannitol

C. Dexamethazone and frusemide

D. Dexamethazone and mannitol

40. Which of the following statements is **CORRECT?**

A. Loop diuretics are preferred to thiazides in sulfonamide hypersensitivity.

B. Loop diuretics release PGs which result in vasodilation of efferent arteriole.

C. Thiazides inhibit water reabsorption more than sodium reabsorption.

D. Hyponatremia can be aggravated by loop diuretics.

E. None of the above.

41. Which of the following diuretics is matched with its risk in renal impairment:

A. Mannitol/ risk of precipitation of acute heart failure

B. Chlorothalidone /risk of hyperkalemia

C. Spironolactone/risk of hypokalemia

D. Frusemide/ risk of reduction of GFR

E. Acetazolamide/ risk of dehydration

35. C 36. A 37. B 38. D
39.D 40. E 41. A

42. First choice line of treatment of edema of liver failure

A. Low dose spironolactone + chlorothalidone

B. High dose spironolactone

C. Low dose spironolactone + frusemide

D. High dose frusemide

E. High dose chlorothalidone

43. The following are true about pharmacological action of drugs used in treatment of hyperkalemia EXCEPT:

A. Intravenous calcium/ stabilization of myocardial membrane

B. Insulin/ increased potassium movement into cells

C. Beta 2 agonists inhalation/increased potassium loss

D. Loop diuretics/ removal of potassium from body

E. Cation exchange resins/inhibition of intestinal potassium absorption

42. B	43. C

CARDIOVASCULAR PHARMACOLOGY

1. Nitric oxide is NOT involved in the vasodilator effect of

A. Nitrates
B. Nitroprusside
C. Carvedilol
D. Nebivolol
E. C and D

2. A nitric oxide donor that may induce cyanide toxicity

A. Nitrates
B. Nitroprusside
C. Nicardipine
D. A and B

3. All the following are indications of nitrates except

A. Right ventricular infarction.
B. CHF & acute pulmonary edema.
C. Angina & acute myocardial infarction
D. Hypertensive emergencies.

4. The following is (are) WRONG

A. Trimetazidine is an antianginal that increases myocardial glucose metabolism
B. Ivabradine is an antianginal that selectively inhibits pacemaker I_f current
C. Dronedarone is a class III antiarrhythmic drug with a high content of iodine
D. Tolerance to nitrates is avoided by allowing an 8 hr/day nitrate free period.
E. C and D

5. Nitrates reduce work done by heart in angina mainly through

A. Reducing heart rate
B. Redistribution of blood to subendocardial ischemic areas
C. Vasodilation of stenosed large epicardial coronary arteries & collaterals
D. Vasodilation of venules with reduction of venous return & preload

1. C	2.B	3. A	4. C	5.D

6. Long acting nitrate preparation with no 1st pass hepatic metabolism

A. Nitroglycerin

B. Isosorbide dinitrate

C. Isosorbide mononitrate

D. B or C

7. Nitrate preparation used for termination of an acute attack of angina

A. Nitroglycerin

B. Isosorbide dinitrate

C. Isosorbide mononitrate

D. A or B

8. Reduction of heart rate by beta blockers in angina

A. Blunts the increase in heart rate & blood pressure during exercise

B. Controls heart rate at rest (50- 60 /min)

C. Increases diastolic period resulting in increased coronary filling in diastole

D. Reduces reflex tachycardia and worsening of angina by nitrates

E. All of the above

9. Worsening of anginal pain may result from:

A. Abruptly stopping nitrates

B. Reflex tachycardia caused by nitrates

C. Administration of beta blockers in vasospastic angina

D. Administration of beta blockers with intrinsic sympathomimetic activity

E. All of the above

10. Drug of choice in hypertrophic obstructive cardiomyopathy:

A. Verapamil

B. Digoxin

C. Nitrates

D. Amlodipine

11. Nitrates & nifedipine share all the following adverse reactions <u>except</u>

A. Headache & flushing

B. Hypotension

C. Reflex tachycardia

D. Ankle edema

6. C	7.D	8. E	9. E	10.A	11.D

12. Hypotension, heart failure, bradycardia & heart block are side effects of

A. Verapamil
C. Amlodipine
B. Nifedipine
D. Nicardipine

13. Beta blockers & calcium channel blockers do <u>NOT</u> share the following indication

A. Angina
B. Hypertension
C. Supra ventricular arrhythmia
D. Peripheral vascular diseases

14. Constipation is an adverse effect of

A. Verapamil
C. Propafenone
E. Quinidine
B. Digoxin
D. A and C

15. The following is <u>WRONG</u> concerning acute heart failure & shock therapy

A. Norepinephrine is preferred agent in septic shock.
B. Morphine is given in all cases of acute heart failure .
C. Corticosteroids are preferred to epinephrine as 1st choice in anaphylactic shock.
D. In patients on beta-blockers, anaphylactic shock may be managed by glucagon.
E. B and C

16. The main mechanism of antihypertensive action of beta blockers is

A. Suppression of renin release
B. Negative inotropic & chronotropic effects
C. Resetting of baroreceptors
D. Central & peripheral sympatholytic effects

17. Used with vasodilators to counteract the reflex tachycardia:

A. Captopril
B. Methyldopa
C. Bisoprolol
D. Pindolol

12. A	13.D	14. D	15.E	16.A	17.C

18. Thiazide diuretics do NOT exhibit the following characteristic

A. Synergize with most antihypertensive drugs

B. High dose induces more hypotensive effect than low dose

C. Long-term hypotensive effects of thiazides is due to vasodilator effect

D. Initial hypotensive effect is 2^{ry} to decrease in cardiac output & extracellular volume

E. They are useful in hypertension associated with osteoporosis

19. In CHF, spironolactone exerts all the following beneficial effects Except

A. Reduces sodium retention and worsening of edema.

B. Minimizes diuretic- induced hypokalemia thus decreasing arrhythmia & sudden death

C. Decreases myocardial hypertrophy & fibrosis induced by local aldosterone

D. Offsets the effect of digoxin & lisinopril on potassium level

20. An asthmatic hypertensive should NOT be given

A. Thiazides C. Candesartan

B. Propranolol D. Amlodipine

21. A hypertensive patient with angina should NOT be given

A. Pindolol C. Amlodipine

B. Bisoprolol D. Metoprolol

22. A hypertensive patient with heart failure should NOT be given

A. Thiazides C. Candesartan

B. Lisinopril D. Verapamil

23. Which of the following statements is incorrect concerning antihypertensives?

A. Hydralazine is used in pre eclampsia as a second choice to labetalol .

B. α-methyl dopa is of choice in pregnancy

C. Thiazides and beta blockers are preferred in uncomplicated hypertension

D. Thiazides & calcium channel blockers are preferred in isolated systolic hypertension

E. Labetalol is used in hypertensive crisis with acute heart failure.

18. B	19.D	20. B	21.A	22.D	23.E

24. A pregnant hypertensive patient should not receive

A. Thiazides
C. Candesartan
B. Captopril
D. All of the above

25. In a diabetic hypertensive patient, the least preferred drug is

A. Low dose thiazides
C. Lisinopril
B. Propranolol
D. Candesartan

26. The least likely antihypertensive mechanism of amlodipine is

A. Peripheral arterial vasodilatation and decreased peripheral resistance.
B. Negative chronotropic effects
C. Diuretic action due to increased renal blood flow
E. Decreased aldosterone secretion preventing fluid retention

27. The following produce/s bradycardia or heart block:

A. Captopril
C. Verapamil
B. Nifedipine
D. Propafenone
E. C and D

28. The following is/are <u>Not True</u> concerning diuretics in CHF

A. Loop diuretics are of choice but thiazides are added in case of refractoriness to loop diuretics
B. Spironolactone reduces mortality by 30%
C. Reduction in afterload is the main beneficial effect of diuretics.
D. Sulfonamide hypersensitivity occurs with thiazides but not with frusemide
E. C & D

29. A drug with additional beta blocking effect used in supra ventricular arrhythmia

A. Amlodipine
C. Verapamil
B. Nifedipine
D. Propafenone
E. Adenosine

30. A drug used to terminate an attack of paroxysmal supraventricular tachycardia but may induce bronchospasm:

A. Lidocaine
C. Verapamil
B. Adenosine
D. Diltiazem

24. D	25.B	26. B	27. E	28.E	29.D	30. B

31. In atrial fibrillation, the following control ventricular rate by blocking AVN <u>EXCEPT</u>:

A. Procainamide

B. β-blockers

C. Digoxin

D. Verapamil

<u>Cross match</u> each hypertensive case to its most suitable drug therapy

32. During laborp

33. Pregnant hypertensive patient

34. First choice in isolated systolic hypertension

35. Hypertensive crisis with acute heart failure

A. Labetalol

B. Nitroprusside

C. Thiazides

D. Alfa methyl dopa

E. Bisoprolol

36. In congestive heart failure, the following drugs act directly on the myocardium increasing the cardiac output <u>Except</u>:

A. Captopril

B. Digoxin

C. Dopamine

D. Dobutamine

37 All the following ACEIs are prodrugs <u>Except:</u>

A. Lisinopril

B. Enalapril

C. Ramipril

D. Perindopril

38. ACEIs have all the following advantages <u>Except:</u>

A. They induce no change in heart rate

B. They preserve renal function

C. They induce no change in potassium level

D. They reduce cardiovascular mortality

31.A	32. A	33. D	34.C
35.B	36.A	37. A	38. C

39. Candesartan has the following advantages over lisinopril Except

A. No bradykinin production thus less risk of cough.

B. Antagonizes AG II formed by ACE & non-ACE pathways.

C. No hormonal "escape" seen with prolonged ACEIs therapy.

D. Less teratogenic.

40. The most solid indication (s) of digoxin is:

A. Combination of CHF with atrial fibrillation

B. CHF with sinus rhythm

C. Chronic atrial fibrillation without CHF

D. All of the above

41. Digitalis is given to patients with atrial fibrillation because:

A. It decreases atrial excitability

B. It depresses the conductivity of AV node

C. Both of the above

D. None of the above

42. Digitalis induced tachyarrhythmia is aggravated by the following Except:

A. Thiazides

B. Intravenous calcium

C. Sympathomimetics

D. Potassium

43. Management of digitalis bradyarrhythmia,includes:

A. KCl

B. Atropine

C. Lidocaine

D. A and B

44. Which is Wrong concerning renin-angiotensin system activation in CHF

A. Digoxin/ inhibits baroreflex stimulation of RAS , 2^{ry} to increased COP.

B. Beta blockers/ block renin release

C. Lisinopril /inhibits formation of angiotensin II

D. Hydralazine/ direct inhibition of renin- angiotensin system

E. Candesartan blocks angiotensin II receptors.

39. D	40.A	41. B	42. D	43.B	44.D

Cross match the following drugs to their anti-anginal mechanisms

45. Reduces preload	A. Nitrates
46. Decrease heart rate; increase coronary filling time, no effect on afterload	B. Trimetazidine
47. Reduces afterload & heart rate	C. Amlodipine
48. Increases myocardial glucose metabolism	D. Ivabradine
	E. Bisoprolol

Cross match each of the following drugs to its contraindication

49. Captopril	A. Hypertrophic obstructive cardiomyopathy
50. Digoxin	B. Bilateral renal artery stenosis
51. Propranolol	C. Avoid with nitrates
52. Sildenafil	D. Heart block/ Peripheral vascular diseases

Cross match the ACEI to its specific use

53. Enalaprilat	A. Hypertension with liver disease
54. Fosinopril	B. Hypertension with renal disease
55. Lisinopril	C. Hypertensive urgency
56. Captopril	D. Hypertensive crisis with heart failure

57. All the following decrease mortality in heart failure Except:

A. Metoprolol C. Carvedilol E. Spironolactone

B. Bisoprolol D. Pindolol

58. Beneficial effects of β blockers in heart failure include:

A. Block renin

B. Block catecholamines & Ag II - induced arrhythmia & myocardial damage

C. Decrease heart rate, increasing coronary flow; decrease afterload & O2 demand.

D. Resensitize the downregulated β1 receptors & improve LV remodeling

E. All of the above

45. A	46. D	47. E	48. B	49. B	50. A
51. D	52. C	53. D	54.B	55. A	56. C
		57. D	58. E		

59. Stop diuretic 24 hours before its use for fear of renal impairment

A. Lisinopril. C. Digoxin

B. Amlodipine. D. Bisoprolol E. Clonidine

60. The following concerning amiodarone &lidocaine is <u>NOT</u> true:

A. Amiodarone but not lidocaine displaces digoxin from plasma proteins

B. Amiodarone but not lidocaine blocks AVN conduction

C Amiodarone is broad-spectrum while lidocaine is used in ventricular arrhythmias

D. Amiodarone has a very short $t_{½}$ while that of lidocaine is long

E. Amiodarone can be given orally while lidocaine undergoes extensive 1st-pass effect

<u>Cross match</u> the following drugs to its most appropriate use :

61. Dopamine A. Acute heart failure with severe rise of BP

62. Dobutamine B. Cardiogenic shock in normotensives; preserved renal function

63. Nitroprusside C. Cardiogenic shock in hypotensives with renal involvement

64. Frusemide D. Acute pulmonary edema

65. Bradycardia may be seen with

A.Amlodipine. C. Trimetazidine.

B. Ivabradine. D. A and B E. B and C

66. Venodilation is <u>NOT</u> seen with

A.Morphine. C. Frusemide.

B. Nitroglycerine. D. Thiazides E. Captopril

67. A pregnant asthmatic hypertensive patient should <u>NOT</u> receive

A. Candesartan C. Labetalol

B. Captopril D. Thiazides E. All of the above

68. Nitroglycerin is administered by all the following routes <u>EXCEPT</u>

A. Sublingual C. Transdermal

B. Intravenous D. Oral E. Intramuscular

59.A	60. D	61. C	62. B	63.A
64. D	65. B	66. D	67. E	68. E

69. Which of the following statements is CORRECT concerning thiazides?

A. Metolazone is ineffective in patients with renal impairment.

B. Chronic therapy may reduce renin level.

C. Long term antihypertensive effect results from reduction of blood volume.

D. Beta blockers are preferred to thiazides in isolated systolic hypertension.

E. Indapamide induces less metabolic side effects.

70. Select the drug that markedly potentiates the vasodilator action of nitrates

A. Propranolol C. Sildenafil

B. Hydrochlorthiazide D. None of the above

71. Vasodilation of renal blood vessels and increase in renal blood flow is seen with

A. Dopamine. C. Dobutamine.

B. Frusemide . D. A and B E. B and C

72. True statement concerning calcium channel blockers

A. Amlodipine is used in supraventricular arrhythmia

B. Verapamil is contraindicated in hypertrophic obstructive cardiomyopathy.

C. Flushing and tachycardia are more common with verapamil.

D. They may be used in migraine.

E. Nicardipine may be used in hypertensive crisis in heart failure.

73. True statement concerning management of angina

A. Ivabradine acts mainly on AV node.

B. Isosorbide dinitrate has high bioavailability.

C. Bisoprolol blunts the increase in heart rate during exercise.

D. Nitrates relieve pain mainly by inducing coronary vasodilation.

E. Isosorbide mononitrate undergoes extensive hepatic first pass metabolism.

69. E	70. C	71. D	72. D	73. C

74. Nitrates tolerance is <u>LEAST</u> likely to occur with

A. Sublingual nitroglycerin
B. SR oral isosorbide mononitrate
C. Transdemal nitroglycerin
D. Oral slow release isosorbide dinitrate

75. In unstable angina nitroglycerin is administered by the following route

A. Sublingual
B. Intravenous infusion
C. Intravenous bolus
D. Intramuscular

<u>Cross match</u> each of the following drugs to its role in management of angina pectoris

76. Of choice in vasospastic angina
77. Preferred agent for maintenance therapy
78. Terminates an acute attack
79. May worsen angina

A. Isosorbide dinitrate
B. Isosorbide mononitrate
C. Diltiazem
D. Bisoprolol
E. Pindolol

80. The following are true concerning sacubitril in CHF <u>Except</u>

A. Activates neprilysin resulting in increase in atrial natriuretic peptide.
B. Results in inhibition of renin angiotensin system.
C. Results in Na excretion, diuresis, vasodilation.
D. Decreases AG II induced remodeling.
E. Combined with valsartan in class 11-IV heart failure

<u>Cross match</u>

81. Aldosterone antagonist
82. Inhibits I_f current in SAN.
83. Vasopressin, V2 antagonist in systolic heart failure
84. Inhibits late I_{Na} improving diastolic function & oxygen balance in angina.

A. Ivabradine
B. Eplerenone
C. Tolvaptam
D. Ranolazine

74. A	75. B	76. C	77. D	78. A	
79. E	80.A	81. B	82. A	83. C	84. D

Problem solving

Problem Solving I.

A patient was diagnosed as angina on effort and drug A was prescribed to be taken sublingually during acute attack. Bisoprolol and a transdermal patch were prescribed as a prophylactic therapy against acute attacks. An antiplatelet drug acting on ADP receptor and HMGCOA reductase inhibitor were added.

1. The following is most probably drug A:

A. Isosorbide mononitrate C. Verapamil

B. Nitroglycerine D. Isosorbide dinitrate E. B or D

2. The primary mechanism by which drug A relieves the attack is:

A. Reduction of afterload

B. Vasodilatation of stenosed coronary artery

C. Reduction of preload

D. Reduction of work done by the heart through myocardial depression

E. Antiplatelet effect

3.The trandermal patch probably contains:

A. Isosorbide mononitrate C.Verapamil

B. Nitroglycerine D.Clonidine E. A or B

4. The appropriate duration for application of transdermal patch is probably:

A. 6-8 hours/day C. 14-16 hours/day

B. 8-12 hours/day D.18-24 hours/day E. 1 hour during acute attack

5. The following is true about bisoprolol in angina:

A. Should be given in a dose to decrease heart rate to 70 beats/minute

B. It can be used also to terminate acute attack

C. Ivabradine can be combined with it cautiously to achieve target heart rate

D. It has a vasodilatory effect.

E. It has a higher risk of induction of bronchospasm compared to propranolol.

1. E	2. C	3.B	4. C	5. C

Problem solving II.

Choose the suitable drug for each condition: (a drug can be chosen only once)

A. Verapamil **B- Adenosine**

C- Digoxin **D- Lidocaine**

1. Used to terminate attack of supraventricular tachycardia in asthmatic patient.

2. Used for long term control of ventricular rate in AF associated with heart failure

3. Used only in ventricular tachycardia

1. A	2. C	3.D

BLOOD PHARMACOLOGY

1. Which one of the following is a direct inhibitor of factor Xa?

   A. Dalteparin C. Rivaroxaban

   B. Heparin D. Fondaparinux E. Bivaluridin

2. As regards anticoagulation in pregnancy all the following are true **EXCEPT**:

   A. Heparin induces osteoporosis on long term use.

   B. LMWH is preferred to heparin as it induces less osteoporosis

   C. Warfarin is preferred to heparin in the first trimester

   D. Rivaroxaban teratogenic effects are still unknown.

3. A direct thrombin inhibitor preferred in patients with renal disease is

   A. Argatroban C. Dabigatran

   B. Fondaparinux D. Dalteparin E. Rivaroxaban

4. All the following increase the action of warfarin **EXCEPT:**

   A. Paraffin oil C. Amiodarone

   B. Sulfonamides D. Rifampicin

5. All the following decrease the action of warfarin **EXCEPT:**

   A. Erythromycin C. Oral contraceptives

   B.Carbamazepine D. Rifampicin

6. The following drug is **WRONGLY** matched to its mechanisms **of action**

   A. Fondaparinux /direct inactivation of factor Xa

   B. Streptokinase/ plasminogen activator

   C. Tirofiban/blocks fibrinogen receptor

   D. Dalteparin/inhibits factor Xa

   E. None of the above

1.C	2.C	3.A	4.D	5.A	6. A

7. Which of the following statement is **WRONG** concerning protamine sulfate

A. It is the proper antidote for heparin

B. Partially antagonizes fondaparinux

C. Has slight anticoagulant effect with large dose

D. Highly basic with electropositive charge

8. In treatment of hyperlipidemia which of the following drugs can be safely combined:

A. Cholestyramine plus statins

B. Fibrates plus statins

C. Nicotinic acid plus statins

D. None of the above

9. All of the following are correctly matched **EXCEPT:**

A. Statins / inhibit HMG-CoA reductase.

B. Nicotinic acid/inhibitor of lipolysis in adipose tissue

C. Ezetimibe/inhibits intestinal cholesterol absorption

D. Fibrates /inhibit plasma lipoprotein lipase

10. Indirect thrombin inhibitors include all of the following **EXCEPT**;

A. Reteplase

B. Heparin

C. Enoxaparin

D. Argatroban

E. A and D

11. Fondaparinux & low molecular weight heparins share all the following **EXCEPT:**

A. Long half life

B. Inhibit factor $\overline{Xa}$

C. Used in heparin induced thrombocytopenia

D. Bind to antithrombin.

12. Which of the following fibrinolytics carries a high risk of antigenicity?

A. Tenecteplase

B. Streptokinase

C. Urokinase

D. Alteplase

7. B	8.A	9. D	10. E	11.C	12.B

13. All of the following antidotes are correctly matched **EXCEPT:**

A. Iron sulphate/ desferroxamine

B. Warfarin/ protamine sulphate

C. Streptokinase/aminocaproic Acid

D. Urokinase/tranexamic acid

14. All the following statements are true about heparin **EXCEPT:**

A. It has vasodilator and plasma clearing effects

B. 80% metabolized in the liver

C. Does not cross placenta or secreted in milk

D. Can be administrated by intravenous, intramuscular & subcutaneous routes

E. Therapy controlled by aPTT

15. All the following statements are true about warfarin **EXCEPT:**

A. It is highly bound to plasma protein

B. It has delayed onset (2-3days)

C. Can cross placenta and is secreted in milk

D. Requires routine monitoring by aPTT

E. Inhibits synthesis of factors II, VII, IX, X

16. Heparin-induced thrombocytopenia can be managed by:

A. Protamine sulfate

C. Argatroban

B. Fondaparinux

D. B and C

17. Adverse effects of warfarin include all the following **EXCEPT:**

A. Bleeding

B. Skin necrosis especially in protein C deficiency

C. Thrombocytopenia

D. Teratogenic effect

18. All the following hypolipidemic agents can induce myopathy **EXCEPT**:

A. Nicotinic acid

C. Ezetimibe

B. Simvastatin

D. Gemfibrozil

13. B	14.D	15. D	16. D	17.C	18.C

19. Regarding statins, which of the following is/are **CORRECT**?

A. Monitoring of serum liver enzymes is required during therapy

B. Have an additive beneficial effect when combined with cholestyramine

C. Exhibit cardioprotective effects

D. All of the above

20. All the following drugs are matched with their adverse effect **EXCEPT:**

A. Statins / Myopathy & Cataract

B. Fibrates / Myopathy & Gall Stones

C. Nicotinic acid / flushing, glucose intolerance & gouty arthritis

D. Colestipol / increases absorption of digoxin & warfarin leading to toxicity

21. The following is **WRONGLY** matched to its respective control of therapy:

A. Warfarin /prothrombin time

B. Heparin/aPTT

C. Dabigatran/INR

D. Rivaroxaban/none

22. Which of the following statement is untrue about fibrinolytics?

A. Should be started soon after the onset of thrombosis or embolism

B. Should be followed by antithrombotic agents

C. Bleeding is more with alteplase

D. They are contraindicated in pregnancy

23. Which of the following is a direct thrombin inhibitor given orally?

A. Enoxaparin C. Dabigatran

B. Fondaparinux D. Argatroban E. Rivaroxaban

24. The following increases iron absorption:

A. Tannic acid C. Tetracycline E. A and B

B. Ascorbic acid D. Antacids

19. D	20.D	21. C	22. C	23.C	24. B

25. Regarding oral iron therapy, which statement is **WRONG**?

A. Given after meals to decrease GIT disturbances

B. Ferric iron is more readily absorbed than ferrous salt

C. Cause black stools and black staining of teeth

D. Continued till Hb is normal & for an extra 2-3 months to replenish stores

26. All of the following are true regarding erythropoietin **EXCEPT**

A. Acts as a regulator of erythropoiesis

B. Used in treatment of anemia of chronic renal failure .

C. It decreases the need for transfusion as it elevates red blood cell level

D. Can be administered orally and parenterally

27. Acute iron toxicity is managed by all the following **EXCEPT:**:

A. Desferrioxamine

B. Gastric lavage with bicarbonate

C. Gastric lavage with ascorbic acid

D. IV infusion of saline

E. IV infusion of dextrose

28. All of the following are true concerning vitamin B_{12} **EXCEPT**:

A. Hydroxycobalamin is preferred over cyanocobalamin since it is more slowly absorbed.

B. In pernicious anemia B_{12} is given for 2 years.

C. Benefits diabetic patients with peripheral neuritis & heavy smokers with retrobulbar neuritis.

D. Essential for activation of folic acid

29. Folic acid is used in all of the following **EXCEPT:**

A. Pregnant women.

B. Patients on anticonvulsant drugs.

C. Patients on anticoagulant drugs.

D Patients with renal failure on dialysis.

E. Nutritional megaloblastic anemia

25. B	26.D	27.C	28. B	29.C

30. Folic acid deficiency is associated with the use of:

A. Methotrexate C. Metronidazole

B. Trimethoprim D. Methoxamine E. A and B

31. The following drugs can induce megaloblastic anemia EXCEPT:

A. Neomycin

B. Chloramphenicol

C. Colchicine

D. Phenytoin

32. Which of the following is **wrongly** matched in treatment of aplastic anemia:

A. Corticosteroids / decreases bleeding due to thrombocytopenia.

B. Broad-spectrum antibiotics / to treat infections.

C. Cyclosporin7 elevates red blood cell level

D. Erythropoietin / increases erythropoiesis

33. Erythropoietin is used in:

A. Anemia of chronic renal failure & severe anemia of cancer & AIDS.

B. Megaloblastic anemia

C. Hemolytic anemia

D. All of the above

Cross MATCH each of the following drugs to its specific blood disorder:

34. Aspirin	A Hemolytic Anemia in G6PD-deficient subjects
35. Methyldopa	B. Thrombocytopenia
36. Heparin	C. Autoimmune hemolytic anemia
37. Chloramphenicol	D. Megaloblastic Anemia
38. Propylthiouracil.	E. Aplastic Anemia.
39. Phenytoin	F. Agranulocytosis and maculopapular rash

30. E	31. B	32.C	33.A	34. A
35.C	36. B	37. E	38. F	39. D

40. Which is **NOT** an advantage of dalteparin over unfractionated heparin?

A. Greater bioavailability

B. Less risk of bleeding

C. Less risk of thrombocytopenia

D. Greater efficacy

E. Long half life

41. Which of the following statements is **CORRECT?**

A. Hydroxocobalamin is preferred to cyanocobalamin as it is more rapidly absorbed.

B. Ferric iron is more readily absorbed than ferrous salt.

C. Ascorbic acid reduces iron absorption.

D. Patients on dialysis should avoid folic acid supplements.

E. Acute iron toxicity is managed by gastric lavage with bicarbonate solution.

42. All the following drugs are oral anticoagulants **EXCEPT**:

A. Dabigatran.

B. Rivaroxaban.

C. Warfarin.

D. Bivalirudin.

43. Which of the following is **not correctly** matched to mechanism of action?

A. Dabigatran/ direct thrombin inhibitor.

B. Rivaroxaban / indirect inhibitor of factor Xa.

C. Fondaparinux / selective indirect inhibitor of factor Xa.

D. Warfarin / inhibits synthesis of factors (II, VII, IX, X).

44. The following is **NOT** a characteristic feature of rivaroxiban compared to warfarin:

A. It has rapid onset (30 min).

B. No monitoring is required by INR.

C. Less drug interactions with CYP450 interacting drugs.

D. It can be safely given in renal impairment.

E. It has short duration of action (24 hours).

40. D	41. E	42. D	43. B	44.D

45. The following is **INCORRECT** about dabigatran:

A. It has rapid onset (30 min) and long duration (up to 6 days).

B. Its absorption is decreased by proton pump inhibitors.

C. It is possibly safe in liver failure.

D. It is dialyzable in toxicity.

E. Antidote idarucizumab is available

46. The following is **NOT** an advantage of rivaroxiban and dabigatran over warfarin

A. More rapid onset and offset.

B. No monitoring by INR is required.

C. No dose adjustment is needed in renal failure

D. Less drug interactions with CYP450 interacting drugs.

47. Which of the following is **INCORRECT** about cilostazol?

A. It is an oral vasodilator and antiplatelet drug.

B. It stimulates phospho-diesterase enzyme →↑ cAMP breakdown.

C It is used in treatment of intermittent claudication.

D. Headache is a common adverse effect.

48. Concerning fondaparinux, choose the **WRONG** answer:

A. Indirectly inhibits factor Xa.

B. Not antagonized by protamine sulfate.

C. Given orally

D. Used in heparin-induced thrombocytopenia.

49. Concerning argatroban (direct thrombin inhibitor), the following is **Wrong**:

A. Given intravenously.

B. Used in heparin-induced thrombocytopenia.

C. Its level can be monitored by INR.

D. Not antagonized by protamine sulfate

45. A	46. C	47. B	48. C	49. C

Cross Match each of the following to the appropriate management of toxicity

50. Warfarin	A. Partially antagonized by protamine sulfate
51. Rivaroxaban	B. Idarucizumab
52. Dabigatran	C. Prothrombin complex concentrates
53. Enoxaprain	D. Vitamin K

Cross Match each of the following drugs to the appropriate statement

54. Abciximab	A. Monoclonal antibody; fibrinogen receptor blocker
55. Cilostazol	B. Phosphodiesterase inhibitor given with warfarin to reduce
56. Dipyridamole	thromboembolism in prosthetic heart valves
	C. Phosphodiesterase inhibitor for intermittent claudication
	D. ADP receptor blocker

Cross Match each of the following drugs to its mechanism of action

57. Fondaparinux	A. Parenteral direct thrombin inhibitor
58. Rivaroxaban	B. Oral direct thrombin inhibitor
59. Dabigatran	C. Indirect selective inhibitor of factor Xa
60. Argatroban	D. Direct inhibitor of factor Xa
61. Enoxaparin	E. Indirect thrombin inhibitor more selective on factor Xa than heparin

50. D	51. C	52. B	53. A	54. A	55. C
56. B	57. C	58. D	59. B	60. A	61. E

Problem solving

A 30 year old woman was admitted to the hospital for femoral vein thrombosis (DVT). She was started immediately on a parenteral anticoagulant (drug A) to be monitored by aPTT. 4 days later, she developed bleeding and the physician ordered for complete blood count, which revealed thrombocytopenia. The physician stopped drug A and replaced it with a rapid onset oral anticoagulant (drug B).

1. Drug A is most probably

   A. Fondaparinux

   B. Heparin

   C. Rivaroxaban

   D. Argatroban

   E. Warfarin

2. Drug B is most probably

   A. Fondaparinux

   B. Heparin

   C. Rivaroxaban

   D. Argatroban

   E. Warfarin

1. B	2. C

ENDOCRINE PHARMACOLOGY

1. Which one of the following is correct regarding thionamides?

A. Thionamides act by inhibiting iodide trapping.

B. Propyl thiouracil is preferred to methimazole as it is given once daily.

C.Propylthiouracil is extensively bound to plasma proteins than methimazole.

D. Methimazole inhibits the peripheral conversion of T4 to T3.

2. All the following interfere with peripheral conversion of T_4 to T_3 except

A. Propyl thiouracil. C. β-Adrenoceptive Blockers.

B. Methimazole. D. Dexamethazone

3. The following inhibit hormone release from thyroid gland:

A. β- Blockers. C . Lithium

B. Lugol's iodine (high dose). D. L.carnitine E. B and C

4. Regarding thyrotoxic crises; Which of the following is incorrect:

A.Drugs are given parentrally or by nasogastric tube.

B. Propranolol is cardioprotective.

C. lithium and L.carnitine are used as first line treatment.

D. Hydrocortisone provides adrenal support & dialysis is needed in resistant cases.

E. Propyl thiouracil decreases hormone synthesis & inhibits conversion of T_4 to T_3

5. The following concerning thionamides is UNTRUE:

A. Agranulocytosis is the most serious adverse effect.

B. Maculopapular rash is the most common adverse effect.

C. Propyl thiouracil is preferred to methimazole in pregnancy.

D. Propyl thiouracil is used in thyroxic crisis to inhibit conversion of T4 to T3.

E. Propyl thiouracil is preferred to methimazole as it is given once daily

6. All the following are true concerning Lugol's iodine in hyperthyroidism except

A. Inhibits organification, hormone release & reduces size & gland vascularity.

B. Onset of therapeutic effect is delayed.

C. Effect is lost after 2 weeks as TSH increases & stimulates T_3 & T_4 release.

D. Used preoperatively & in thyrotoxic crisis but not for long term therapy.

1. C	2. B	3. E	4. C	5. E	6. B

7. Which of the following concerning propyl thiouracil & methimazole is correct?

A. Methimazole is used in thyrotoxic crises.

B. Propyl thiouracil use is safe in patients with hepatic diseases.

C. Propylthiouracil commonly induces fetal goitre.

D. WBC count is useful prior to initiating both.

8. A drug used in haemophilia A & induces minimal vasoconstriction

A. Terlipressin C. Fellypressin.

B. Desmopressin. D. Vasopressin. E. Syntocinon

9. The following is WRONG concerning vasopressin & its analogs

A. Desmopressin is preferred in diabetes insipidus due to its V_1 selectivity.

B. Terlipressin is preferred to vasopressin in bleeding esophageal varices & during surgery in portal hypertension.

C. Felypressin is used to prolong local anesthetics effects in cardiac patients.

D. Water intoxication may occur specially when combined with carbamazepine.

10. Early postprandial hyperglycemia is best avoided with the use of

A. Gliclazide C. Glimepiride

B. Repaglinide D. NPH E. Insulin glargine

11. The following insulin preparation is Correctly matched to its advantages

A. Crystalline zinc: slow onset long acting preparation.

B. NPH: most widely used preparation that can be used in emergencies.

C. Lispro: can be mixed with regular insulin.

D. Glargine: increases compliance

E.Afreeza: sufficient alone to control type one DM.

12. The most serious adverse effect of insulin is:

A. Hypoglycemia B. Insulin resistance

C. Lipohypertrophy. D. Hypokalemia E.weight gain

7. D	8. B	9. A	10. B	11. D	12. A

13. The following is <u>WRONG</u> concerning Exenatide - Liraglutide

A. Synthetic analogues of GLP-1 that are more stable than natural GLP-1.

B. Enhance glucose-dependent insulin secretion.

C. Slow gastric emptying, and reduce food intake.

D. Administered orally.

E.Supress inappropriately elevated postprandial glucagon secretion

14. Which of the following insulin preparations can be injected once per day?

A. Insulin aspart C. Regular insulin

B. Insulin Lispro D. Insulin glargine E. Insulin glulisine

15. Which of the following drugs acts specifically by increasing glucose-mediated insulin secretion?

A. Gliclazide C. Sitagliptin

B. Glibenclamide D. Acarbose E. Metformin

16. An adverse effect of oral contraceptives unrelated to progestins

A. Depression D. Hirsutism.

B. Risk of endometrial & breast cancer E.Decrease HDL

C. Hypertesion.

17. An adverse effects of oral contraceptives unrelated to estrogen

A. Depression C. Hypertension & thromboembolim.

B. Risk of endometrial & breast cancer D. Breast tenderness.

<u>Cross Match</u> the following contraceptive preparations to its most appropriate feature

18. Combined estrogen&progestin A. Most effective preparation

19. Progestin-Only minipills B. No risk of thromboembolism

20. Implants C. Medroxyprogesterone effective for 3 months.

21. Depot injections D. Norgestrel effective for 5 years

22. A Selective estrogen receptor modulator exhibiting agonistic action on bone

A. Repaglinide. C. Raloxifene.

B. Ranitidine. D. Ribaverin

13. D	14. D	15. C	16. B	17. A	18. A
19. B	20. D	21. C	22.C		

23. Estrogen in postmenopausal women increases risk of all the following except:

A. Gall stones. C. Endometrial carcinoma.

B. Osteoporosis. D. Breast cancer. E.Hypertension.

24. Choose the correct statement about anabolic steroids:

A. They promote long stature in children.

B. They are androgens with high anabolic and low andreogenic activity.

C. They are suitable for long-term therapy in children.

D. Their prolonged use is safe on liver.

E. They have no role in treatment of osteoporosis.

25. The following is NOT an effect of stanozolol

A. Increased number of sperms.

B. Short stature in children.

C. Cholestatic jaundice - cancer liver.

D. Virilization & acne in females.

26. The following is not an adverse effect of corticosteroids

A. Osteoporosis. C. Alkalosis.

B. Hyperkalemia. D. Hyperglycemia. E. cataract

27. The following is not an adverse effect of excess mineralocorticoids

A. Na^+ and water retention.

B. Acidosis.

C. Aggravation of CHF associated myocardial fibrosis.

D. Rise in blood pressure.

28. The following concerning corticosteroids is Wrong

A. Antistress effect in shock is due to increased catecholamine vasoconstriction & glucose level.

B. Dexamethazone is long-acting with potent anti-inflammatory effect but devoid of mineralocorticoid activity

C. Fluodrocortisone has prominent mineralocorticoid activity .

D. Antistress effect in bleeding and trauma is due to its anabolic effect.

23. B	24. B	25 A	26. B	27. B	28. D

29. Which of the following statements about metformin is <u>incorrect</u>:

A. Weight gain is a common and unwanted side effect.

B. Risk of lactic acidosis is high in heart failure or renal dysfunction.

C. Euglycemic.

D. Initial therapy of type 2 diabetes.

E. Main effect is reduction of hepatic glucose production

30. Which of the following drugs does not cause weight gain?

A. Glibenclamide C. Metformin E. Acarbose

B. Pioglitazone D. Repaglinide F.Insulin G. C and E

<u>Cross Match</u> the following antidiabetic drugs to their mechanism of action

31. Repaglinide A. inhibits gluconeogenesis; decreasing hepatic glucose output

32. Metformin. B. Agonist for PPAR-γ receptor

33. Acarbose C. Blocks pancreatic- β cell ATP-sensitive K^+ channels.

34. Pioglitazone D. α-glucosidase inhibitor

35. The following is/are correct regarding treatment of diabetic ketoacidosis?

A. KCl & bicarbonate are administed once ketoacidosis is diagnosed.

B. 5% glucose if glucose falls to 250 mg/dl to avoid brain edema & hypoglycemia.

C. NPH insulin is the preferred preparation in this case.

D. Fluid replacement (3-5 L) is the first and most important line of treatment.

E. B and D

36. Antidiabetic agent/s having the advantage of avoiding early post prandial hyperglycemia with reduced risk of delayed hypoglycemia:

A. Glibenclamide C. Regular insulin E. Insulin lispro

B. Repaglinide D. Glimepride F. B and E

<u>Cross Match</u> each adverse effects to the corresponding antidiabetic drug

37. Sulfonamide allergy

38. Edema & heart failure

39. Nasopharyngitis

A. Repaglinide

B. Sitagliptin

C. Pioglitazone

D. Glimepride

29. A	30.G	31.C	32. A	33. D	
34. B	35. E	36. F	37.D	38. C	39. B

40. Late post-prandial hypoglycemia is <u>most likely</u> to be seen with

A. Sitagliptin
C. Regular insulin
B. Insulin Lispro
D. Acarbose
E. Metformin

41. Compliance in diabetics is best seen with which of the following drugs?

A. Repaglinide
C. Acarbose
B. Glimepiride
D. Glipizide
E. Regular insulin

42. Long acting antidiabetic with low risk of hypoglycemia.

A. Repaglinide.
C. Glibenclamide.
B. Glimipride
D. Glipizide .

43. The following is not an indication of vitamin D

A. Prevention and cure of rickets in children & osteomalacia in adults.
B. Osteoporosis.
C. Hypoparathyroidism.
D. Hypercalcemia

44. Vitamin D preparation/s <u>NOT</u> requiring renal activation:

A. Calcitriol.
C. Dihydrotachysterol.
B. Alfacalcidiol.
D. A & B.

45. The following is <u>incorrect</u> concerning oral contraceptives

A. Suppression of ovulation by inhibiting FSH & LH.
B. Inhibition of sperm penetration by rendering cervical mucosa more alkaline.
C. Inhibition of implantation by decreasing endometrial glycogen deposition.
D. The most effective preparation is a combination of esterogen and progesterone.

46. Marked muscle tetany due to hypoparathyroidism can be quickly reversed by

A. Calcitonin.
C. Parathyroid hormone.
B. Calcium gluconate.
D. Vitamin D.

47. A drug that decreases serum calcium level, used in osteoporosis & hypercalcemia

A. Calcitonin.
C. Parathyroid hormone.
B. Estrogen.
D. Prednisone.

40. C	41. B	42. B	43. D
44. D	45. B	46. B	47. A

48. The following is NOT true concerning bisphosphonates

A. Decreases bone turnover in Paget's disease of bone.

B. Alendronate Inhibits an enzyme necessary for osteoclasts survival.

C. Esophagitis is the most serious adverse effect & is reduced if taken with a full glass of water while sitting upright.

D. May be safely given in renal dysfunction.

49. The following concerning drugs used in osteoporosis is wrong

A. Calcitonin, raloxifine and alendronate decrease bone resorption.

B. Fluorides may substitute for calcium supplements.

C. Teriparatide and anabolic steroids increases bone formation.

D. Strontium is reserved for severe osteoporosis.

E. Denosumab decreases bone resorption in postmenopausal females.

50. Reduction in calcium absorption from GIT is associated with the use of

A. Raloxifene. C. Alfacalcidiol

B. Alendronate. D. Prednisone E. B and D

51. The following is NOT used in hypercalcemia

A. Calcitonin. C. Teriparatide.

B. Glucocorticoids. D. Alendronate. E. Frusemide

52. The following is/are used in acromegaly & bleeding esophageal varices

A. Octreotide. C. L-dopa.

B. Bromocriptine. D. Terlipressin. E. A and D

53. The following is (are) used in acromegaly and in Parkinsonism

A. Octreotide. C. L-dopa.

B. Bromocriptine. D. B and C.

54. True statement (s) concerning bromocriptine

A. Orally active DA agonist.

B. Increases prolactin level thus it is contraindicated in hyperprolactinemia.

C. Breast engorgement is a major side effect.

D. Suppress growth hormone secretion in normal persons

E. Hypertension is a common adverse effect

48. D	49. B	50. E	
51. C	**52. A**	**53. D**	**54. A**

55. True statement (s) concerning octreotide

A. long-acting somatostatin analog.

B. Stimulates release of GH, GIT hormones & Glucagon.

C. Effective against GIT tumors secreting VIP – gastrinomas –glucagonomas.

D. A and C.

56. The following is <u>WRONG</u> concerning leuprolide & nafarelin

A. Gonadotropin-Releasing Hormone analogs.

B. Given in SC pulses to increase gonadotropins to stimulate ovulation in infertility.

C. Given continuously to inhibit gonadotropin release in cancer prostate.

D. Used in SC pulses in endometriosis.

57. The following is (are) true concerning In-vitro fertilization

A. Gonadorelin is a synthetic Gonadotropin-Releasing Hormone given continuously to inhibit FSH release.

B. Exogenous FSH is given to induce follicular maturation at a selected time.

C. Nafarelin is an FSH analog administered exogenously.

D. A and B.

58. An agent used in treatment of infertility that blocks hypothalamic estrogen receptors preventing normal feedback inhibition of FSHRH & LHRH.

A. Clomiphene.

B. Human menopausal or chorionic gonadotropins

C. Bromocriptine.

D. Gonadorelin.

59. The following is <u>Wrong</u> concerning selective estrogen receptor modulators

A. Clomiphene is used as ovulation-inducing agent.

B. Tamoxifen is used in uterine cancer.

C. Raloxifene is used in osteoporosis.

D. Raloxifene is associated with high risk of venous thromboembolism.

E. Clomiphene is associated with high risk of multiple pregnancies.

55. D	56. D	57. D	58. A	59. B

60. Prophylactic tamoxifen in woman at high risk of breast cancer results in

A. Blockade of estrogen receptors in breast tissue.

B. Blockade of estrogen receptors in the hypothalamus.

C. Increased risk of osteoporosis.

D. Decreased incidence of endometrial carcinoma.

61. Which of the following statements is <u>CORRECT</u>

A. Tamoxifen blocks hypothalamic estrogen receptors.

B. Finasteride is used in prostatic hyperplasia as it relaxes bladder sphincter.

C. Raloxifene may increase risk of breast cancer.

D. Urofollitropin & minotropins stimulate ovulation in infertility

E. None of the above

62. The following is true concerning oral contraceptives

A. Depression is an adverse effect due to estrogen.

B. May be safely given in liver disease.

C. Progestin-only minipills carry no risk of thromboembolism.

D. Inhibit sperm penetration by rendering cervical mucosa more alkaline.

E. Effects of depot injections of medroxyprogesterone acetate last for 5 years.

<u>Cross Match</u> each of the following drugs to its side effect

63. Terlipressin	A. Esophagitis and renal impairment
64. Alendronate.	B. Hyperglycemia, hypokalemia
65. Prednisolone	C. Facial pallor.
	D. Hyperglycemia, hyperkalemia.
	E. Flushing.

66. Ovulation inducing agents do **<u>NOT</u>** include

A. Octreotide.	C. Gonadorelin.	E. Nafaralin
B. Bromocriptine.	D. Menotropins.	F. Clomiphene

	60. A	61.D	62. C
63. C	64. A	65.B	66. A

67. Which of the following drugs <u>is not used</u> in treatment of prostatic cancer?

A. Ganirelix B. Flutamide.

C. Degarelix. D. Leuoprolide given in a pulsatile form

68. The following is used in acromegaly & in hyperprolactinemia

A. Octreotide C. Nafarelin.

B. Bromocriptine. D. Terlipressin. E. Gonadorelin

69. Which of the the following is used in acromegaly & in carcinoid syndrome:

A. Octreotide B. Degarelix.

C. Nafarelin. D. Terlipressin. E. Gonadorelin

70. The following statement is <u>correct</u> regarding ADH antagonists:

A. Tolvaptan is non selective V1, V2 antagonist.

B. Conivaptan is selective V2 antagonist.

C. Demeclocyclin is largely replaced lithium in treatment of SIADH.

D. Hyponatremia is a common adverse effect.

E. Tolvaptan is given by IV injection.

67. D	68.B	69. A	70. C

GENERAL CHEMOTHERAPY

1. The penicillin G preparation with the longest duration of action is:
   A. Benzathine penicillin.
   B. Sodium penicillin.
   C. Potassium penicillin.
   D. Procaine penicillin.
2. Which of the following drugs is penicillinase-resistant and given orally?
   A. Ampicillin.
   B. Amoxicillin.
   C. Penicillin V.
   D. Augmentin.
3. All the following are true about penicillins **EXCEPT:**
   A. Safe in pregnancy despite crossing placenta
   B. Can cross BBB in meningitis
   C. Concomitant administration of probenecid can prolong their action
   D. Injected with aminoglycoside as one single IV bolus in bacterial endocarditis
4. The drug of choice in patients allergic to penicillin is
   A. Imipenem.
   B. Cefazolin.
   C. Meropinem.
   D. Erythromycin.
5. Which of the following is the best drug for biliary infection?
   A. Cefazolin.
   B. Ampicillin.
   C. Cefoperazone.
   D. Gentamycin.

1. A	2. D	3. D	4. D	5. C

6. An antimicrobial that is better to be avoided in patients with myasthenia gravis?

A. Gentamycin.

B. Rifampicin.

C. Ampicillin.

D. Tetracycline.

7. A patient on antibacterial therapy has to do an operation in which a skeletal muscle relaxant may be used. He will be at risk if this antimicrobial is:

A. Rifampicin.

B. Aminoglycoside.

C. Ciprofloxacin

D.Penicillin.

8. The main reason for the limited use of chloramphenicol is high incidence of:

A. Aplastic anemia.

B. Hepatotoxicity.

C. Interstitial nephritis.

D. Pulmonary fibrosis

9. The following statements about rifampicin are true **Except:**

A. It inhibits DNA-dependent RNA polymerase.

B. It is used in treatment of meningitis.

C. It gives red discoloration of urine.

D. It may lead to reduction in plasma level of some drugs.

10. A 10 year old boy with glucose-6-phosphate dehydrogenase deficiency has typhoid fever, the best drug for treatment is:

A. Co-trimoxazole.

B. Ciprofloxacin.

C. Amoxicillin.

D. Chloramphenicol.

6. A	7. B	8. A	9. B	10. C

11. A patient on warfarin therapy developed a chest infection for which he took antibacterial therapy. He suffered from bleeding. The antimicrobial taken most probably was:

A. Co-trimoxazole.

B. Aztreonam.

C. Rifampicin.

D. Gentamycin.

12. The following combination is of first choice in treatment of Brucellosis:

A. Penicillin plus aminoglycoside.

B.Trimethoprim plus sulfamethoxazole.

C. Doxycycline plus rifampicin.

D. Ciprofloxacin plus vancomycin.

13. A man with a history of multiple antibiotic resistance is given a prophylactic IV dose of antibiotic before surgery. As the antibiotic is being infused, the patient becomes flushed over most of his body. Which of the following antibiotics is most likely responsible?

A. Erythromycin.

B. Gentamycin.

C. Vancomycin.

D. Tetracycline.

14. In the previous case, this adverse effect can be avoided by:

A. Giving the drug orally.

B. Pretreating the patient with antihistamine.

C. Giving the drug combined with aminoglycosides.

D. Giving the drug with clindamycin.

15. Antibiotic associated-pseudomembranous colitis is most likely to be due to

A. Vancomycin.

B. Azithromycin.

C. Clindamycin.

D. Metronidazole.

11. A	12. C	13. C	14. B	15. C

16. A patient develops severe, watery diarrhea, fever & abdominal pain. *Clostridium difficile* infection in the gut is confirmed. The antimicrobial therapy for this antibiotic-associated pseudomembranous colitis is:

A. Amoxicillin.

B. Metronidazole.

C. Vancomycin

D.. B or C

17. A patient with a *Pseudomonas aeruginosa* infection is receiving IV gentamycin, but the clinical response is not satisfactory. If penicillin is administered in a separate IV line to avoid physical interaction, which of the following will occur?

A. chemical neutralization & abolishment of effects of penicillin.

B. Colitis due to superinfection with *Clostridium difficile* may develop.

C. The penicillin will enhance the bacterial response to the aminoglycoside.

D. The penicillin will increase the risk of aminoglycoside nephrotoxicity.

18. Concerning antibiotics contraindicated in infants & children, the following are correctly matched **except**:

A. Tetracyclines / Teeth & Bone deformities

B. Chloramphenicol/ Grey baby Syndrome

C. Sulfonamides/ Kernicterus

D. Levofloxacin/ Ototoxicity

19. Which of the following is the most effective agent in the treatment of *Rickettsia, Mycoplasma,* and *Chlamydia* infections?

A. Vancomycin. C. Penicillin G.

B. Gentamycin. D. Tetracycline

20. A female patient is diagnosed with TB. A careful medical history should be taken because one of the drugs commonly used in TB therapy may lead to serious decrease in plasma level of concomitantly used drugs. Which drug is it?

A. Ethambutol. C. Isoniazide.

B.Pyrazinamide. D. Rifampicin.

16. D	17. C	18. D	19. D	20. D

21. In the previous question, one of the adverse effects of this drug is:

A. Gouty arthritis.

B.Urine discoloration.

C. Neuropathy.

D.Visual disturbance.

22. Hypersensitivity reaction is a common and serious complication to:

A. Erythromycin

B. Penicillins

C. Sulfonamides

D. B &C

23. The antibiotic of choice in hepatic coma, or portal-systemic encephalopathy is

A. Cephalexin.

B.Chloramphenicol.

C. Neomycin.

D. Penicillin G.

24. A primarily bacteriostatic antibiotic that is bactericidal at high concentrations is

A. Erythromycin.

B. Tetracycline.

C. Ethambutol.

D. Ampicillin.

25. Cefoperazone is associated with a high risk of:

A. Hypertension.

B. Bleeding tendencies in patients taking warfarin.

C. Ototoxicity.

D. Severe allergic reactions in patients with mild penicillin allergies.

26. Nephrotoxic antibiotics include:

A. Gentamycin C. Vancomycin

B. Amphotericin D. Imipinem E. All of the above

21. B	22. D	23. C	24. A	25. B	26. E

27. All the following antibiotics are ototoxic **EXCEPT**:

A. Gentamycin
C. Vancomycin
B. Erythromycin
D. Clindamycin

28. An inhibitor of nucleic acid synthesis useful against anerobes:

A. Ciprofloxacin
B. Metronidazole
C. Rifampicin
D. Clinafloxacin
E. B or D

29. Which of the following is a cell wall inhibitor useful against anerobes:

A. Ampicillin
C. Clindamycin
E. B or D
B. Cefoxitin
D. Imipenem

30. Regarding Aztreonam , which of the following is **INCORRECT**?

A. Broadest spectrum B-lactam antibiotic
B. Effective mainly against aerobic gram –ve organisms
C. Can be used in patient allergic to penicillins
D. Resistant to B-lactamase enzyme

31. Regarding imipenem, which of the following is **INCORRECT**?

A. Broadest spectrum B-lactam antibiotic
B. Preferred to meropenem in patients with meningitis and allergic to penicillin
C. Cilastatin can guard against its renal toxic metabolites
D. Resistant to B-lactamase enzyme

32. The following are used in treatment of pseudomemberaneous Colitis **EXCEPT**:

A. Clindamycin
B. Metronidazole
C. Vancomycin
D. Cholestyramine

27. D	28. E	29. E	30. A	31. B	32. A

33. Concerning clindamycin, the following are true **EXCEPT**:

A. Binds to 50 S- subunit and inhibits translocation reaction

B. Effective in bone infection

C. Effective against staph & anaerobic bacteria

D. Effective mainly against gram -ve bacteria

34. The following statements are true about tetracycline **EXCEPT:**

A. Broad spectrum, bacteriostatic & short acting

B. Should be taken with milk or antacids to relieve gastric irritation

C. Concentrated in bone & teeth leading to deformities

D. If outdated may lead to renal tubular dysfunction

35. Which of the following is **untrue** about aminoglycosides?

A. Bactericidal antibiotics used against gram –ve aerobic bacteria

B. Neomycin is taken parentally in hepatic coma

C. Muscle paralysis may occur if taken peri-operative

D. Ototoxic & nephrotoxic

36. 36 year old female with leukemia has fever. Her blood smear revealed Gram -ve bacilli. She has history of penicillin allergy. Which of the following is best for her?

A. Erythromycin. C. Imipenem.

B. Aztreonam. D. Cefazolin.

37. Which of the following sulfonamide preparation is **not** matched to its use:

A. Co-trimoxazole / Respiratory and urinary tract infection

B. Sulfasalazine /Ulcerative colitis

C. Fansidar / Malaria –

D. Sulfacetamide / Burns

Cross match each tetracycline antibiotic with its most appropriate character:

38. Tetracycline A. Used in Syndrome of inappropriate secretion of ADH

39. Doxycycline B. Short acting

40 Minocycline C. Long-acting used in biliary infection

41. Demeclocycline D. Long-acting; used in meningococcal carriers

33.D	34. B	35.B	36. B	37. D
38. B	39. C	40. D	41. A	

42. All the following are adverse effects to sulfonamides **EXCEPT:**

A. Crystalluria & nephrotoxicity

B. Thrombocytopenia

C. Decrease level of warfarin

D. Kernicterus

E. Haemolytic anemia in glucose - 6- phosphate dehydrogenase deficiency.

43. Currently the drug of choice for empiric treatment of typhoid fever is:

A. Chlorammhenicol.

B. Ciprofloxacin.

C. Ampicillin.

D. Co-trimoxazole.

Cross match each cephalosporin antibiotic with its most appropriate use:

44. Cefazolin A. Meningitis & biliary infection

45. Cefoxitin B. Surgical prophylaxis, orthopedic surgery

46. Ceftriaxone C. Anaerobes

47. Antibiotic/s effective against MRSA and VRSA

A. Telavancin

B. Tigecycline

C. Ceftarolene fosamil

D. A and C

Cross match each quinolone antibiotic with its most appropriate use:

48. Clinafloxacin A. Typhoid fever

49. Levofloxacin B. Used only in urinary tract infection

50. Ciprofloxacin C. Gonorrhea

51. Norfloxacin D. Anaerobes

52. Oral antibiotic effective against MRSA resistant to vancomycin is:

A. Streptogramins

B. Linezolid

C. Streptomycin

D. Daptomycin

53. Antibiotic against MRSA resistant to vancomycin acting on cell membrane is:

A. Streptogramins

B. Daptomycin

C. Streptomycin

D. Linezolid

42. C	43. B	44. B	45. C	46. A	47. D
48. D	49. C	50. A	51. B	52. B	53. B

54. The following drug is **INCORRECTLY** matched to its mechanism of action:

A. Linezolid / Binds to a unique site on 30S subunit inhibiting protein synthesis

B. Streptogramins / bind 50S subunits inhibiting protein synthesis

C. Daptomycin / depolarizes cell membrane resulting in rapid cell death

D. None of the above

55. The following drug is **INCORRECTLY** matched to its adverse effect:

A. Linezolid / Thrombocytopenia

B. Vancomycin / Pseudomembraneous colitis

C. Streptogramins / Enzyme inhibitor resulting in drug interactions

D. Daptomycin / Myopathy thus should be avoided with statins

56. Regarding concentration –Dependent Antibiotics, which is **WRONG?**

A. Large infrequent doses are superior to small frequent doses

B. Bactericidal effect is increased in higher drug concentration

C. Optimum effect is achieved with concentrations 10 times the MIC

D. Small frequent doses are superior to large infrequent doses

57. Regarding Time –Dependent Antibiotics, which is **WRONG?**

A. Large infrequent doses are superior to small frequent doses

B. Bactericidal effect is not increased in higher drug concentration

C. Optimum effect is achieved with conc. above 2 - 4 times the MIC

D. Small frequent doses are superior to large infrequent doses

58. The following is **not** a concentration –dependent antibiotic:

A. Gentamycin

B. Erythromycin

C. Ciprofloxacin

D. Azithromycin

59. The following is **not** a time –dependent antibiotic:

A. Vancomycin

B. Penicillins

C. Cephalosporins

D. Quinolones

54. A	55. B	56. D	57. A	58. B	59. D

Cross Match each drug with its specific feature:

60. Deposits in bones and teeth	A. Gentamycin
61. Deposits in renal cortex and inner ear	B. Tetracycline
62. Induces red colouration of urine	C. Cefoperazone
63. Induces dark urine	D. Rifampicin
	E. Metronidazole

64. Which of the following statements concerning quinolones is WRONG ?

A. They may increase QT interval .

B. Clinafloxacin is effective against anerobes.

C. They are time depenendent antibiotics.

D. Ciprofloxacin is of choice in typhoid fever.

E. Levofloxacin is effective in gonorrhea.

65. The following is/are excreted renally

A.Penicillin. C. Vancomycin

B. Cefazolin D. A and B E. All of the above

66. A drug used in resistant staph and of choice in brucellosis

A. Gentamycin. C. Rifampicin E. None of the above

B. Daptomycin D. Vancomycin

67. Avoid with dairy products or antacids

A. Tetracycline. C. Ciprofloxacin

B. Erythromycin. D. A and C E. All of the above

68. The following is not excreted through bile

A. Amikacin. C. Doxycycline

B. Azithromycin. D. Cefoperazone E. Rifampicin

69. Aplastic anemia and optic neuritis are adverse effects of

A. Linezolid. C. Chloramphenicol E. Gentamycin

B. Daptomycin D. Ciprofloxacin

60. B	61. A	62. D	63. E	64. C	65. E
	66.C	67. D	68. A	69. C	

Cross Match each of the following combinations

70. Amoxicillin in augmentin
71. Doxycycline in brucellosis
72. Quinupristin in resistant staph infections

A. Combined with dalfopristin
B. Combined with clavulanic acid
C. Combined with clarithromycin
D. Combined with sulbactam.
E. Combined with gentamycin

Cross Match each of the following to the possible drug interaction

73. Reduces nephrotoxicity of imipinem
74. Increases level of penicillin
75. Increases risk of myopathy with statins.

A. Vancomycin
B. Probencid
C. Cilastatin
D. Daptomycin
E. Cotrimoxazole

Cross Match each of the following to its side effect

76. Metronidazole
77. Chloramphenicol
78. Outdated tetracycline
79. Vancomycin.

A. Dark urine.
B. Red urine.
C. Red man syndrome
D. Grey baby syndrome
E. Fanconi-like syndrome

Cross match each of the following to the most appropriate antibiotic

80. Broadest spectrum B-lactam
81. Effective for methicillin resistant staph
82. Emperic treatment for typhoid fever
83. B-lactam mainly for gram negative infection

A. Imipinem
B. Ciprofloxacin
C. Vancomycin
D. Oxacillin
E. Aztreonam

70. B	71. E	72. A	73. C	74. B	75. D
76. A	77. D	78. E	79. C	80. A	81. C
		82.B	83. E		

SPECIAL CHEMOTHERAPY

1. All the following antifungals are correctly matched to their mechanisms **EXCEPT**:
   A. Griseofulvin / inhibits mitosis.
   B. Ketoconazole /inhibits cytochrome P450 dependent α demethylase.
   C. Terbinafine / induces pore formation disrupting cell membrane permeability.
   D. Flucytosine / interferes with nucleic acid synthesis.

2. Amphotericin- B is characterised by all the following **EXCEPT:**
   A. Used for systemic fungal infections
   B. Poor GIT absorption
   C. Nephrotoxic
   D. Forms pores in cell membrane disrupting fungal cell membrane permeability
   E. Induces hyperkalemia

3. Oral flucytosine is given with amphotericin-B in Cryptococcal meningitis to:
   A. Decrease resistance to flucytosine
   B. Decrease CYP450 enzyme inhibition by Amphotericin-B
   C. Decrease amphotericin dose & hence its nephrotoxicity
   D. A & C

4. During administration of ketoconazole we should avoid
   A. Ranitidine
   B. Amphotericin –B
   C. Antacids
   D. All of the above

5. All the following are true concerning fluconazole **EXCEPT**
   A. Antacids or H_2 blockers could be taken safely with fluconazole.
   B. Reaches CSF thus could be given in fungal meningitis.
   C. Given as single dose increasing patient compliance.
   D. Less specific to fungal cytochrome P450 compared to ketoconazole

1. C	2. E	3. D	4. D	5. D

6. Ketoconazole is used in:

A. Deep fungal infection 2nd line to Amphotericin-B
C. Cancer prostate
B. Cushing disease
D .All of the above

7. Which of the following statement is **TRUE** concerning caspofungin:

A. Inhibits synthesis of glucose polymer of fungal cell membrane
B. Used in candidiasis & aspergillosis refractory to amphotericin-B
C.It is a highly toxic antifungal drug
D. Orally administered

8. Which of the following statement is unmatched?

A. Griseofulvin / fungistatic & enzyme inducer/ decreases warfarin level
B. Ketoconazole / fungistatic & enzyme inhibitor/ increases pheytoin level
C. Metronidazole / amebicidal & enzyme inhibitor/ increases warfarin level
D. Amphotericin-B / fungicidal & enzyme inducer/ decreases warfarin level

9. All the following are true about terbinafine **EXCEPT:**

A. Inhibits squalene epoxidase enzyme
B. More effective than griseofulvin
C. No inhibition of hepatic CYP450 enzyme
D. Used only topically in dermatophyte infections

10. Which of the following is **NOT TRUE** about nystatin?

A. Too toxic for systemic use
B. Given both oral and topical in vaginal candidiasis
C. Very irritant if applied topically in cutaneous candidiasis
D. A polyene that forms pores in fungal cell membrane

11. Metronidazole is selectively active against anaerobes because:

A. Aerobes have an active transport system to pump it out of their cell.
B. Anaerobes reduce its nitro group to generate the reactive radical.
C. It is rapidly inactivated in the presence of oxygen.
D. It binds to DNA of anaerobes with high affinity.

6. D	7. B	8. D	9. D	10. C	11. B.

12. The following is **Incorrect** about metronidazole

A. Highly effective against amebic cysts & trophozoites

B. Effective against clostridium difficile

C. It is a prodrug

D. Used in anaerobic brain abscess

13. Adverse effects of metronidazole include the following **EXCEPT**

A. Metallic taste

B. Reduces warfarin level

C. Teratogenicity

D. Dark urine

E. Disulfiram-like reaction with alcohol

14. A tissue amebicide used mainly in amebic liver abscess is

A. Diloxanide.

B. Iodoqinol.

C. Paromomycin.

D. Chloroquine.

15. Which one of the following statements about diloxanide is **NOT TRUE** :

A. First choice luminal amebicide

B. 90% unabsorbed orally

C. Contraindicated in pregnancy& children

D. Eradicates the amebic cysts

16. Which one of the following statements about amebiasis is/are **TRUE** :

A. Tinidazole: more effective, longer t ½ & less teratogenic than metronidazole

B. Diloxanide: may induce subacute myelo-optic neuropathy.

C. Chloroquine: tissue amoebicide used mainly in hepatic amoebiasis.

D. Iodoqinol: luminal amebicide preferred to diloxanide

E. A and C

Cross Match each antiviral drug with its main mechanism:

17. Amantadine

18. Acyclovir

19. Ribavirin

20. Zanamivir

A. Inhibits neuroaminidase & viral release

B. Inhibits Reverse Transcriptase enzyme

C. Inhibits penetration & uncoating

D. Inhibits RNA polymerase

E. Inhibits DNA polymerase

12. A	13. B	14. D	15. B	16. E
17. C	18.E	19. D	20. A	

Cross Match each antiviral drug with its main use:

21. Acyclovir	A. AIDS disease treatment
22. Ribavirin	B. Hepatitis C treatment
23. Ritonavir	C. Prophylaxis & treatment of influenza A&B
24. Zanamivir	D. Cytomegalo viral (CMV) pneumonia
	E. Herpes simplex & zoster

25. Ganciclovir is preferred over acyclovir in the following condition:

A. Herpes simplex.
B. Herpes zoster.
C. Chickenpox.
D. Cytomegalovirus retinitis in AIDS patients

26. The main therapeutic use of acyclovir is:

A. Herpes virus infections.
B. Human immune deficiency viral infection (HIV).
C. Viral hepatitis.
D. Respiratory syncytial viral infection.

27. Interferon-alpha (INF-α) is used in:

A. Antiviral treatment in hepatitis B & C.
B. Human immune deficiency viral infection (HIV).
C. Cytotoxic drug in hairy cell leukemia
D. All of the above

28. Regarding Interferon-alpha (INF-α), which is **INCORRECT:**

A. Pegylated form has a short duration of action thus given daily
B. It may induce bone marrow depression & alopecia
C. Flu-like syndrome may occur with its therapy
D. May induce arrhythmia

Cross Match each drug with its specific adverse effect:

29. Cyclophosphamide	A. Gynecomastia, impotence
30. Metronidazole	B. Hepatotoxic, folate deficiency & mouth ulcers
31. Ketoconazole	C. Dark urine, metalic taste, disulfiram reaction
32. Methotrexate	D. Hemorrhagic cystitis

21. E	22. B	23. A	24. C	25. D	26. A
27. D	28.A	29. D	30. C	31. A	32.B

33. Risk of teratogenecity is least with

A.Bleomycin C. Flubendazole

B. Mebendazole D. Thiabendazole E. Busulphan

34. An agent for cystodes that may induce hepatotoxicity - pancytopenia

A. Praziquantel. C. Niclosamide.

B. Albendazole D. Thiabendazole E. Mebendazole

35. The following is <u>Wrong</u> concerning chloroquine

A. May induce retinal degeneration & corneal opacities.

B. Hemolytic anemia may occur in G6PD-deficient subjects

C. It is a tissue amoebicide used mainly in hepatic amoebiasis

D. It induces radical cure in falciparum & clinical cure in ovale & vivax

E. It has no role in rheumatoid arthritis.

36. The following is <u>Wrong</u> concerning anti-folates

A. Blood schizonticides (mainly).

B. Fansidar is a combination of pyrimethamine + sulfadoxine

C. Pyrimethamine & proguanil inhibit dihydrofolate reductase

D. Used in treatment of chloroquine resistant falciparum & Toxoplasmosis

E. They are safe in G6PD-deficient patients.

37. The following is <u>Wrong</u> concerning praziquantel

A. broad-spectrum for trematodes & cestodes.

B. Given orally for 2 weeks.

C. May induce pruritus, malaise, low-grade fever & eosinophilia.

D. Increases permeability of worm membrane to Ca^{2+} resulting in spastic paralysis.

E. 2nd choice to albendazole in neurocysticercosis.

<u>Cross Match</u> each of the following drugs to its indication

38. Nystatin A. Fungal meningitis

39. Terbinafine B. Cancer prostate

40. Fluconazole C. Local candidal infection only.

41. Ketoconazole D. Mainly for infection with dermatophytes

33. C	34. B	35. E	36. E	37.B
38. C	39. D	40. A	41. B	

GASTROINTESTINAL PHARMACOLOGY

1. The following is **NOT** an advantage of proton pump inhibitors over H_2-receptor antagonists
   A. Higher efficacy with better symptomatic relief & higher response rates.
   B. More prolonged effect; given in single daily dose.
   C. More effective in anti H. pylori regimen.
   D. Less risk of gastric carcinoma.

2. Lanzoprazole is enterically coated because
   A. It is a weak base destroyed by gastric acidity.
   B. It is ionized in acid medium of stomach thus not readily absorbed.
   C. To slow its absorption.
   D. A and B.

3. **Wrong** statement concerning pharmacokinetics of proton pump inhibitors
   A. Acid production in parietal cell canaliculi is required for their activation.
   B. Taken 30 min before meal, i.e the time required for drug to be absored & reach parietal cell canaliculi , by the time, food - stimulated acid production occurs.
   B. Food decreases their bioavailability, thus taken on an empty stomach.
   C. Repeated administration decreases their bioavailability.
   D. None of the above.

4. Wrong statement concerning pharmacokinetics of H2-receptor antagonists is
   A. High bioavailability.
   B. 50% of the dose of famotidine is decomposed by gastric acidity.
   C. 50% of the dose of ranitidine is destroyed by hepatic first pass effect .
   D. Famotidine is excreted renally thus preferred in liver dysfunction.
   E. Ranitidine is preferred in renal dysfunction

5. Compared to famotidine, ranitidine has the following characteristic
   A. Preferred in liver dysfunction
   B. More potent antisecretory
   C. Exhibits anti-H. pylori activity
   D. Exhibits less inhibitory effects on hepatic microsomal enzyme system

1. D	2. D	3. C	4. A	5. C

6. **True** statement concerning sucralfate

A. Effectively suppresses HCl secretion in stress ulcers.

B. Diarrhea is a common side effect.

C. It should be given away from meals

D. Coadministration with proton pump inhibitors potentiates its effects

E. May be safely given in renal impairment

7. **True** statement (s) concerning misoprostol include all the following **except**:

A. PGF2 alpha analog that decreases HCl & increases mucosal blood flow, mucus & bicarbonate.

B. Cytoprotective selective for NSAID-induced gastric ulcer if PPIs fail.

C. CI in pregnancy as it may induce abortion.

D. Diarrhea is its most common adverse effects

8. **True** statement (s) concerning colloidal bismuth

A. Acts both as mucosal protective & anti H. pylori

B. Used in anti- H. pylori therapy: as ranitidine bismuth citrate

C. Not given for more than 2 months because of its neurotoxicty & encephalopathy

D. All of the above.

9. A Cytoprotective agent given with antisecretory agents to chelate proteins in ulcer base

A. Sucralfate C. Misoprostol

B. Colloidal bismuth D. A and B

10. Triple anti- H-pylori therapy may include all the following drugs **except**:

A. Ranitidine C. Famotidine E. Amoxicillin

B. Lansoprazole D. Clarithromycin

11. All the following are adverse effects of metoclopramide **except**

A. Drowsiness & nervousness.

B. Extrapyramidal adverse reactions.

C. Increases prolactin, galactorrhea, gynecomastia, impotence.

D. Constipation

6. C	7. A	8. D	9. B	10. C	11. D

12. Domperidone differs from metoclopramide in

A. Does not block D_2 receptors.

B. Less extrapyramidal adverse reactions.

C. Crosses BBB more readily.

D. Induces constipation rather than diarrhea.

13. The following antiemetic is **incorrectly** matched to its mechanism of action?

A. Metoclopramide: Dopamine antagonist

B. Ondansetron: Serotonin agonist

C. Diphenhydramine: Antihistamine

D. Scopolamine: Muscarinic antagonist

14. In vomiting induced by cancer chemotherapy, the following is least likely used

A. Metoclopramide

B. Ondansetron + Diazepam

C. Loratadine

D. Ondansetron + Corticosteroids

15. In vomiting with pregnancy, it is safe to use:

A. Hyoscine

B. Meclezine + Pyridoxine.

C. Ondansetron

D. Diazepam

16. Ondansetron is effective in the following types of vomiting **except:**

A. Radiation-induced vomiting

B. Post- operative vomiting

C. Motion sickness

D. Vomiting caused by cytotoxic drugs

17. Metoclopramide is effective in the following types of vomiting **except:**

A. Cytotoxic & radiation-induced vomiting

B. Post-operative vomiting

C. Uremia

D. Motion sickness

12. B	13. B	14. C	15. B	16. C	17. D

18. In vomiting due to motion sickness, the following is (are) used

A. Hyoscine

B. Metoclopramide

C. Ondansetron

D. Diphenhydramine

E. A and D

19. GERD may benefit from the following **except:**

A. Omeprazole

B. Ranitidine

C. Hyoscine butylbromide

D. Domperidone

20. Sodium bicarbonate has the following disadvantages **except:**

A. It causes rebound hyperacidity

B. It causes gastric distension

C. It has delayed onset of action

D. It may be dangerous in patients with heart failure

21. All the following result in constipation **except:**

A. Misoprostol

B. Aluminum containing antacids.

C. Ondansetron.

D. Sucralfate

22. All the following result in diarrhea **except:**

A. Misoprostol

B. Metoclopramide.

C. Magnesium containing antacids.

D. Sucralfate

23. Atropine is combined with diphenoxylate in treatment of diarrhea to:

A. Relieve its spasmogenic effect.

B. Discourage abuse with prolonged use.

C. Antagonize its liability to induce urine retention.

D. A and B

E. A and C

18. E	19. C	20. C	21. A	22. D	23. D

24. The following is **not true** concerning management of diarrhea

A. Oral rehydration solution in conscious patients &IV fluids in severe cases are more important than drug treatment.

B. Diphenoxylate crosses BBB to a lesser extent than loperamide

C. Toxic megacolon may occur if diphenoxylate is given in severe colitis & bloody diarrhea due to decreased GIT motility and retention of toxins

D. Paralytic ileus & respiratory depression may occur if diphenoxylate is given in acute gastroenteritis in infants and children

Cross MATCH each drug to its specific feature in management of diarrhea:

25. Diphenoxylate	A. Provide protective coat & adsorb toxins
26. Methylcellulose	B. Bulk forming decreasing stool liquidity
27. Bismuth subsalicylate	C. Opioid- related combined with atropine
28. Pectin & kaolin	D. Direct antimicrobial & decrease PG synthesis

Cross MATCH each drug to the most suitable indication:

29. Constipation with low bulk stool	A. Loperamide
30. Constipation with low frequency of defecation	B. Paraffin oil
31. Constipation with hard stool.	C. Bran/ milk of magnesia
32. Constipation with impacted stool	D. Bisacodyl/ Caster oil
	E. Docusate/ glycerin

33. The following is **not true** concerning adverse effects of anti-constipation drugs:

A. Their chronic use is discourged to avoid cathartic habit and atonic colon

B. Hyperkalemia is a common side effect.

C. Intestinal rupture may occur in case of obstruction.

D. May result in abortion in pregnant females.

E. Should be avoided in undiagnosed acute abdomen e.g. appendicitis.

24. B	25. C	26. B	27. D	28. A
29. C	30. D	31.E	32.B	33.B

Cross MATCH each drug to its specific adverse effect:

34. Paraffin oil — A. Intestinal obstruction if not taken with plenty of fluids
35. Senna — B. Mutagenic.
36. Bisacodyl — C. Lipid pneumonia
37. Bran/Psyllium — D. Flatulence & aggravation of diabetes
38. Lactulose — E. Purple coloration of urine

39. Which of the following is WRONGLY matched to its drug?

A. After anal surgery / Parrafin oil
B. Colonic preparation / Bisacodyl
C. Ingested poison / magnesium sulfate
D. Obesity & gall stones / Castor oil
E. Hepatic encephalopathy/ Lactulose

40. Which of the following is not a mechanism of action of lactulose

A. Acidifies colon contents
B. Binding of ammonia.
C. Inhibition of ammonia producing bacterial flora.
D. Bulk laxative effect.

41. Which of the following statements is correct ?

A. Lansoprazole is readily absorbed from the stomach.
B. Acid suppressants increase activity of sucralfate.
C. 50% of the dose of famotidine is decomposed by gastric acidity.
D. Misoprostol induces constipation.
E. Risk of achlorohydra & cancer is higher with ranitidine than lansoprazole.

42. Which of the following drugs is/are decomposed by gastric acidity?

A. Ranitidine
B. Lansoprazole.
C. Famotidine.
D. Clarithromycin
E. B or C

43. A mucosal protective agent for long term prophylaxis for NSAID- ulcer

A. Sucralfate
B. Misoprostol
C. Colloidal bismuth
D. None of the above

34. C	35. B	36. E	37. A	38. D
39. D.	40. D	41. C	42. E	43. B

CNS PHARMACOLOGY

1. All the following are involved in the mechanism of action of morphine **Except**

   A. Most effects are mediated by activation of kappa receptors.

   B. Inhibition of calcium influx resulting in inhibition of transmitter release.

   C. Increase in K outflux resulting in hyperpolarization of neuronal membrane.

   D. Reduction of emotional response to pain.

2. Indications of morphine **do not include:**

   A. Analgesic in cancer pain.

   B. Acute pulmonary edema in acute left ventricular failure & myocardial infarction

   C. In anesthesia

   D. Severe pain following head injury.

3. Most serious adverse effect/s of morphine

   A. Dependence.

   B. Respiratory depression.

   C. Hypertension.

   D. A and B

   E. B and C

4. Constipation associated with the use of morphine may be relieved by:

   A. Docusate. C. Codeine.

   B. loperamide. D. Diphenoxylate.

5. The following is not common between pethidine & tramadol:

   A. Analgesics.

   B. Action completely reversed by naloxone.

   C. Less respiratory depression than morphine.

   D. Increase risk of convulsions with high doses.

6. Neuropathic pain may be managed by

   A. Tricyclic antidepressants. C. Carbamazepine E. All of the above

   B. Gabapantin D. Tramadol

1. A	2. D	3. D	4. A	5. B	6.E

7. The following is **not true** concerning codeine:

A. Inhibits cough center in medulla.

B. Less potent antitussive than morphine.

C. Diarrhea is a troublesome side effect.

D. Analgesic.

8. The following is **not common** between pethidine & buprenorphine :

A. Analgesic effect in severe pain.

B. Respiratory depression is increased by increasing dose.

C. Nausea & vomiting.

D. Constipation

9. Pethidine differs from morphine in all the following **Except :**

A. It is preferred for long term treatment of chronic pain

B. It is less liable to cause asphyxia neonatorum

C. It is less liable to cause biliary colic

D. It has atropine like action.

10. The following concerning naloxone is not correct:

A. Has a shorter half life than its agonist.

B. Given orally.

C. Given in anesthesia to reverse CNS depression of its agonist.

D. It is a specific antagonist to opioid receptors.

11. Which of the following is an opioid used in management of heroin withdrawal?

A. Buspirone.

B. Bupropion.

C. Buprinorphine.

D. Bromocriptine.

12. Neuroleptanalgesia may be induced by

A. Fentanyl / Midazolam

B. Midazolam /Droperidol

C. Fentanyl /Domperidone

D. Fentanyl /Droperidol

7. C	8. B	9. A	10. B	11. C	12.D

13. Conscious sedation may be induced by

A. Fentanyl / Midazolam

B. Midazolam /Droperidol

C. Fentanyl /Domperidone

D. None of the above

14. The following is **not correctly** matched to its use:

A. Diazepam/muscle spasticity.

B. Midazolam/anesthesia.

C. Clonazepam/epilepsy.

D. Buspirone/panic attack.

15. The following concerning zolpidem is **not true**

A. It is a short acting hypnotic causing less hang over than benzodiazepines .

B. It acts on benzodiazepine-1 receptor.

C. More liable to induce rebound insomnia & disturbance in REM sleep than benzodiazepines.

D. Its use is associated with less tolerance and dependence than benzodiazepines.

16. The major limitation to the use of benzodiazepines in anxiety is:

A. No antidote is available if overdose toxicity occurs.

B. Cardiovascular depression is common.

C. Dependence.

D. Increased risk of respiratory depression.

17. Which of the following is preferred for treatment of anxiety with panic attacks:

A. Buspirone.

B. Alprazolam.

C. Haloperidol.

D. Zolpidem.

18. An anxiolytic useful in a patient with a history of drug dependence is:

A. Buspirone.

B. Alprazolam.

C. Diazepam.

D. Lorazepam.

13. A	14. D	15. C	16. C	17. B	18. A

19. The dose of benzodiazepines should be adjusted in:

A. Elderly patients.

B. Concomitant administration with alcohol.

C. Hepatic dysfunction.

D. All of the above.

20. The following concerning the use of benzodiazepines is **not true** :

A. Abuse is associated with memory loss.

B. Toxic dose results in prolonged sleep.

C. Respiratory depression is reversed by flumazenil.

D. Shorter acting agents are preferred as anxiolytics.

21. A drug whose toxic dose results in prolonged sleep reversed by flumazenil

A. Triazolam.

B. Buspirone.

C. Pentobarbital.

D. Phenobarbital.

22. Flumazenil is an antidote for all the following **Except:**

A. Triazolam.

B. Buspirone

C. Zolpidem.

D. Diazepam.

23. All the following characteristics are shared by flumazenil and naloxone **Except:**

A. Have shorter $t_{1/2}$ than their respective agonists.

B. Given orally.

C. Given in anesthesia to reverse CNS depression of their agonists.

D. Specific respiratory stimulants in benzodiazepine or opioid toxicity.

24. Abuse potential of buspirone is low because

A. It has a weak anxiolytic effect.

B. It has no recognizable effect on brain neurotransmitters.

C. It has a delayed onset of action.

D. Its marked sedating effect is troublesome.

19. D	20. D	21. A	22. B	23. B	24. C.

25. Fluoxetine **does not** induce:

A. Serotonin syndrome if co administered with tranylcypromine.

B. Anxiety.

C. Nausea.

D. Marked sedation.

26. An antidepressant useful for smoking cessation is:

A. Bupropion.

B. Venlafaxine.

C. Mianserine.

D. Imipramine.

27. The following is **not true** concerning tricyclic antidepressant toxicity:

A. Arrhythmia is managed by $NaHCO_3$

B. Convulsions is one of the features of toxicity.

C. Atropine toxicity is seldom seen .

D. Conduction defects are responsible for the arrhythmia.

28. The following concerning venlafaxine is **not true**:

A. Anticholinergic side effects are frequently encountered with its use .

B. It is a norepinephrine serotonin reuptake inhibitor.

C. Nausea is a troublesome side effect.

D. Hypertension may occur during therapy.

29. Severe hypertension is most likely to occur following intake of old cheese with

A. Tranylcypromine.

B. Moclobemide.

C. Selegiline.

D. Bupropion.

30. Nocturnal enuresis is treated with imipramine but not fluoxetine because

A. Imipramine induces insomnia while fluoxetine induces sedation.

B. Imipramine is safer than fluoxetine.

C. Imipramine possesses anticholinergic effects but fluoxetine does not.

D. All of the above

25. D	26. A	27. C	28. A	29. A	30. C

31. Indications of antidepressants **do not include**:

A. Convulsive disorders.
B. Eating disorders
C. Chronic neuropathic pain.
D. Obsessive-compulsive disorders.

32. The nonselective MAOIs have limited use as antidepressants because of their

A. Low efficacy
B. High toxicity
C. Potential to interact with many foods and drugs
D. Both B & C.

33. Reduction in sexual function is least seen with

A. Imipramine
B. Fluoxetine.
C. Bupropion.
D. Both B & C.

34. Disadvantages of tricyclic antidepressants include:

A. Narrow safety margin.
B. Frequent side effects.
C. Delayed therapeutic effect.
D. All of the above

35. The following is **not correctly** matched:

A. Fluoxetine/ selective serotonin reuptake inhibitor.
B. Mirtazapine/presynaptic α_2 receptor blocker.
C. Venlafaxine/ norepinephrine serotonin reuptake inhibitor.
D. Moclobemide/ selective monoamine oxidase - B inhibitor.

Cross Match

36. Bupropion.	A. Norepinephrine serotonin reuptake inhibitor
37. Buspirone	B. Inhibitor of dopamine & NE reuptake
38. Venlafaxine	C. Agonist/Partial 5HT1A agonist
39. Fluoxtine	D. Selective serotonin reuptake inhibitor

31. A	32. D	33. C	34. D	35. D
36. B	37.C	38. A	39. D	

Cross Match

40. Bupropion.	A. Sexual dysfunction & atropine side effects
41. Imipramine	B. Hypertension
42. Venlafaxine	C. Convulsions with no reduction in sexual dysfunction
43. Fluoxtine	D. Sexual dysfunction & serotonin syndrome

44. Uses of antiepileptics include all the following **Except:**

A. Lamotrigine / mood stabilizer in bipolar manic depression

B. Phenytoin /digitalis arrhythmia.

C. Gabapentin/neuropathic pain

D. Carbamazepine/dilutional hyponatremia.

45. Gingival hyperplasia is a common side effect of:

A. Valproate

B. Phenytoin

C. Ethosuximide

D. Carbamazepine

46. The following side effect is most likely to be seen with carbamazepine

A. Water retention

B. Coarse facial features

C. Hirsutism

D. Gingival Hyperplasia

47. Hirsutism may be induced by:

A. Valproate

B. Heparin

C. Interferon.

D. Phenytoin

E. B and D

48. Valproate toxicity does not include:

A. Hirsutism

B. Hand tremor

C. Thrombocytopenia

D. Rare but fatal hepatitis.

40. C	41. A	42. B	43. D	44. D
45. B	46. A	47. D	48. A	

49. A mood stabilizer safe in pregnant patients with bipolar depression is

A. Carbamazepine.

B. Valproate.

C. Phenytoin.

D. Ethosuximide.

50. An antiepileptic drug for absence seizures is:

A. Diazepam.

B. Carbamazepine.

C. Ethosuximide.

D. Phenytoin

51. The following antiepileptic is **not used** in tonic clonic epilepsy:

A. Phenytoin.

B. Carbamazepine.

C. Valproate.

D. Ethosuximide.

52. Preferred therapy for a girl with combined absence and tonic clonic epilepsy is

A. Valproate.

B. Carbamazepine.

C. Ethosuximide.

D. Phenytoin plus carbamazepine.

53. All the following are important guidelines in the management of epilepsy **Except**

A. All antiepileptics should be given after meals.

B. Pregnant females should discontinue the antiepileptic drug

C. Gradual withdrawal of therapy to avoid status epilepticus.

D. Monotherapy is preferred to avoid drug interactions.

54. The following is **not correctly** matched to its mechanism of action:

A. Phenytoin/sodium channel blockade.

B. Clonazepam/ Cl channel blockade.

C. Valproate/inhibition of GABA transaminase.

D. Ethosuximide/Ca channel blockade.

49. A	50. C	51. D	52. A	53. B	54. B

55. An antiepileptic suitable for a pregnant women with tonic clonic epilepsy is

A. Phenytoin.

B. Carbamazepine.

C. Valproate.

D. Ethosuximide.

56. Teratogenic effects are more likely to be induced by

A. Phenytoin.

B. Valproate.

C. Carbamazepine.

D. A and B.

57. The following is **not true** about antipsychotics:

A. Control symptoms of schizophrenia without affecting the basic disorder.

B. Low potency drugs are preferred in elderly & cardiac patients.

C. Thioridazine may block cardiac conduction & increase QT interval.

D. They do not induce dependence

58. The correct statement (s) regarding extrapyramidal effects of antipsychotics

A. Occur most commonly with low potency agents.

B. Tardive dyskinesia is relieved by anticholinergics

C. Anticholinergics are useful in neuroleptic-induced parkinsonism.

D. Both A and B.

59. The following is/are correctly matched with areas of dopamine blockade

A. Extrapyramidal effects /basal ganglia

B. Antipsychotic/mesolimbic

C. Antiemetic /chemoreceptor trigger zone

D. All of the above.

60. The risk of inducing rigidity, tremors& tardive dyskinesia in schizophrenics is highest with

A. Haloperidol.

B. Clozapine.

C. Thioridazine.

D. Olanzapine.

55. B	56. D	57. B	58. C	59. D	60. A

61. A drug effective in reducing emotional bluntness in schizophrenics is

A. Carbamazepine.

B. Clozapine.

C. Chlorpromazine.

D. Clonazepam.

62. Which of the following drugs could rapidly calm a violent patient?

A. Haloperidol.

B. Buspirone.

C. Flumazenil.

D. Fluoxetine

63. A drug reserved for resistant cases of schizophrenia for fear of agranulocytosis?

A. Haloperidol.

B. Clozapine.

C. Olanzapine.

D. Risperidone.

64. Which of the following improves negative symptoms in schizophrenia?

A. Thioridazine.

B. Risperidone.

C. Haloperidol.

D. Chlorpromazine.

65. The advantage of adding bromocriptine to L-dopa is

A. Activates D_1 receptors improving the condition.

B. Reduces the risk of psychosis of L-dopa.

C. More effective than L-dopa.

D. Longer $t_{1/2}$ & rapid absorption reducing fluctuations in L-dopa response.

66. Which of the drugs listed does **not reduce** fluctuations in response to L-dopa:

A. Benztropine.

B. Selegiline.

C. Entacapone.

D. Ropinirole.

61. B	62. A	63. B	64. B	65. D	66. A

67. Effects of selegiline in Parkinsonism do **not** include:

A. Sedative effective relieving insomnia of Parkinsonism.

B. Used with L-dopa/ carbidopa to prolong its action.

C. Inhibits MAO-B.

D. Decreases fluctuations in L- dopa response.

68. Nausea and vomiting of L-dopa may be reduced without interference with its antiparkinsonian effect by coadministration of:

A. Metoclopramide.

B. Domperidone.

C. Carbidopa.

D. B and C.

69. The following adverse effect of L-dopa is not minimized by carbidopa:

A. Involuntary movements (dyskinesia).

B. Nausea & vomiting.

C. Arrhythmia.

D. Postural hypotension.

70. The following about thiopental is **WRONG** :

A. Ultra short acting due to rapid metabolism.

B. Has a rapid onset of action due to rapid crossing of BBB.

C. Enzyme inducer and may precipitate porphyria.

D. May induce respiratory depression with no available antidote.

71. One of the following anesthetic protocols is **NOT correctly** matched:

A. Dissociative anesthesia/ ketamine.

B. Conscious sedation/ midazolam & fentanyl.

C. Deep sedation/ propofol.

D. Neuroleptanalgesia / propofol plus fentanyl.

72. Which of the following possesses a weak analgesic effect?

A. Nitrous oxide

B. Ketamine

C. Halothane

D. Sufentanyl

67. A	68. D	69. A	70. A	71.D	72. C

73. A drug inducing a GABA- mediated sedative hypnotic effect in intensive care units

A. Remifentanyl.

B. Propofol

C. Ketamine.

D. B and C

74. Dentists avoid extraction in infection because of all the following **Except:**

A. Fear of spread of infection.

B. Infection decreases extracellular unionized form of local anesthetics.

C. Infection reduces crossing of local anesthetics inside nerve cell.

D. Infection increases extracellular unionized form of local anesthetics.

75. The following is **not true** concerning ester type local anesthetics:

A. Shorter acting than amides.

B. Less liable to induce allergy.

C. Less liable to systemic toxicity than amides.

D. Procaine is a member of this group.

76. The following is **not true** about local anesthetics:

A. Adding sodium bicarbonate increases activity of local anesthetics.

B. Bupivacaine is short acting.

C. Lidocaine is an amide.

D. Benzocaine is used as a surface anesthetic.

77. The following is **not true** about cocaine:

A. It is a local anesthetic.

B. Acute toxicity may result in convulsions.

C. It is a potent vasodilator.

D. Chronic abuse results in psychosis.

78. Thiamine deficiency occurs most commonly with abuse of:

A. Heroin.

B. Alcohol.

C. Cocaine.

D. Cannabis.

73. B	74. D	75. B	76. B	77. C	78.B

79. The following is **not true** about drug abuse:

A. Short acting agents are less liable to be abused.

B. Death from cocaine overdose may result from severe hypertension.

C. A red eye is one of the consequences of cannabis addiction.

D. Bupropion reduces craving in patients who quit smoking.

80. The following abused drug is WRONGLY matched to replacement therapy :

A. Pentobarbital/phenobarbital.

B. Morphine/methadone.

C. Alcohol/disulfiram.

D. Alprazolam/diazepam.

81. Nicotine abuse may be managed by

A. Varenicline. C. Buprenorphine.

B. Bupropion. D. Acomprosate E. A and B

82. Less extrapyramidal side effects with risk of agranulocytosis may be seen with

A. Clozapine. C. Haloperidol.

B. Thioridazine. D. Risperidone. E. Olanzapine

83. Sedation is most marked with

A.Fluxotine. C. Flumazenil

B. Zolpidem. D. Buspirone E.Valproate

Cross Match each drug with its main characteristic feature:

84. Pethidine A. Partial agonist used in management of opioid addict

85. Remifentanyl B. Pure agonist used in management of opioid addict

86. Methadone C. Not to be used for more than 48 hours to avoid risk of convulsions due to its toxic metabolite

87. Tramadol D. Ultra short acting given by intravenous infusion

88. Buprenorphine E. Mixed opioid non opioid, partially antagonized by naloxone

79. A	80. C	81. E	82. A	83. B
84. C	85.D	86.B	87. E	88. A

89. The following is/are long acting

A. Diazepam. C. Remifentanyl.

B. Zolpidem D. A and B E. A and C.

90. The following is true concerning opioids

A. Inhibit potassium outflux from neuronal membrane.

B. May be safely given in liver disease.

C. Naloxone effectively blocks effects of tramadol .

D. Pethidine is used in chronic moderate and severe pain.

E. None of the above.

91. The following is true concerning anxiolytics

A. Triazolam is a long acting agent used in insomnia .

B. Most are excreted unchanged by the kidney.

C. Shorter acting agents are preferred as anxiolytics.

D. Toxicity of buspirone may be reversed by flumazenil.

E. Alprazolam is used in anxiety with panic attacks .

92. The following is correctly matched to its adverse effect

A. Clozapine/marked extrapyramidal side effects .

B. Olanzapine /agranulocytosis more common compared to clozapine.

C. Haloperidol/ conduction defects more common than thioridazine

D. Venlafaxine/hypertension more common.

E. Fluoxetine/prominent anticholinergic side effects.

93. The following is/are true concerning antiepiletics

A. Females who get pregnant should discontinue the antiepileptic drug.

B. Lamotrigine may induce fatal dermatitis.

C. They are contraindicated in neuropathic pain.

D. Carbamzepine antagonizes the action of antidiuretic hormone.

E. B and D

94. NMDA receptor antagonists include:

A. Galantamine C. Memantine

B. Ketamine D. Rivastigmine E. B and C

89. A	90. E	91.E	92. D	93. B	94. E

95. The following is NOT used in alcohol abuse

A. Disulfiram C. Flumazenil

B. Acamprosate D. Naltrexone E. Thiamine

Cross Match each of the following to its adverse effect

96. Livido reticularis

97. Fatal hepatotoxicity & hair thinning

98. Chest wall rigidity

A. Fentanyl

B. Lamotrigine

C. Carbamazepine

D. Valproate

E. Amantadine

Cross Match each of the following drugs to its mechanism of action

99. Inhibitor of serotonin & norepinephrine reuptake

100. Inhibitor of dopamine & NE reuptake

101. Agonist/Partial 5HT1A agonist

102. Increases serotonin & norepinephrine release

A. Bupropion

B. Buspirone

C. Tramadol

D. Mirtazapine

E. Moclobemide

103. Which of the following statements concerning anesthetics is correct ?

A. Thiopental is ultra short acting due to rapid metabolism.

B. Ketamine blocks NMDA receptors .

C. Propofol possesses a strong analgesic effect.

D. Halothane is the least likely inhalation agent to increase intracranial tension.

E. Dissociative anesthesia is induced by midazolam.

104. The following concerning antiparkinsonian drugs is/are CORRECT?

A. Apomorphine is given subcutaneously in emergency.

B. L-dopa- induced dyskinesia is reduced by carbidopa.

C. Benztropine reduces fluctuations in response to L-dopa.

D. Amantadine may induce insomnia.

E. A and D.

95. C	96. E	97. D	98. A	99. C
100. A	101. B	102. D.	103. B	104. E

Non-Steroidal Anti-Inflammatory Drugs

1. Which of the following is not a NSAID? :

   A. Aspirin
   C. Indomethacin
   B. Paracetamol
   D. Ibuprofen

2. Which one of the following statements regarding NSAIDs is **FALSE**?

   A. Nephrotoxicity may occur on chronic use of high doses

   B. Respiratory depression seen with opioid analgesics does not occur with therapeutic doses of NSAIDs

   C. Their use does not result in drug dependence seen with opioid analgesics

   D. Aspirin is a good choice for use as analgesic antipyretic for children

   E. They may cause gastric mucosal irritation and bleeding

3. The following is common between aspirin and other NSAIDs

   A. Reversibly inhibit COX enzyme

   B. Prolonged antiplatelet effect

   C. Prophylaxis against myocardial infarction.

   D. Hypersensitivity reactions may occur

4. NSAIDs are best avoided in:

   A. Asthmatic patients
   C. Patients with a history of gastric bleeding
   B. Hypersensitivity to aspirin
   D. All of the above

5. All the following uses are shared by both aspirin and celecoxib **EXCEPT**

   A. Anti-inflammatory in chronic inflammatory musculoskeletal disorders.

   B. Prophylaxis against myocardial infarction.

   C. Acute pain.

   D. Primary dysmenorrhea.

6. Which of the following analgesic agents poses a risk in a 60-year-old patient with a history of transient ischemic attacks

   A. Paracetamol
   C. Aspirin.
   B. Celecoxib.
   D. A and B

1. B	2.D	3. D	. 4. D	5.B	6. B.

7. Which of the following is **FALSE** concerning selective COX 2 inhibitors ? :

A. Are associated with low risk of gastric ulceration

B. Have a low risk of cardiotoxicity and stroke

C. Nephrotoxicity is a serious adverse effect

D. Celecoxib should not be given to patients with sulfonamide allergy

8. The following drug is **NOT** correctly matched to its side effects

A. Indomethacin/ severe headache due to cerebral VD.

B. Paracetamol/ bleeding.

C. Celecoxib/ rash since it is structurally related to sulfonamides.

D. Ibuprofen/Reye's syndrome.

E. B and D

9. Which of the following statements about aspirin is **INCORRECT:**

A. It is mainly used today as a cardiovascular drug.

B. It reversibly inhibits COX enzyme.

C. Hyperuricemia occurs with low dose.

D. Inhibits platelet aggregation in low dose.

E. Tinnitus may occur with high dose

10. Which one of the following statements regarding paracetamol is **TRUE**? :

A. It is excreted unchanged by the kidney

B. The maximum recommended daily dose in adults is 4 gm.

C. Exhibits strong anti-inflammatory activity

D. It should not be given in patient allergic to aspirin

11. Concerning paracetamol, all are true **Except:**

A. Preferred to aspirin in peptic ulcer.

B. Acute paracetamol poisoning causes hepatic damage.

C. Interferes with excretion of uric acid.

D. May be used intravenously in acute fever of infectious origin.

12. The following agent/s is/are used in transient ischemic attacks

A. Low dose aspirin C. Heparin

B. Warfarin D. A and B E. A and C

7. B	8. E	9. B	10. B	11. C	12. A

Cross Match each of the following adverse effect to the corresponding drug

13. Aplastic anemia & bleeding
14. Diarrhea & alopecia
15. Hyperuricemia & bleeding

A. Colchicine in gout
B. Paracetamol in fever
C. Indomethacin in osteoarthritis
D. Aspirin in transient ischemic attacks
E. Ibuprofen in dysmenorrhea

16. Chronic use of which of the following may increase paracetamol toxicity

A. Cimetidine
B. Ketoconazole
C. Rifampicin
D. None of the above

17. Which of the following reversibly inhibits COX-1 and COX-2 enzymes?

A. Aspirin
B. Ibuprofen
C. Allopurinol
D. Celecoxib
E. Sulphinpyrazone

18. The following is NOT true?

A. Liver failure following paracetamol toxicity is due to glutathione depletion
B. Piroxicam is given 3 times daily
C. Diclofenac exhibits higher efficacy than ibuprofen & less side effects than indomethacin
D. Sulfinpyrazone may induce peptic ulcer
E. Probencid & sulfinpyrazone may induce acute attack of gout

19. This adverse effect is less with celecoxib compared to indomethacin

A. Nephrotoxicity
B. Stroke
C. Myocardial infarction
D. Skin rash
E. Peptic ulcer

20. Indomethacin is least likely to be prescribed in

A. Acute gouty arthritis.
B. Osteoarthritis
C. Patent ductus arteriosus.
D. Rheumatoid arthritis.
E. Ankylosing spondiolytis

21. The following poses the least risk of adverse cardiovascular events

A. Naproxen
B. Piroxicam
C. Diclofenac
D. Indomethacin

13. C	14.A	15. D	16. C	
17. B	18. B	19.E	20. B	21. A

RESPIRATORY PHARMACOLOGY

1. Select the fastest acting inhaled bronchodilator used in asthma

   A. Ipratropium.

   B. Salbutamol.

   C. Tiotropium.

   D. Salmeterol.

2. The safest drug to relieve an acute attack of asthma in a cardiac patient is:

   A. Ipratropium.

   B. Salbutamol.

   C. Epinephrine.

   D. Theophylline.

3. All the following inhibit mast cell degranulation **Except:**

   A. Nedocromil.

   B. Penicillin

   C. Cromolyn.

   D. Salbutamol

4. All the following are long term controllers used in asthma **except**

   A. Budesonide.

   B. Salbutamol.

   C. Montelukast.

   D. Cromolyn.

5. The following is not a side effect of β_2 agonists:

   A. Tremors.

   B. Hyperkalemia.

   C. Anxiety.

   D. Tolerance.

1. B	2.A	3. B	4. B	5.B

6. In comparison to inhaled β_2 agonists, the inhaled anticholinergics:

A. Are more effective in bronchial asthma.

B. Are better suited for control of an acute attack of asthma.

C. Produce slower response in bronchial asthma.

D. Produce little benefit in COPD.

7. All of the following statements regarding theophylline are true **Except:**

A. It inhibits phosphodiesterase enzyme & increases cyclic AMP in mast cells

B. It works in part by blocking adenosine A1 receptors.

C. If given with erythromycin, decreased levels of theophylline may occur

D. Higher doses may be required to achieve therapeutic levels in smokers

8. Selecting theophylline dose depends on all the following **Except:**

A. Smoking history

B. Presence of renal insufficiency

C. Presence of congestive heart failure or cor pulmonale.

D. Presence of hepatic failure

9. Toxicities of theophylline include all the following **Except:**

A. Tachycardia.

B. Convulsions.

C. Hyperkalemia.

D. Insomnia.

E. Nausea & vomiting

10. Theophylline is not a first line drug in asthma due to all the following **Except:**

A. Narrow safety margin.

B. Requires frequent serum monitoring.

C. Numerous adverse effects and drug interactions.

D. Cannot be given orally.

6. C	7.C	8. B	9. C	10.D

11. All the following dilate bronchi during an acute asthmatic attack **Except:**

A. Ipratropium.

B. Salbutamol.

C. Nedocromil.

D. Theophylline.

12. A drug used in asthma that induces hoarsness of voice and candidiasis is

A. Ipratropium.

B. Fluticasone.

C. Salbutamol.

D. Salmeterol.

13. All the following reduce side effects of corticosteroids in asthma **Except:**

A. Using a spacer device.

B. Gargling and spitting following inhalation.

C. Giving oral medication late in the afternoon.

D. Resorting to oral medication only in severe uncontrolled cases.

14. All of the following statements regarding ciclesonide are true **Except:**

A. Bronchodilator

B. Prodrug, activated by bronchial esterases.

C. High 1st pass & plasma protein binding → less systemic side effects

D. Less frequent candidiasis.

15. Therapeutic uses of cromolyn do not include :

A. Long term control of mild asthma.

B. Long term control of severe asthma.

C. Allergic conjunctivitis.

D. Allergic rhinitis.

16. The following is not an adverse effects of inhalation of cromolyn

A. Throat irritation.

B. Cough.

C. Chest tightness.

D. Oral candidisis.

11. C	12.B	13. C	14. A	15.B	16.D

17. Reflex bronchoconstriction is most likely with inhalation therapy using:

A. Nebulizers.

B. Nebulizers with spacer device.

C. Metered dose spray of drug in solution.

D. Dry microfine powder inhalation.

18. Advantages of epinephrine in anaphylaxis include all the following **Except**

A. Rapid β_2 bronchodilator

B. α_1 vasoconstrictor decongestant effect.

C. β_1 cardiostimulant.

D. Wide safety margin with reduced risk of arrhythmia.

19. An asthmatic on salbutamol inhaler, taken as on need basis, experiences an acute exacerbation & uses the inhaler several times/day, every day; you would recommend:

A. Add an inhaled corticosteroid.

B. Add an oral corticosteroid 7 day course.

C. Replace salbulamol by salmeterol.

D. Add cromolyn Sodium.

20. An asthmatic suffering from moderate bronchospasm & wheezes about twice/week is treated by salbutamol as on need basis plus beclomethazone by inhalation. Salmeterol, may be used in this patient as:

A. A replacement for the inhaled corticosteroid.

B. The preferred agent for acute symptom control (rescue medication).

C. Replacement for salbulamol.

D. An add- on to current medication for additional prophylaxis.

21. The following drugs should not be given alone but should always be combined with an inhaled corticosteroid for asthma control

A. Montelukast.

B. Salmeterol.

C. Nedocromil.

D. Theophylline.

E. B and C

17. D	18.D	19. B	20. D	21.E

22. A patient with severe acute asthma, acidosis & hypoxia received repeated doses of salbutamol which failed to dilate the airways & resulted in dangerous tachycardia. This case might be resolved by:

A. Switching to epinephrine.

B. Adding salmeterol.

C. Giving a systemic corticosteroid.

D. Adding cromolyn.

23. All the following concerning management of COPD are correct **Except:**

A. Antimuscarinics are more effective than in asthma.

B. Ipratropium is a long acting antimuscarinic used as maintenance therapy.

C. Ipratropium use is associated with tolerance.

D. Theophylline reduces diaphragmatic fatigue.

Cross Match the following drugs to its most suitable feature in anti-asthma therapy

24. Montelukast	A. Preferred reliever in cardiac patients
25. Theophylline	B. Inhaled controller combined with budesonide
26. Salmeterol	C. Preferred controller in cardiac patients
27. Ipratropium	D. Preferred in aspirin - induced asthma
	E. Improves diaphragmatic fatigue in COPD

Cross Match the following drugs to its most suitable indication in asthma

28. Theophylline	A. Maintenance therapy in COPD
29. Prednisolone	B. Improves diaphragmatic fatigue in COPD
30. Budesonide	C. Preferred controller in asthma
31. Tiotropium	D. Add - on systemic controller in resistant asthma only
	E. Most rapid reliever

22. C	23. B	24. D	25.E	26. B	27. A
	28.B	29.D	30. C	31. A	

32. Which of the following is least preferred in status asthmaticus:

A. Intravenous theophylline.
B. Nebulized salbutamol.
C. Nebulized ipratropium.
D. Intravenous methylprednisolone.

33. Which of the following is **not** an adverse effect of codeine?

A. Drowsiness.
B. Paradoxical excitement (in children below 6 years).
C. Mild dependence.
D. Diarrhea.
E. Respiratory depression , when used in large doses as analgesic.

34. Dextromethorphan is preferred to codeine as antitussive because

A. Less risk of dependence & respiratory depression
B. Acts peripherally not centrally.
C. It has potent analgesic effect while codeine is a selective antitussive .
D. Less constipating
E. A and D.

35. The following is **not true** concerning antihistamines as antitussives:

A. They are central antitussives.
B. Anticholinergic effect contributes to their antitussive effect.
C. Newer generations of antihistamines are preferred as antitussives.
D. Dryness of mouth is a troublesome side effect.

36. An ingredient of an OTC medication dangerous in hypertensive patients is

A. Dextromethorphan.
B. Bromhexine.
C. Pseudoephedrine
D. Guaiphensin

37. Which of the following is **not correctly** matched

A. Benzonatate / opioid antitussive.
B. Acetylcystiene/ paracetamol toxicity.
C. Iodides/expectorants & mucolytics.
D. Volatile oils/antitussives & expectorants.

32. A	33. D	34. E	35. C	36.C	37.A

38. Which of the following statements concerning asthma is WRONG?

A. Ipratropium is the safest drug to relieve an acute attack in a cardiac patient.

B. Tiotropium is used in long term management of COPD.

C. Salbutamol is faster acting than ipratropium.

D. Dose adjustment of theophylline is required in hepatic not in renal dysfunction.

E. Bambuterol is a pro-drug given only by inhalation .

39. Which of the following statements regarding antiasthma drugs is CORRECT?

A. Theophylline induces coronary and cerebral vasodilation.

B. Montelukast is given three times daily .

C. Beta 2 agonists are faster acting than anticholinergics.

D. Tiotropium may induce more tolerance than ipratropium.

E. Omalizumab inhibits lipoxygenase enzyme.

40. A drug given orally daily in asthma

A. Omalizumab C. Salmeterol.

B. Montelukast D. Cromolyn E. Tiotropium

Cross Match each of the following drugs to its most suitable indication in asthma

41. Montelukast. A. Preferred controller in aspirin - induced asthma

42. Prednisolone B. Improves diaphragmatic fatigue in COPD

43. Budesonide C. Preferred controller in asthma

44. Salbutamol D. Add - on systemic controller in resistant asthma only

E. Most rapid reliever

Cross Match each of the following drugs to its side effect

45. Zafirlukast A. Throat irritation - cough

46. Theophylline B. Sedation, tremors, hypoxemia

47. Cromolyn C. Cardiac arrest if given rapidly intravenously

48. Salbutamol D. Enzyme inhibitor resulting in drug interactions

E. Anxiety, tachycardia, hypoxemia

38. E	39. C	40. B	41. A	42.D	43.C
44. E	45. D	46. C	47.A	48.E	

MISCELLANEOUS

Cross Match each of the following precautions to the appropriate drug

1. Inhale salbutamol before its administration
2. Increase dose in heavy smokers
3. Taken with a full glass of water while sitting upright
4. Stop at 6mg dose or if diarrhoea occurs

A. Colchicine
B. Montelukast
C. Aminophylline
D. Alendronate
E. Cromolyn

Cross Match each of the following drugs to the appropriate syndrome

5. Aspirin
6. Tetracycline
7. Chloramphenicol

A. Grey baby syndrome
B. Serotonin syndrome
C. Fanconi syndrome
D. Reys syndrome
E. Red man syndrome

Cross Match each of the following combinations

8. Interferon in hepatitis
9. Metronidazole in amebic liver abscess
10. Amphotericin in fungal meningitis
11. Ritonavir in AIDS

A. Combined with ketoconazole
B. Combined with flucytosine
C. Combined with chloroquine
D. Combined with zidovudine
E. Combined with ribavirin

Cross Match each of the following combinations

12. Lansoprazole in anti H- pylori therapy
13. Doxycycline in brucellosis
14. Gentamycin in bacterial endocarditis

A. Combined with famotidine
B. Combined with amoxicillin
C. Combined with benzathine Penicillin
D. Combined with rifampicin.
E. Combined with Penicillin G

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

Cross Match each of the following precautions to the appropriate drug

15.Enterically coated tablet to avoid destruction by Hcl
16.May induce encephalopathy in renal dysfunction
17. May aggravate diabetes

A. Lactulose.
B. Clarithromycin
C. Sucralfate
D. Erythromycin

Cross Match each of the following precautions to the appropriate drug

18. Not taken with alcohol to avoid disulfiram reaction
19. Avoid with acid suppressants
20. Avoid with sildenafil
21. Avoid in patients with myasthenia gravis

A. Ketoconazole
B. Metronidazole
C. Fluconazole
D. Gentamycin
E. Nitrates

Cross MATCH each of the following drugs to its side effect:

22. Phenytoin
23. Sulfonamides
24. Heparin
25. Carbamazepine
26. Propylthiouracil.

A. Crystalluria and nephrotoxicity
B. Thrombocytopenia and alopecia
C. Agranulocytosis and maculopapular rash
D. Megaloblastic anemia and lymphadenopathy
E. Dilutional hyponatremia

Cross Match each drug with its specific adverse effect:

27 . Sucralfate
28. Ondansetron
29. Clozapine
30. Methotrexate
31. Bisacodyl

A. Flushing in head & epigastrium and constipation
B. Folate deficiency
C. Purple urine
D. Aluminum toxicity and constipation
E. Agranulcytosis and constipation

Cross Match each drug with its specific pharmacokinetic feature:

32. Irregular bioavailability & saturation kinetics
33. Ultrashort acting as it is hydrolysed by esterases
34. Acetylation in liver is genetically determined
35. Enterically coated as it is destroyed by gastric acidity

A. Isoniazid
B. Phenytoin
C. Clarithromycin
D. Esmolol
E. Erythromycin

15. D	16. C	17.A	18. B	19. A	20. E	21. D
22.D	23.A	24.B	25. E	26. C	27. D	28. A
29. E	30. B	31.C	32. B	33. D	34. A	35. E

Cross Match each of the following precautions to the appropriate drug

36. Solution covered with foil
37. Avoid with dairy products
38. Avoid in digoxin induced heart block

A. Potassium chloride
B. Ampicillin
C. Atropine
D. Tetracycline
E. Nitroprusside

Cross MATCH each of the following drugs to its specific effect

39. Red urine
40. Dark urine
41. Purple urine

A. Docusate
B. Rifampicin
C. Clindamycin
D. Metronidazole
E. Bisacodyl

Cross match each of the following to its side effect

42. Misoprostol
43. Oxybutinin
44. Metoclopramide
45. Sucralfate

A. Dry mouth & residual urine
B. Diarrhea & abortion
C. Diarrhea & Parkinsonism
D. Diarrhea & aluminium toxicity
E. Constipation & aluminium toxicity

Cross Match each of the following to the possible drug interaction

46. Famotidine reduces its absorption
47. Increases risk of ototoxicity with frusemide
48. Reduces efficacy of sucralfate
49. Combined with allopurinol to avoid an acute attack of gout

A. Fluconazole.
B. Amikacin
C. Ketoconazole
D. Lansoprazole
E. Cefazolin
F. Naproxen

50. Extensive first-pass metabolism is most likely to occur with

A. Digoxin
B. Lidocaine.
C. Nadolol
D. Isosorbide mononitrate

36. E.	37. D	38. A	39. B	40. D	41.E
42.B	43. A	44. C	45. E	46.C	
47. B	48. D	49. F	50. B		

Cross Match each of the following to precaution during administration

51. May induce hematoma if given intramuscularly
52. Precipitates penicillin if given in same syringe
53. Antihistamine is given prior to intravenous infusion.
54. Taken with a full glass of water, while sitting upright

A. Vancomycin
B. Gentamycin
C.Heparin
D. Calcitonin
E. Alendronate

Cross Match each of the following to the favourable drug coadministration

55. Fluticasone for asthma control
56. Amphotericin in fungal meningitis
57. Meclezine in morning sickness.

A. Ipratropium
B. Ketoconazole
C. Salmeterol
D. Pyridoxine
E. Flucytosine

Cross Match each of the following to the favourable drug coadministration

58. Vitamin B 6
59. Metronidazole
60. Bisoprolol

A. Verapamil.
B. Ethambutol
C. Diloxanide
D. Nifedipine
E. Isoniazid

Cross Match each of the following drugs to its adverse effect

61. Pulmonary fibrosis & skin pigmentation.
62. High risk of cheese reaction
63. Hemorrhagic cystitis

A. Cyclophosphamide
B. Bleomycin
C. Tranylcypromine
D. Moclobemide

64. The following drug may be given orally

A. Amiodarone
B. Dopamine
C. Esmolol
D. Lidocaine

51. C.	52. B	53. A	54. E	55. C	56.E
57.D	58. E	59. C	60. D	61.B	
	62. C	63. A	64. A		

Cross Match each of the following to its adverse effect

65. Atropine side effects
66. Hyperuricemia and arthralgia
67. Optic neuritis

A. Ethambutol
B. Imipramine
C. Fluoxetine
D. Zolpidem
E. Pyrazinamide

Cross Match each drug to its effect:

68. Verapamil
69. Neostigmine
70. Nifedipine

A. Negative inotrope, bradycardia, diarrhea
B. Tachycardia, ankle edema
C. No effect on contractility or heart rate.
D. Negative inotrope, bradycardia, constipation

71. The following drug is least likely to have an adverse effect on hair

A. Valproate
B. Heparin
C. Interferon
D. Allopurinol
E. Colchicine

72. Bronchospasm is NOT induced by

A. Neostigmine
B. Propafenone
C. Dinoprost
D. Dinoprostone
E. C and D

73. The following agent/s is/are NOT a prodrug/s:

A. Lisinopril
B. Enalapril
C. Midodrine
D. α- methyl dopa.
E. A and D

74. Marked sedation may be seen with

A. Azelastine
B. Amphetamine
C. Diphenhydramine
D. Salmeterol
E. C and D

75. The following may induce arthralgia

A. Pyrazinamide .
B. Diethylcarbamazine
C. Quinupristin/dalfopristin.
D. A and B
E. All of the above

65. B.	66. E	67. A	68. D	69. A	70.B
71.D	72. D	73. A	74. C	75.E	

76. The following may induce alopecia

A. Phenytoin. C. Interferon.

B. Progestins D. Albendazole E. C and D.

77. The following may induce ocular side effects

A. Chloroquine . C. Carbamazepine.

B. Ethambutol D. A and B E. All of the above

78. Which of the following does <u>NOT</u> induce megaloblastic anemia.

A. Methyldopa C. Methotrxate .

B. Phenytoin . D. Nitrous oxide. E. Trimethoprim

79. Administration of ranitidine should be avoided with

A. Sucralfate C.Fluconazole

B. Ketoconazole D. Bismuth E. A and B

80. Gall stones may be induced by:

A. Statins C. Fibrates

B. Oral contraceptives D. B and C E. A and B

81. Which of the following drugs is <u>WRONGLY</u> matched to its side effect?

A. Indomethacin/ severe headache.

B. Paracetamol/ hepatotoxicity.

C. Celecoxib/ rash

D. Hyoscine butyl bromide/ bradycardia.

E. Ipratropium/tolerance

82. Flushing may be seen with

A.Nitrates. C. Amlodipine .

B. Ondansetron. D. Caspofungin E. All of the above

83. Which of the following drugs may aggravate diabetes?

A. Lactulose C. Dexamethazone

B. Thiazides D. B and C E. All of the above

76. E.	77. E	78. A	79. E
80. D	81.D	82.E	83. E

84. Sexual dysfunction is least expected with the use of

A.Fluxotine. C. Bupropion.

B. Imipramine. D. Thiazides. E. Propranolol

85. Hypertension may be associated with the use of

A. Amphotericin. C. Fluodrocortisone.

B. Venlafaxine. D. B and C. E. All of the above

86. Thrombocytopenia is <u>LEAST</u> likely to be seen with

A. Heparin. C. Valproate.

B. Sulfonamides. D. Fondaparinux E. Inamrinone

87. Gynecomastia and constipation are adverse effects of

A. Haloperidol. C. Metoclopramide.

B. Digoxin . D. Psyllium E. Lactulose

88. QT interval is <u>NOT</u> increased by

A. Ciprofloxacin C. Digoxin.

B. Erythromycin D. Thioridazine E. Chlorpromazine

89. The following may induce tremors:

A. Valproate C. Propranolol

B. Salbutamol D. A and B. E. A and C

90. Single daily dose is not suitable for administration of:

A. Glimipride C. Repaglinide

B. Azelastine D. Insulin glargine E. Piroxicam

91. Hirsutism is <u>NOT</u> an adverse effect expected with the use of:

A. Phenytoin C. Norgestrel

B. Corticosteroids D. Estrogen

92. Nocturnal enuresis is treated with:

A. Fluoxetine C. Bupropion

B. Imipramine D. Oxybutynin E. B and D

84. C.	85. D	86. D	87. A	88. C
89.D	90.C	91. D	92. E	

93. The following is/are correctly matched to corresponding use:

A. Heparin/anticoagulant in first trimester in pregnancy

B. Methimazole/ preferred antithyroid agent in pregnancy.

C. Midazolam/ preferred benzodiazepine in anesthesia.

D. Homatropine/preferred cycloplegic in children

E. A and C

94. Which of the following is/are long acting?

A. Remifentanyl. C. Dexamethazone.

B. Esmolol. D. Montelukast E. C and D

95. Which of the following antidotes is/are correctly matched?

A. Flumazenil / buspirone.

B. Protamine sulfate /fondaparinux.

C. Atropine /imipramine

D. Phentolamine /clonidine rebound

E. B and D

96. Atropine like action is seen with:

A. Pethidine C. Fluoxetine

B. Diphenhydramine D. A and B E. All of the above

97. Which of the following is <u>LEAST</u> likely to induce postural hypotension?

A. Imipramine C. Bisoprolol

B. Nitroglycerin D. Dimenhydrinate

98. Which of the following is least likely to induce sedation and confusion?

A. Azelastine. C. Dimenhydrinate

B. Benztropine. D. Hyoscine

99. The following is correctly matched to its side effect

A. Vasopressin/Flushing. C. Stanozolol/azospermia.

B. Flutamide/acne,hirsutism D. Ropinirole/cardiac fibrosis.

E. None of the above

93. E	94. E	95. D	96. D	97. C
		98. A	99. C	

Problem Solving I

A patient was diagnosed with angina on effort and drug A was prescribed to be taken sublingually during acute attack. Bisoprolol and a transdermal patch were prescribed as a prophylactic therapy against acute attacks. An antiplatelet drug acting on ADP receptor and an HMGCOA reductase inhibitor were added.

1. The following is most probably drug A:
   - A. Isosorbide mononitrate
   - B. Nitroglycerine
   - C. Verapamil
   - D. Isosorbide dinitrate
   - E. B or D

2. The primary mechanism by which drug A relieves the attack is:
   - A. Reduction of afterload
   - B. Vasodilatation of stenosed coronary artery
   - C. Reduction of preload
   - D. Reduction of work done by the heart through myocardial depression
   - E. Antiplatelet effect

3. The transdermal patch probably contains:
   - A. Isosorbide mononitrate
   - B. Nitroglycerin
   - C. Verapamil
   - D. Clonidine
   - E. A or B

4. The appropriate duration for application of transdermal patch is probably:
   - A. 6-8 hours/day
   - B. 8- 12 hours/day
   - C. 14- 16 hours/day
   - D. 18-24 hours/day
   - E. 1 hour during acute attack

1. E	2. C	3. B	4. C

5. The following is true about bisoprolol in angina:

A. Should be given in a dose to decrease heart rate to 80 beats/minute

B. It can be also used to terminate acute attack

C. Ivabradine can be combined cautiously to achieve target heart rate

D. It has a vasodilatory effect .

E. Higher risk of induction of bronchospasm compared to propranolol.

6. Adverse effects of bisoprolol include all of the followings EXCEPT:

A. Bradycardia

B. AV block

C. Masking the warning sign of hypoglycemia as tachycardia

D. Postural hypotension

E. Precipitation of symptoms of heart failure in susceptible patient

7. The antiplatetlet drug added was:

A. Aspirin in low dose

B. Clopidogrel

C. Abciximab

D. Epoprostenol

E. Dipyridamole

8. The following is TRUE about the HMGCOA reductase inhibitor:

A. Affects primarily triglycerides rather than cholesterol

B. Can be used safely in advanced liver disease

C. Should be combined with fibrate

D. Patients using it should be monitored for risk of myopathy

E. Induces down regulation of LDL receptor

5. C	6. D	7. B	8. D

Problem Solving II

An asthmatic patient with systolic heart failure treated with frusemide and fosinopril. Beta blocker therapy was initiated. After stabilization, digoxin was added. 2 weeks later, the patient presented in emergency room with uncontrollable vomiting and ventricular arrhythmia. The case was diagnosed as digoxin toxicity.

1. Which of the following is/are true about fosinopril:
   - A. It enhances the beneficial effects of angiotensin II
   - B. It will reduce renin
   - C. It improves exercise tolerance
   - D. It has no effect on bradykinin
   - E. B and C

2. The most suitable beta blocker in this patient is/are:
   - A. Carvedilol
   - B. Bisoprolol
   - C. Atenolol
   - D. Propranolol
   - E. A or B

3. The beneficial effects of adding the selected beta blocker in this patient is:
   - A. Improvement of symptoms
   - B. Additive inhibitory effect on remodeling to fosinopril
   - C. Potentiation of hypokalemic effect of frusemide
   - D. Improvement of peripheral circulation
   - E. Induction of coronary vasodilatation

4. The following is the best method for adding the beta blocker :
   - A. Initiate before fosinopril and frusemide .
   - B. Added to fosinopril in hemodynamically unstable patient
   - C. Added to fosinopril and frusemide in hemodynamically unstable patient
   - D. Added to fosinopril and frusemide in hemodynamically stable patient
   - E. Initiate with diuretic in hemodynamically unstable patient

1. C	2. B	3. B	4. D

5. The primary effect of digoxin in heart failure is:

A. Direct vasodilatator effect

B. Increase cardiac output

C. Enhance vagal action

D. Diuretic effect

E. Inhibition of remodeling

6. The following are predisposing factors for digoxin toxicity:

A. Hypokalemia

B. Hypomagnesemia

C. Renal impairment

D. A and C

E. All of the above

7. The following is the most suitable drug for digitalis- induced ventricular arrhythmia:

A. Procainamide

B. Amiodarone

C. Verapamil

D. Lidocaine

E. Atenolol

5. B	6. E	7. D

Problem Solving III

A 30 year old woman was hospitalized for ileofemoral thrombosis (DVT). She was immediately started on parenteral anticoagulant (drug A), monitored by aPTT. 4 days later, she developed bleeding, complete blood count revealed thrombocytopenia. Drug A was replaced with another parenteral anticoagulant (drug B)

1. Drug A is most probably:

   A. Fondaparinux C. Rivaroxaban

   B. Heparin D. Argatroban E. Warfarin

2. The following is characteristic feature of drug A:

   A. It is a direct thrombin inhibitor .

   B. It can be used safely in pregnancy

   C. It can be given intramuscular

   D. It is partially antagonized by protamine sulfate

   E. It has a risk of inducing osteoporosis on short term use

3. Drug B is most probably:

   A. Enoxaparin C. Rivaroxaban

   B. Fondaparinux D. Warfarin E. Dabigatran

4. Drug B has the following property:

   A. It is a direct thrombin inhibitor

   B. Efficiently inactivates factor Xa directly

   C. Its anticoagulant effect is efficiently reversed by protamine sulfate

   D. Should be monitored with INR

   E. Efficiently inactivates factor Xa after binding to antithrombin

5. If warfarin is used, it is better to:

   A. Start it alone from the start

   B. Start it after stoppage of parenteral drug

   C. Start it 3 days before stoppage of parenteral drug

   D. Assess renal function first to adjust the dose

   E. Start it parenterally first

1. B	2. B	3. B	4. E	5. C

Problem Solving IV

An 8 year old patient suffering from osteomyelitis. The physician suspected beta lactamase producing staph infection and prescribed him an antibiotic (drug A) with long $t_{1/2}$ to be taken parenterally once/day. The physician ordered for culture and sensitivity which revealed ORSA resistant staph and another antibiotic (drug B) was prescribed.

1. Which of the following was antibiotic A:

   A. Amikacin C. Cefoperazone

   B. Amoxicillin D. Ceftriaxone E. Ciprofloxacin

2. Drug A has the following property:

   A. Can be given safely in patient with penicillin allergy

   B. Cannot cross BBB

   C. Can be used in treatment of typhoid fever in children

   D. Can be also used orally

   E. Cannot be used in patient with renal impairment

3. Drug B is most probably:

   A. Vancomycin C. Amoxicillin/clavulenic

   B. Levofloxacin D. Cefuroxime E. Oxacillin

4. The best method for administration of drug B is:

   A. Intravenous bolus injection every 8 hours

   B. Oral dose every 6 hours

   C. Slow intravenous infusion over 1-2 hours

   D. Rapid intravenous infusion over 15 minutes

   E. Intramuscular injection every 8 hours

5. If patient developed resistant strain to drug B, the oral antibiotic (s) of choice

   A. Linezolid C. Streptogramin

   B. Daptomycin D. Vancomycin E. A and D

1. D	2. C	3. A	4. C	5. A

Problem Solving V

An asthmatic child suffered from moderate bronchospasm & wheezes about twice/week and the patient was intolerant to inhaled salbutamol. The physician prescribed him an alternative drug A to be administered on need by inhalation. Later on, the attacks increased and the physician added an inhaled prodrug as a long term controller (drug B) to be used prophylactically.

1. All of the followings is/are possible causes of salbutamol intolerance:
   A. Tachycardia C. Delayed onset
   B. Sedation D. Tremors E. A and D
2. The following is most probably drug A:
   A. Terbutaline C. Beclomethasone
   B. Ipratropium D. Salmeterol E. Cromolyn
3. The beneficial effects of drug A include:
   A. It stabilizes mast cells and prevents release of mediators
   B. It blocks adenosine receptors
   C. It stimulates beta 2 adrenergic receptors
   D. It blocks muscarinic receptors
   E. It decreases tolerance caused by beta 2 agonists
4. The following(s) is (are) characteristic features of drug A:
   A. It can be given by many routes.
   B. It is prophylactic in exercise induced asthma
   C. It has a delayed onset of action compared to salbutamol
   D. It is long acting
   E. B and C
5. The following is most probably drug B:
   A. Ciclesonide C. Beclomethazone
   B. Zafirlukast D. Cromolyn E. Theophylline

1. E	2. B	3. D	4. C	5. A

Problem Solving VI

A 55 year old menopausal woman was diagnosed to have osteoporosis. She started therapy with drug A taken orally and was asked to stay 1 hour after its administration in upright position. Vitamin D and calcium together with drug B, a hormonal analogue which decreases bone resorption, were also added.

1. The following is drug A:

   A. Alendronate C. Raloxifene

   B. Teriparatide D. Calcitonin E. Prednisolone

2. Functions of the following should be evaluated before prescribing drug A:

   A. Liver C. Thyroid

   B. Kidney D. Lung E. A and B

3. Drug B is most probably:

   A. Teriparatide C. Estrogen

   B. Stanozolol D. Raloxifene E.Denosumab

4. The following is an adverse effect of drug B:

   A. Risk of deep venous thrombosis

   B. Breast cancer

   C. Uterine cancer

   D. Tachycardia

   E. Virilization

5. Chronic use of the following drugs can aggravate osteoporosis EXCEPT:

   A. Heparin C.Aluminum antacids

   B. Dexamethasone D. Thiazide diuretic E.Thyroid hormone

6. Vitamin D preparation(s) not requiring renal activation include:

   A. Vitamin D2 C. Dihydrotachysterol

   B. Vitamin D3 D. Alfacalcidiol E.C and D

1. A	2. B	3. D
4. A	5. D	6. D

Problem Solving VII

A 40-year-old male started antiplatelet therapy for prophylaxis against transient ischemic attacks. One week later, he came to the clinic with severe pain and swelling of the metatarsal-phalangeal joint of the big toe. His serum uric acid level was high and acute gouty arthritis was diagnosed. The doctor prescribed him drug A to be taken orally. After resolving of the acute attack, the doctor decided to start drug B to be taken orally for long-term treatment.

1. The antiplatelet drug that the patient used could be:

A. Aspirin
C. Clopidogrel
B. Chlorthalidone
D. Dipyridamole
E. A or C

2. Drug A is most probably:

A. Indomethacin
C. Aspirin (5 g/d)
B. Paracetamol
D. Probenecid
E. Pegloticase

3. Adverse effects of drug A may include:

A. Precipitation of an acute attack of gout .
B. Hypoprothrombinemia
C. Respiratory depression
D. Dizziness, confusion, severe headache
E. Reye's syndrome

4. Drug B is most probably:

A. Allopurinol
C. Glucocorticoids
B. Indomethacin
D. Naproxen
E. Pegloticase

5. Which of the following precautions should be taken when starting drug B

A. Increase fluid intake
B. Alkalinization of urine
C. It should be combined with an anti-inflammatory drug in first 2 months
D. Premedication with antihistamines
E. All of the above

1. A	2. A	3. D	4. A	5. C