

1. Which of the following is not used as an antiemetic
 - A. Dexamethasone
 - B. Cannabinoids
 - C. Ondansetron
 - D. Diphenhydramine
 - E. Diphenoxylate

2. Which is INCORRECT regarding suxamethonium
 - A. It can increase heart rate
 - B. It can decrease heart rate
 - C. It does not cross the blood-brain-barrier
 - D. It increases intraocular pressure
 - E. It has a short duration of action due to rapid hydrolysis by acetylcholinesterase

3. Which of the following tetracyclines does not require dose adjustment in chronic renal failure
 - A. Minocycline
 - B. Doxycycline
 - C. Tetracycline
 - D. Methacycline
 - E. All of the above

4. Thiopentone
 - A. Can cause intra-arterial thrombosis
 - B. Is less fat soluble than other intravenous induction agents
 - C. Can cause elevation of intracranial pressure on induction of anaesthesia

5. Heparin
 - A. Causes alopecia
 - B. Can be given IM
 - C. Doses need to be halved in the elderly
 - D. Is made of homogenous mucopolysaccharides
 - E. Inhibits antithrombin III

6. Anticholinesterases reliably antagonise
 - A. Suxamethonium
 - B. Tubocurarine
 - C. Dantrolene
 - D. Baclofen
 - E. Mivacurium

7. Regarding the Vaughn-Williams classification
 - A. Type III antiarrhythmics increase K^+ conductance and prolong the action potential
 - B. X
 - C. X

8. Which of the following is correct regarding the serotonin antagonists
 - A. As a group they are more effective in obsessive compulsive disorder than TCAs
 - B. When used with morphine they can precipitate serotonin syndrome
 - C. Fluoxetine does not have an active metabolite
 - D. Paroxetine is more sedative than TCAs
 - E. They are not associated with significant drug interactions

9. An example of a protein binding interaction is
 - A. X
 - B. Digoxin-chlorothiazide
 - C. Morphine-chlorpromazine
 - D. Aspirin-tolbutamide

10. Maximum efficacy
- Is the concentration of drug that produces 50% of maximal effect
 - Is the maximum response that can be produced by a drug
 - Is independent of the route of administration
 - Is limited by side effects
 - Is the maximum intensity of the drug
11. LD₅₀ is
- 50% of the dose that kills most people
 - 50% of the dose at which toxicity occurs
 - 50% of the dose that kills experimental animals
 - The dose required to kill 50% of experimental animals
 - The ratio between TD₅₀ and ED₅₀
12. An elderly woman presents with a serum K⁺ of 6.2, which drug is she NOT taking
- Spironolactone
 - Slow K
 - Methyldopa
 - Naproxen
 - Captopril
13. ACE inhibitors
- Cause hypokalaemia
 - Are useful in diabetics
 - Can safely be used in the second and third trimesters of pregnancy
 - Have been associated with angioedema
 - Are lipid soluble and reach the CNS
14. Which of the following is correct regarding the corticosteroids
- With chronic use, they increase bronchial reactivity
 - They have adverse effects on the foetus
 - They directly relax airway smooth muscle
 - Stimulate the release of arachidonic acid
 - Prednisolone and dexamethasone are synthetic
15. Paracetamol forms toxic metabolites via
- N-hydroxylation
 - Glucuronidation
 - Sulphation
 - Oxidation
 - Reduction
16. Paracetamol
- Is a weak anti-inflammatory
 - Has high level of protein binding
 - Does not interfere with uric acid excretion
 - Can only be given orally
 - X
17. Which is incorrect regarding diazoxide
- It has a low level of protein binding
 - It is used in hypertensive emergencies
 - It may cause sodium and water retention
 - It may cause significant hypotension
 - It is structurally related to thiazides
18. The mechanism of action of digoxin is
- It increases intracellular calcium
 - It increases intracellular potassium
 - It decreases intracellular sodium
 - X
 - X

19. Nitrous oxide
- A. X
 - B. X
 - C. Has a MAC of over 100%
 - D. X
 - E. X
20. Benzodiazepines
- A. X
 - B. X
 - C. X
 - D. Have a cyclic structure
 - E. X
21. Erythromycin
- A. When given IV is in the stearate form
 - B. Undergoes hepatic metabolism
 - C. Is active against campylobacter
 - D. Is bacteriostatic only
 - E. Is excreted primarily in the urine
22. Norfloxacin
- A. Is the halogenated form of nalidixic acid
 - B. X
 - C. X
 - D. Xx
 - E. X
23. Acyclovir
- A. Is a thymidine kinase
 - B. Is a guanidine analogue
 - C. Decreases the rate of post-herpetic neuralgia
 - D. May give rise to resistant forms of HSV
 - E. X
24. Which of the following will not cause bronchodilation
- A. Cromoglycate
 - B. Theophylline
 - C. Salbutamol
 - D. Atropine
 - E. Adrenaline
25. Which of the following acts on cell membranes
- A. X
 - B. X
 - C. Ketoconazole
26. Which of the following is correct regarding aminoglycosides
- A. They require an oxygen dependent mechanism to be taken up into the cell
 - B. They synergise with penicillins at high concentrations
 - C. They decrease neuromuscular blockade
 - D. Resistance is plasmid-mediated
 - E. Resistance does not cross species
27. Which of the following is correct regarding verapamil
- A. It has low plasma protein binding
 - B. It causes sodium channel blockade
 - C. It causes skeletal muscle weakness
 - D. It is a positive inotrope
 - E. It is a dihydropyridine

28. A young man presents with hypertension and mydriasis after being given a normal dose of drug. Which of the following is it most likely to be
- A. Atropine
 - B. Adrenaline
 - C. Acetylcholine
 - D. Aspirin
 - E. X
29. A patient overdoses on an unknown substance and presents restless, agitated and sweaty with dilated pupils. Which drug is the most unlikely
- A. Angel trumpet
 - B. Atropine
 - C. Adrenaline
 - D. Aspirin
 - E. Tricyclic antidepressant
30. Which is not a feature of lithium toxicity
- A. Tardive dyskinesia
 - B. Tremor
 - C. Dysarthria
 - D. Diabetes insipidus
 - E. X
31. What occurs in phase III of drug trials
- A. A large group of patients with the target disease are treated with the drug
 - B. A small number of patients with the target disease are treated with the drug
 - C. A small number of patients without the target disease are treated with the drug
 - D. All patients being treated are monitored for the occurrence of idiosyncratic reactions
 - E. X
32. Which of the following causes the most tachycardia
- A. Adrenaline
 - B. Salbutamol
 - C. Isoprenaline
 - D. X
 - E. X
33. Allopurinol
- A. X
 - B. Is used in the acute treatment of gout
 - C. Has very few side effects
 - D. Has very low oral bioavailability
 - E. Is a xanthine oxidase inhibitor
34. Beta-blockers
- A. X
 - B. Applied topically may cause systemic effects
 - C. X
 - D. X
35. Ipratropium bromide
- A. Causes most effects within 10 minutes
 - B. Is well absorbed across the blood-brain-barrier
 - C. Is safe for use in glaucoma
 - D. Tolerance is uncommon
 - E. It has marked CNS effects
36. Aspirin
- A. Increases plasma volume
 - B. Does not cross the placenta
 - C. Is a base
 - D. Inhibits lipooxygenase
 - E. Is slowly absorbed in the ileum

37. Metoclopramide
- Increases antral motility
 - Decreases oesophageal pressure
 - X
 - X
38. Which of the following is an ester anaesthetic
- Lignocaine
 - Prilocaine
 - Tetracaine
 - Bupivacaine
 - Ropivacaine
39. Which of the following causes met-haemaglobinaemia
- Lignocaine
 - Tetracaine
 - Bupivacaine
 - Procaine
 - Prilocaine
40. Theophylline
- Metabolism is induced by smoking
 - Slow release needs levels at 6 and 12 hours
 - Causes hyperkalaemia
 - Weakens contraction of the diaphragm in patients with COAD
 - Causes sodium and water retention
41. Naloxone
- Has a half life of 4 hours
 - Can cause acute withdrawal syndrome in heroin overdose
 - Binds specifically with kappa receptors
 - Has an increased half life in the presence of renal failure
 - Produces an abstinence syndrome after withdrawal subsequent to chronic administration
42. Which of the following is correct regarding mannitol
- It affects water reabsorption in the collecting ducts and distal convoluted tubule
 - It cannot be used in patients with impaired renal dynamics
 - It metabolised to glycerol
 - It decreases total body water and total body cation content equally
 - It inhibits water absorption in the proximal tubule, Loop of Henle and collecting ducts
43. How much drug is contained in 2mL of 0.5% w/v solution
- 10 mg
 - 5 mg
 - 1 mg
 - 100 mg
 - 2 mg
44. Which of the following is correct regarding morphine
- The glucuronidated metabolite is excreted in the kidney
 - X
 - X

- | | | | | |
|-------|--------|-----------|-------|-------|
| 1. E | 2. E | 3. B | 4. A | 5. A |
| 6. B | 7. A | 8. A | 9. D | 10. B |
| 11. D | 12. C | 13. B & D | 14. E | 15. A |
| 16. C | 17. A | 18. A | 19. C | 20. D |
| 21. C | 22. ?A | 23. D | 24. A | 25. E |
| 26. A | 27. B | 28. ?A | 29. D | 30. D |
| 31. A | 32. C | 33. E | 34. B | 35. A |
| 36. A | 37. A | 38. C | 39. E | 40. A |
| 41. B | 42. E | 43. A | 44. A | |

Pharmacology

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1. Maximum efficacy
 - a. Is independent of route of administration
 - b. Gives information about the degree of receptor binding and response
 - c. Is limited by side effects
 - d. Is the concentration of drug that produces 50% of maximal effect
 - e. Is the maximum intensity of the drug

2. Propranolol
 - a. Is a highly selective β -blocker
 - b. Is largely protein bound
 - c. Has poor lipid solubility
 - d. Has partial agonist activity
 - e. Has no local anaesthetic action

3. Local anaesthetics preferentially
 - a. Affect large fibres before small fibres
 - b. Affect unmyelinated nerves before myelinated nerves
 - c. Block C type fibres before A type fibres
 - d. Block sensory fibres before motor fibres in mixed nerves
 - e. Block central before peripheral fibres in mixed nerves

4. Which of the following antiarrhythmics produces shortening of the QT interval
 - a. Quinidine
 - b. Procainamide
 - c. Lignocaine
 - d. Sotalol
 - e. None of the above

5. Which of the following antiarrhythmics has minimal effect on healthy myocardial cells
 - a. Lignocaine
 - b. Adenosine
 - c. Flecainide
 - d. Amiodarone
 - e. Propranolol

6. Which of the following is INCORRECT regarding drugs used in Parkinson's disease
 - a. Carbidopa blocks dopa decarboxylase peripherally
 - b. Dopamine cannot cross the blood-brain-barrier
 - c. Carbidopa decreases the side effects of L-dopa
 - d. Bromocriptine causes more hypotension than L-dopa
 - e. Bromocriptine causes more CNS effects than L-dopa

7. Bromocriptine
 - a. Generates its anti-Parkinsonian effects by acting on D₂ receptors
 - b. X

8. Which of the following is INCORRECT regarding salbutamol
 - a. May cause a transient decrease in oxygen tension in the blood
 - b. It acts via adenylyl cyclase
 - c. It causes hyperkalaemia
 - d. It can be given orally, parenterally or via inhalation
 - e. Bronchodilation persists for 3-4 hours

9. Which of the following is INCORRECT regarding phenytoin
 - a. It is well absorbed orally
 - b. It displays first order kinetics at low concentrations and zero order kinetics at higher concentrations
 - c. It has a high level of protein binding
 - d. It causes agranulocytosis in 5% of patients
 - e. It causes abnormalities in vitamin D metabolism

10. Which of the following is correct regarding ipratropium bromide
- Effect lasts for >4 hours after administration
 - It is well absorbed when given orally
 - The onset of peak action is 10 minutes post inhalation
 - Tolerance is common
 - It has marked CNS effects
11. Isoprenaline
- Increases myocardial oxygen consumption when compared with dobutamine
 - Is contraindicated down an ETT
 - Affects and receptors
 - X
 - X
12. Sodium cromoglycate
- is well absorbed when taken orally
 - stabilises the mast cell in response to IgA and IgE
 - is only given via inhalation
 - is not used prophylactically
 - causes rapid bronchodilation
13. metformin
- is a sulphonylurea
 - requires functioning islet cells
 - is associated with obesity
 - has been known to cause lactic acidosis
 - acts by increasing pancreatic release of insulin
14. How many mgs of drug are contained in 2mL of 0.5% w/v solution?
- 1 mg
 - 10 mg
 - 100 mg
 - 1000 mg
 - 5 mg
15. Regarding muscle relaxants, which of the following is true
- Aminoglycosides increase the efficacy of suxamethonium
 - Gallamine is excreted in the bile after hepatic metabolism
 - Vecuronium is an isoquinolone derivative
 - Atracurium causes hypotension in volume depleted patients
 - Pancuronium causes histamine release
16. Glyceryl trinitrate
- Acts after being converted to nitric oxide
 - Is metabolised to met-haemoglobin
 - Acts primarily on atherosclerotic vessels to dilate them
 - Reduces afterload but does not affect preload
 - Increases collateral coronary blood flow
17. Regarding cephalosporins
- There is no cross-reactivity with penicillin
 - Cefoxitin is a 3rd generation drug
 - 2nd generation drugs have less Gram negative action than 1st generation
 - X
 - X
18. Which of the following is considered safe in pregnancy
- ACE inhibitors
 - Heparin
 - Phenytoin
 - Warfarin
 - Lithium

19. Which is true regarding amiodarone
- It has type I and IV antiarrhythmic properties
 - Its most serious side effect is decreased renal function
 - It increases the clearance of digoxin
 - X
 - X
20. Which of the following acts at the NMDA receptor?
- Glycine
 - Glutamate
 - GABA
 - Aspartate
 - x
21. Regarding the GABA receptor
- GABA_A causes increased conductance of K⁺
 - GABA_A causes increased efflux of Cl⁻
 - Agonists at GABA_A hyperpolarise the cell
 - X
 - X
22. Which of the following doesn't cause constipation
- Verapamil
 - Digoxin
 - Imipramine
 - Codeine
 - Chlorpromazine
23. Regarding the opioids
- There is no withdrawal syndrome following prolonged use of naloxone
 - Tolerance develops readily to miosis and constipation
 - Kappa receptors are responsible for supraspinal analgesia and addiction
 - X
 - X
24. Dextropropoxyphene
- Is structurally very similar to methadone
 - Is a potent analgesic opioid
 - When combined with paracetamol has good anti-inflammatory properties
 - Is a phenylpiperidine
 - In overdose causes death from hepatic toxicity
25. Aspirin
- Has anti-inflammatory, analgesic and anti-pyretic properties
 - Increases prostaglandin and leukotriene synthesis
 - Is a reversible cyclooxygenase inhibitor
 - Is a base
 - Excretion is enhanced by acidifying the urine
26. Digoxin
- Increases intracellular calcium
 - Increases intracellular potassium
 - Is a positive chronotrope
 - Is a negative inotrope
 - Increases atrioventricular conduction velocity
27. Which of the following is correct regarding heparin
- It inhibits anti-thrombin III
 - It decreases formation of fibrin
 - It acts on factor VII
 - It acts on prothrombin
 - It inhibits the action of protein C

28. Streptokinase
- is a complex lipopolysaccharide
 - is synthesised by the human kidney
 - binds to the proactivator plasminogen
 - activates the plasminogen that is bound to fibrin
 - is more dangerous than tPA in those over 75 years of age
29. Which of the following is INCORRECT regarding corticosteroids
- They have adverse effects on the foetus
 - They cause changes by binding to intracellular proteins
 - X
 - X
 - X
30. Which is incorrect regarding Salbutamol
- It may cause a transient decrease in oxygen tension
 - It acts via adenylyl cyclase
 - It causes hyperkalaemia
 - It can be given orally, parenterally or via inhalation
 - Bronchodilation persists for 3-4 hours
31. Frusemide
- Is not as strong as thiazide diuretics
 - Decreases urinary calcium
 - Acts in the thin ascending limb of the loop of Henle
 - Relaxes smooth muscle
 - Is useful as prophylaxis in acute mountain sickness
32. Which of the following alkalinises the urine?
- Hydrochlorothiazide
 - Mannitol
 - Spirolactone
 - Acetazolamide
 - Frusemide
33. Zidovudine
- Inhibits thymidine kinase
 - Causes thrombocytosis
 - Must be given parenterally
 - Penetrates CSF poorly
 - Is eliminated primarily in the urine
34. Which of the following is correct regarding the toxicity of paracetamol
- Sulphonation generates the toxic metabolite
 - The toxic metabolite is generated via phase II reaction
 - Toxicity increases with decreased glutathione levels
 - Toxicity is enhanced with cimetidine
 - Toxicity is related to depletion of sulphates
35. Which of the following is oxidised in the liver
- Paracetamol
 - Phenytoin
 - Procainamide
 - Adrenaline
 - Methadone
36. Which of the following is NOT a phase II reaction
- Methylation
 - Glucuronidation
 - Acetylation
 - Sulphonation
 - Oxidation

Pharmacology

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1. Acyclovir is active against all of the following EXCEPT
 - A. CMV
 - B. VZV
 - C. HSV
 - D. EBV
 - E. HIV

2. Pentamidine
 - A. Is toxic to pancreatic B cells
 - B. Achieves high levels in CNS following oral administration
 - C. Can be used for prevention of *M. avium-intracellulare* in HIV patients
 - D. Has a low volume of distribution
 - E. Is toxic to hepatocytes

3. Interferons
 - A. Are directly antiviral
 - B. Exert virus-specific antiviral activities
 - C. Can be used to treat Kaposi's sarcoma
 - D. X
 - E. X

4. Ticlopidine
 - A. Decreases platelet aggregation by inhibiting the ADP pathway of platelets
 - B. Has no GI side effects
 - C. Inhibits prostaglandin metabolism
 - D. X
 - E. X

5. Prazosin
 - A. Has a half life of 18 hours
 - B. Adversely affects lipid profiles
 - C. Produces a reflex bradycardia
 - D. Has a first dose hypotensive effect
 - E. Can increase cardiac output by decreasing preload and leaving afterload unchanged

6. Zidovudine
 - A. Is a protease inhibitor
 - B. Has a short serum half life
 - C. Has no activity against retroviruses
 - D. Inhibits viral thymidine kinase
 - E. Commonly causes thrombocytosis

7. Which of the following is correct regarding penicillin G
 - A. Hyponatraemia is not reported
 - B. It has good penetration to the eye
 - C. 100 000 U intrathecally can cause seizures
 - D. 50% of people who claim to have an allergy will have an allergic response on further exposure
 - E. X

8. Which of the following causes hypoprothrombinaemia and bleeding disorders
 - A. Cefuroxime
 - B. Cephalexin
 - C. Cefaclor
 - D. Cefotetan
 - E. Ceftazidime

9. Naloxone
- A. Has a half life of over 4 hours
 - B. Has a half life of less than 1 hour
 - C. Has a half life of between 2-3 hours
 - D. Has a half life of between 1-2 hours
 - E. Has a half life of between 3-4 hours
10. Pethidine
- A. Causes raised CSF pressure
 - B. X
 - C. X
 - D. X
 - E. X
11. Which of the following is correct regarding Diazepam
- A. It does not engender psychological dependence
 - B. It is metabolised to oxazepam
 - C. Xx
 - D. X
 - E. X
12. Which of the following is correct regarding Metformin
- A. It is a sulphonylurea
 - B. It can cause a significant lactic acidosis
 - C. It is similar to chlorpropamide
 - D. Its action is dependent on insulin
 - E. It requires functioning pancreatic B cells for its action
13. Phenytoin
- A. Has low protein binding
 - B. Causes agranulocytosis in 5% of patients
 - C. Displays zero order kinetics at low concentrations and first order kinetics at higher concentrations
 - D. Has poor oral bioavailability
 - E. Can cause abnormalities of vitamin D metabolism
14. Which is the INCORRECT pairing of drug and effect
- A. Phenytoin – gum hypertrophy
 - B. Carbamazepine – blood dyscrasias
 - C. Phenobarbitone – enzyme induction
 - D. Ethosuximide – hirsutism
 - E. Carbamazepine – ataxia
15. Which local anaesthetic causes met-haemoglobinaemia
- A. Lignocaine
 - B. Tetracaine
 - C. Bupivacaine
 - D. Procaine
 - E. Prilocaine
16. Benztropine causes
- A. Miosis
 - B. Diarrhoea
 - C. Confusion
 - D. Bronchorrhoea
 - E. GIT haemorrhage
17. A patient on phenytoin has a seizure and is found to have a low level. Which of the following is LEAST likely to have caused this
- A. Phenobarbitone
 - B. Non-compliance
 - C. Hypoalbuminaemia
 - D. Disulfiram
 - E. Erythromycin

18. Heparin
- A. Inhibits antithrombin III
 - B. Causes alopecia
 - C. Decreases the rate of conversion of prothrombin to thrombin
 - D. Decreases the rate of conversion of fibrinogen to fibrin
 - E. Decreases the rate of conversion of factor VII to VIIa
19. 2mL of 0.5% w/v solution contains how much drug
- A. 1mg
 - B. 5mg
 - C. 10mg
 - D. 20mg
 - E. 100mg
20. Adenosine
- A. Blocks K^+ channels
 - B. Opens Cl^- channels
 - C. Has a half life of about 10 minutes
 - D. Profoundly blocks the SA node
 - E. Suppresses calcium-dependent action potentials
21. Regarding cromolyn, which is INCORRECT
- A. It inhibits IgE-mediated mast cell degranulation
 - B. Is used prophylactically
 - C. Causes acute bronchodilation
 - D. Is only given via inhalation
 - E. X
22. Atracurium
- A. Has a longer duration of action than vecuronium
 - B. Is not associated with histamine release
 - C. Is a steroid derivative
 - D. Is eliminated by non-renal and non-hepatic mechanisms
 - E. X
23. Which of the following is INCORRECT regarding pancuronium
- A. It is a steroid
 - B. It does not stimulate histamine release
 - C. It is renally excreted
 - D. It has a shorter duration of action than vecuronium
 - E. X
24. Which of the following antiseptics is commonly used in clinical practice
- A. 70% ethyl alcohol
 - B. 30% ethanol
 - C. Formaldehyde
 - D. Isopropyl alcohol
 - E. All of the above
25. Metronidazole
- A. Commonly causes constipation
 - B. Inhibits alcohol dehydrogenase
 - C. Is effective treatment for urogenital trichomoniasis
 - D. Is not useful in treating giardiasis
 - E. Has been shown to be teratogenic in humans
26. Erythromycin
- A. Is predominantly renally excreted
 - B. Is a cell wall inhibitor
 - C. Is bacteriostatic only
 - D. Is effective against *Campylobacter jejunii*
 - E. When given IV is in the stearate form

27. A young patient is given a normal dose of a drug in the emergency department. They develop tachycardia, hypertension and dilated pupils. The drug is most likely to be
- Adrenaline
 - Atropine
 - Aspirin
 - Acetylcholine
 - X
28. Cisapride
- Has a half life of 6-8 hours
 - Decreases lower oesophageal sphincter pressure
 - Is well absorbed orally
 - It is a potent anti-dopamine agent
 - It decreases colonic motility
29. Sumatriptan
- Is a partial μ agonist
 - Is contraindicated in angina
 - X
 - X
 - X
30. Mannitol
- Inhibits water absorption in the proximal tubule, Loop of Henle and collecting ducts
 - Is metabolised to glycerol
 - Decreases total body water and total body cation content equally
 - Is of no value when renal dynamics are compromised
 - It affects water reabsorption in the collecting ducts and distal convoluted tubule
31. Metoclopramide
- Increases tone in the pyloric sphincter
 - X
 - Decreases oesophageal pressure
 - X
 - Increases antral contractility
32. Regarding the treatment of Parkinson's disease
- Antimuscarinics are better for the treatment of tremor than dopamine agonists
 - Administration of L-dopa with a dopa decarboxylase inhibitor decreases the side effect profile
 - X
 - X
 - X
33. Dantrolene is a good choice in the treatment of malignant hyperpyrexia because
- It antagonises the effects of suxamethonium
 - It inhibits prostaglandin synthesis
 - It decreases calcium release from the sarcoplasmic reticulum in skeletal muscles
 - X
 - X
34. Which of the following is safest in pregnancy
- Lithium
 - Phenytoin
 - Warfarin
 - ACE inhibitors
 - Heparin
35. In a female patient on an ACE inhibitor, which of the following is most likely to impair hypotensive effects
- Indomethacin
 - Atenolol
 - Spirolactone
 - Irbesartan
 - Frusemide

36. Regarding enzyme induction
- A. It is irreversible
 - B. It takes about 4 months to develop
 - C. It results in an increase in smooth endoplasmic reticulum
 - D. It results in an increase in rough endoplasmic reticulum
 - E. X
37. Which of the following is correct regarding ethanol metabolism
- A. The MEOS pathway is the main pathway
 - B. The alcohol dehydrogenase pathway is inducible
 - C. It obeys first order kinetics
 - D. Most alcohol dehydrogenase is found in the stomach
 - E. X
38. Which of the following is correct regarding fluoxetine
- A. Serotonin syndrome is characterised by muscle weakness, hyperpyrexia and confusion
 - B. It can be removed by haemodialysis
 - C. It can cause malignant hyperpyrexia
 - D. It is an enzyme inhibitor
 - E. It is safe in overdose due to minimal drug interactions
39. Dobutamine
- A. Results in conversion of ATP to AMP
 - B. Can decrease systemic vascular resistance (afterload)
 - C. X
 - D. X
 - E. X
40. Clearance
- A. Is proportional to liver blood flow
 - B. X
 - C. X
 - D. X
 - E. X
41. Regarding pharmacokinetics and pharmacodynamics
- A. Diffusion is inversely proportional to surface area and directly proportional to thickness
 - B. The LD_{50} is 50% of the dose that kills most people
 - C. The LD_{50} is 50% of the dose at which toxicity occurs
 - D. Efficacy is the maximum response produced by a drug
 - E. X
42. Regarding bioavailability
- A. Drugs given PR have no first pass metabolism
 - B. Transdermal drugs have no first pass metabolism
 - C. IV drugs undergo first pass metabolism
 - D. It is inversely proportional to extraction ratio
 - E. X
43. Which of the following is INCORRECT regarding nitrates
- A. They increase collateral coronary blood flow
 - B. They demonstrate tachyphylaxis/tolerance
 - C. They demonstrate physical dependence
 - D. They selectively dilate atherosclerotic vessels
 - E. They decrease preload but do not affect afterload
44. Which of the following is correct regarding propranolol
- A. It is a highly selective α_1 antagonist
 - B. It is poorly lipid soluble
 - C. It has sodium channel blocking activity
 - D. It has partial agonist activity
 - E. It has a high oral bioavailability

45. A 42 year old male with typical ischaemic chest pain is seen in the ED. Further investigation leads to a diagnosis of 'vasospasm'. Which drug is most likely to have caused this
- A. Adrenaline
 - B. X
 - C. X
 - D. X
 - E. X
46. A young man presents with dilated pupils, confusion and hyperpyrexia. Which of the following is LEAST likely to account for these effects
- A. Atropine
 - B. Datura
 - C. Morphine
 - D. X
 - E. X
47. Which of the following is correct regarding pralidoxime
- A. It inhibits presynaptic acetylcholine release
 - B. It cleaves organophosphate from acetylcholinesterase
 - C. It cleaves acetylcholinesterase enzyme
 - D. It regenerates acetylcholine
 - E. X
48. Which of the following is INCORRECT regarding vecuronium
- A. It has minimal cardiovascular effects
 - B. It is predominantly renally excreted
 - C. It has significantly longer duration of action than pancuronium
 - D. X
 - E. X
49. Insulin does NOT cause
- A. Decreased glycogenolysis in the liver
 - B. Increased glycogen synthesis in the liver
 - C. Increased lipolysis in the liver
 - D. X
 - E. X
50. Penicillins reach high concentrations in
- A. Vitreous humor
 - B. CSF with normal meninges
 - C. Proximal tubular fluid in the kidneys
 - D. Sputum
 - E. Breast milk
51. Regarding ergot alkaloids, which of the following is incorrect
- A. they may cause vasodilation, leading to flushing and increased skin temperature of "St Anthony's Fire"
 - B. They may cause diarrhoea
 - C. they act at alpha adrenoceptors
 - D. they act at dopamine receptors
 - E. they act at serotonin receptors
52. Which of the following raises the pH of urine the most
- A. Acetazolamide
 - B. Frusemide
 - C. Chlorothiazide
 - D. Mannitol
 - E. Spironolactone
53. The metabolism of paracetamol to its toxic metabolite is via which reaction
- A. Glucuronidation
 - B. Sulphation
 - C. Hydroxylation
 - D. Oxidation
 - E. Reduction

54. Histamine when injected locally would be expected to produce all of the following EXCEPT

- A. An increase in contractility of GI smooth muscle
- B. A decrease in systemic vascular resistance
- C. A decrease in myocardial contractility
- D. X
- E. X

55. Propofol

- A. Accumulates
- B. Can produce abnormal muscle movements
- C. Has minimal effects on the CVS
- D. X
- E. X

1. E		2. A		3. C		4. A		5. D	
6. B		7. A		8. D		9. D		10.	?A
11.	B	12.	B	13.	E	14.	D	15.	E
16.	C	17.	D	18.	B	19.	C	20.	E
21.	C	22.	D	23.	D	24.	A	25.	C
26.	D	27.	A	28.	C	29.	B	30.	A
31.	E	32.	B	33.	C	34.	E	35.	A
36.	C	37.	B	38.	D	39.	?B	40.	?A
41.	D	42.	B	43.	B	44.	C	45.	?A
46.	C	47.	B	48.	C	49.	C	50.	C
51.	A	52.	A	53.	C	54.	C	55.	B

Pharmacology

Sep 2000

1. Regarding paracetamol toxicity
 - A. Toxicity is related to glutathione consumption
 - B. Toxicity is enhanced with cimetidine
 - C. Sulphonation generates the toxic metabolite
 - D. The toxic metabolite is generated via phase II reaction
 - E. Toxicity is related to depletion of sulphates

2. Paracetamol
 - A. Is only given orally
 - B. Is highly protein bound
 - C. Does not cause hyperuricaemia
 - D. Has weak anti-inflammatory properties
 - E. X

3. Dextropropoxyphene
 - A. When combined with paracetamol is a strong anti-inflammatory
 - B. Overdose causes death from hepatotoxicity
 - C. Is chemically related to methadone
 - D. Is a potent analgesic opioid
 - E. X

4. Calculate the half life of a drug with a clearance of 8.4 L/hour and Vd 5L/kg in a 70kg man
 - A. 24 hours
 - B. 12 hours
 - C. 30 hours
 - D. 56 hours
 - E. >60 hours

5. Which of the following is INCORRECT regarding the treatment of Parkinson's disease
 - A. L-dopa is contraindicated in acute psychosis
 - B. Bromocriptine has less side effects than L-dopa
 - C. Administration of L-dopa with a dopa decarboxylase inhibitor decreases side effects
 - D. Dopamine cannot cross the blood-brain-barrier
 - E. Bromocriptine causes more hypotension than L-dopa

6. Which of the following is correct regarding barbiturates
 - A. They increase the duration of opening of GABA-mediated chloride channels
 - B. They do not affect warfarin metabolism
 - C. Acidifying the urine is useful in phenobarbitone overdose
 - D. They increase the frequency of opening of GABA-mediated chloride channels
 - E. X

7. Which of the following is correct regarding ethyl-alcohol
 - A. It is excreted unchanged via the lungs
 - B. It causes CNS excitation followed by CNS depression
 - C. X
 - D. X
 - E. X

8. Which of the following is correct regarding Acyclovir
 - A. The dose is 10-20mg 5 times daily
 - B. It does not work on viruses with a thymidine kinase
 - C. It does not work on CMV
 - D. It is a guanosine analogue
 - E. X

9. Which of the following is correct regarding metronidazole
- it has been shown to be teratogenic in humans
 - it causes a disulfiram-like reaction
 - it inhibits alcohol dehydrogenase
 - a single dose is recommended for treatment of Giardiasis
 - it does not cause a metallic taste in the mouth
10. Which of the following inhibits bacterial cell wall synthesis
- Cephalosporins
 - Tetracycline
 - Ciprofloxacin
 - Metronidazole
 - Erythromycin
11. Tetracycline
- May cause photosensitivity
 - Does not cause discoloration of tooth enamel
 - X
 - X
 - X
12. Gentamicin
- Is water soluble but unstable in solution
 - Is an antibiotic which is oxygen-dependent
 - may be given orally
 - has a wide therapeutic index
 - is not nephrotoxic
13. Which of the following antibiotics is resistant to beta-lactamase
- Piperacillin
 - Cloxacillin
 - Amoxicillin
 - Penicillin
 - Ampicillin
14. Which of the following is NOT an action of glucagon
- Smooth muscle relaxation
 - Positive inotrope
 - Positive chronotrope
 - Gluconeogenesis stimulation
 - Mobilisation of skeletal muscle glycogen
15. Adenosine
- Opens K^+ channels
 - Opens Cl^- channels
 - Has a half life of 10 minutes
 - Profoundly blocks the SA node
 - Blocks calcium-dependent action potentials
16. Which of the following is INCORRECT regarding theophylline
- It causes direct bronchodilation
 - Seizures may occur without any preceding neurological warning signs
 - Overdose of slow release tablets will give a peak serum level in 6 hours
 - Metabolism is induced by smoking
 - Strengthens contraction of the diaphragm in patients with COAD
17. Allopurinol
- Is metabolised by xanthine oxidase
 - Has no side effects
 - Is useful in the treatment of acute gout
 - Has low oral bioavailability
 - x

18. Which of the following is correct regarding ipratropium bromide
- A. The onset of peak action is 10 minutes post inhalation
 - B. Tolerance is common
 - C. It has marked CNS effects
 - D. It may precipitate closed angle glaucoma
 - E. It has 100% oral bioavailability
19. Which of the following is INCORRECT regarding trimethoprim
- A. It is synergistic with sulphonamides
 - B. It disrupts folate synthesis
 - C. It is less toxic to humans than to bacteria
 - D. It is bacteriocidal
 - E. It is bacteriostatic
20. Which of the following is INCORRECT regarding aminoglycosides
- A. Resistance is plasmid-mediated
 - B. Resistance does not cross species
 - C. They require an oxygen dependent mechanism to be taken up into the cell
 - D. They synergise with penicillins
 - E. They decrease neuromuscular blockade
21. Which of the following is INCORRECT
- A. Disinfectants clean non-living fields
 - B. Antiseptics clean living fields
 - C. Antiseptics in low dose can promote bacterial growth
 - D. Alcohol kills all bacteria and spores
 - E. X
22. Digitalis
- A. Is a positive inotrope
 - B. Is a negative inotrope
 - C. Decreases ventricular excitation
 - D. Causes a decrease in intracellular sodium
 - E. Causes hypokalaemia in overdose
23. Which of the following is correct regarding Cisapride
- A. It has 80% oral bioavailability
 - B. It is a potent anti-dopamine agent
 - C. The dose needs to be reduced in renal failure
 - D. It decreases colonic motility
 - E. Has a half life of 6-8 hours
24. Which of the following is most potent
- A. Cortisol
 - B. Cortisone
 - C. Aldosterone
 - D. Corticosterone
 - E. Deoxycortisone
25. Which of the following does not cause constipation
- A. Verapamil
 - B. Digoxin
 - C. Warfarin
 - D. Chlorpromazine
 - E. Codeine

26. Which of the following is correct regarding verapamil
- A. It increases myocardial contractility
 - B. It is a positive inotrope
 - C. It causes skeletal muscle weakness
 - D. It blocks active and inactive calcium channels
 - E. x
27. Which of the following is correct regarding warfarin
- A. It is broken down in the GIT
 - B. It is routinely added to transfused blood
 - C. It decreases thromboplastins
 - D. C
 - E. C
28. Which of the following has a pure agonist effect in the circulation
- A. Adrenaline
 - B. Noradrenaline
 - C. Isoprenaline
 - D. Metoprolol
 - E. Prazosin
29. Carbamazepine
- A. Has active metabolites
 - B. In overdose causes seizures
 - C. Is an enzyme inhibitor
 - D. Enhances sodium channel conductance
 - E. Is not a tricyclic
30. Which of the following does NOT interact with warfarin
- A. Phenobarbitone
 - B. Loop diuretics
 - C. Benzodiazepines
 - D. Cephalosporins
 - E. Barbiturates
31. Regarding antidepressants
- A. Fluoxetine is more sedating than the tricyclic antidepressants
 - B. SSRIs are more effective in OCD
 - C. their effects include elevation of seizure threshold
 - D. sodium bicarbonate worsens arrhythmias in TCA overdose
 - E. all cause marked sedation
32. Hydralazine
- A. Classically has a biphasic response in BP control
 - B. Should not be used in eclampsia
 - C. Causes significant hypotension
 - D. Is predominantly a vasodilator
 - E. Causes an abrupt but transient fall in blood pressure
33. Which if the following is INCORRECT regarding diazoxide
- A. Can be used in hypertensive emergency
 - B. Is structurally related to thiazide
 - C. Has a low level of protein binding
 - D. May cause sodium and water retention
 - E. can cause significant hypotension

34. ACE inhibitors
- A. Can safely be used in the second and third trimesters of pregnancy
 - B. Have been associated with angioedema
 - C. Can cause significant reflex tachycardia
 - D. Can cause hypokalaemia
 - E. Are lipid soluble and reach the CNS
35. Which of the following is correct regarding fibrinolytics
- A. Urokinase is cheap but less selective
 - B. Streptokinase comes from human cells
 - C. TIMI trial states GI haemorrhage is the most common haemorrhagic complication
 - D. GIT haemorrhage within the previous 12 months is a contraindication
 - E. Actrilic acid is a potent fibrinolytic inhibitor
36. Termination of irreversible (non-depolarising) neuromuscular blockade involves
- A. Regeneration of receptors
 - B. An increase in end plate acetylcholine
 - C. X
 - D. X
 - E. X
37. Which of the following is correct regarding GTN
- A. It exerts its action after being converted to nitric oxide
 - B. It causes met-haemoglobinaemia
 - C. It acts on atherosclerotic vessels to dilate them
 - D. Demonstrates physiologic dependence
 - E. Increases collateral coronary blood flow
38. Which of the following has a different mode of action
- A. Insulin
 - B. Glucagon
 - C. ACTH
 - D. PTH
 - E. All of the above
39. Choose the odd one out
- A. Muscarine
 - B. Acetylcholine
 - C. Hyoscine
 - D. Bethanechol
 - E. X
40. Half life
- A. May not be a good indicator of clearance
 - B. Does not increase with age
 - C. Is not dependent on the volume of distribution
 - D. X
 - E. X
41. Stemetil
- A. Can be useful in tardive dyskinesia
 - B. Can cause neuroleptic malignant syndrome
 - C. Has antiemetic effect via 5-HT antagonist activity
 - D. X
 - E. X
42. Alpha-methyl-dopa
- A. Can cause a positive Coombs' test
 - B. Is a potent vasoconstrictor
 - C. Can be given IV or oral
 - D. Can precipitate an SLE-like syndrome
 - E. Can cause agitation

43. How much drug is contained in 2mL of 0.5% w/v solution
A. 1mg
B. 5mg
C. 10mg
D. 20mg
E. 100mg

44. Which of the following is an example of a phase II biotransformation
A. Oxidation
B. Reduction
C. Glucuronidation
D. Dehydration
E. Hydrolysis

45. Which of the following is an example of a class IV antiarrhythmic
A. Propranolol
B. Phenytoin
C. Sotalol
D. Verapamil
E. Lignocaine

- | | | | | |
|-------|-------|-------|--------|--------|
| 1. A | 2. C | 3. C | 4. C | 5. E |
| 6. A | 7. A | 8. D | 9. B | 10. A |
| 11. A | 12. B | 13. B | 14. E | 15. A |
| 16. C | 17. A | 18. D | 19. D | 20. E |
| 21. D | 22. A | 23. A | 24. ?A | 25. C |
| 26. D | 27. ? | 28. C | 29. A | 30. C |
| 31. B | 32. D | 33. C | 34. B | 35. ?C |
| 36. B | 37. A | 38. A | 39. C | 40. A |
| 41. B | 42. A | 43. C | 44. C | 45. D |

Pharmacology

Aug 01

1. Regarding opiates
 - a. X
 - b. Methadone and dextropropoxyphene are phenylpiperidines
 - c. They cause diuresis
 - d. They cause urinary retention
 - e. X

2. Which of the following anaesthetic agents stimulates the cardiovascular system
 - a. Thiopentone
 - b. Halothane
 - c. Ketamine
 - d. Midazolam
 - e. Propofol

3. Side effects of tricyclic antidepressants include all of the following EXCEPT
 - a. Sedation
 - b. Tremor
 - c. Urinary retention
 - d. Psychosis
 - e. Hypertension

4. Side effects of phenothiazines include
 - a. Urinary retention
 - b. Seizures
 - c. Corneal, lens and retinal deposits
 - d. Seizures
 - e. Extrapyrmidal effects

5. Which of the following is correct regarding acyclovir
 - a) is commonly given in doses of 10-20 mg TDS
 - b) is used to treat CMV
 - c) is a guanosine analogue
 - d) acts to inhibit viral entry into cells
 - e) is only available intravenously

6. Which of the following is correct regarding the antivirals
 - a. Valacyclovir is converted rapidly to acyclovir when taken orally
 - b. Valacyclovir is only available intravenously
 - c. Acyclovir blocks transcription of viral DNA to RNA
 - d. X
 - e. X

7. Which of the following is NOT true for Norfloxacin
 - a. It is poorly absorbed from the GIT
 - b. It is effective in salmonella enteritis
 - c. It inhibits DNA synthesis in susceptible microbes
 - d. It can increase serum theophylline levels if administered concurrently
 - e. It is mainly excreted by the kidney

8. The site of action of erythromycin is
 - a. On the 50S subunit of the ribosome
 - b. On the 30S subunit of the ribosome
 - c. On the 20S subunit of the ribosome
 - d. DNA gyrase
 - e. DNA topoisomerase

9. Which of the following is correct regarding erythromycin
- When given IV is in the stearate form
 - It is excreted in the urine
 - Is bacteriostatic only
 - Is active against campylobacter
 - Is a cell wall inhibitor
10. Regarding Ketoconazole
- It interacts with terfenadine
 - It inhibits bacterial cell wall synthesis
 - X
 - X
 - X
11. Which of the following is not an antiemetic
- THC
 - Omeprazole
 - Haloperidol
 - Metoclopramide
 - Domperidone
12. Which of the following does not cause constipation
- Digoxin
 - Verapamil
 - Imipramine
 - Codeine
 - Chlorpromazine
13. Which is correct regarding the action of verapamil
- It is a positive inotrope
 - It shortens the action potential
 - It blocks both activated and inactivated calcium channels
 - It blocks cardiac sodium channels
 - It causes skeletal muscle weakness
14. All of the following are bronchodilators EXCEPT
- Sodium cromoglycate
 - Ipratropium bromide
 - Salbutamol
 - Adrenaline
 - Salmeterol
15. Cisapride
- It has 80% oral bioavailability
 - It is a potent anti-dopamine agent
 - The dose needs to be reduced in renal failure
 - It decreases colonic motility
 - Has a half life of 6-8 hours
16. Promethazine is a weak base with a pKa of 9.1. Which of the following is correct
- Urinary secretion will increase if bicarbonate is co-administered
 - Urinary secretion will increase if ammonium chloride is co-administered
 - It will be more ionised at blood pH than at gastric pH
 - X
 - X
17. Efficacy is
- The concentration of drug that produces 50% of maximal effect
 - The maximum response that can be produced by a drug
 - Limited by side effects
 - Independent of route of administration
 - X

18. Which of the following is correct regarding therapeutic index
- It is low in drugs that have a large margin of safety
 - It is the ratio of ED_{50} to TD_{50}
 - It is the ratio of TD_{50} to ED_{50}
 - X
 - X
19. Which of the following is correct regarding beta adrenergic agonists
- They may decrease arterial oxygen tension after administration
 - They cause hypoglycaemia
 - They stimulate glycogenolysis in the liver and skeletal muscle
 - They decrease cholesterol levels
 - X
20. Atropine causes
- Bronchoconstriction
 - A decrease in gastric acid secretion
 - An initial bradycardia followed by tachycardia
 - An increase in jejunal peristalsis
 - A decrease in intraocular pressure
21. Which of the following is correct regarding ipratropium
- It has 100% GIT absorption
 - It has a long duration of action to allow 4 hourly nebuliser administration
 - The onset of peak action is 10 minutes post inhalation
 - Tolerance is common
 - It has marked CNS effects
22. Which of the following does NOT induce hepatic p450 enzymes
- Rifampicin
 - Cimetidine
 - Carbamazepine
 - Phenytoin
 - X
23. Which of the following is INCORRECT regarding cimetidine
- It inhibits H1 receptors
 - It causes confusion in the elderly
 - It inhibits hepatic enzymes
 - X
 - X
24. Cocaine causes all of the following effects EXCEPT
- Local anaesthesia
 - Reduced catecholamine uptake
 - X
 - X
 - X
25. Side effects of prazosin include
- Reflex tachycardia
 - First dose hypotension
 - Reflex bradycardia
 - Unfavourable effect on lipids
 - Hypertension
26. Pralidoxime exerts its effects by
- Regeneration of acetylcholine
 - Inhibiting presynaptic acetylcholine release
 - Cleavage of acetylcholinesterase from organophosphate molecules
 - X
 - X

27. Which of the following is correct regarding SSRI antidepressants
- They are metabolised into inactive metabolites
 - They are the drugs of choice for obsessive-compulsive disorder
 - Fluoxetine induces liver enzymes
 - Diazepam and SSRIs used together can result in serotonergic syndrome
 - They are associated with minimal drug interactions
28. Opiates and receptor action
- X
 - X
 - X
 - X
 - X
29. Which of the following β -blockers is correctly paired with the receptor on which it acts
- Propranolol β_2 receptor only
 - Carvedilol β_1 and β_2 receptors
 - X
 - X
 - X
30. What is the pKa of aspirin
- 9.5
 - 6.5
 - 3.5
 - 2.5
 - 1.5
31. Which of the following is correct regarding thrombolytics and their actions
- Aspirin irreversibly inhibits cyclooxygenase
 - X
 - X
 - X
 - X
32. Propranolol
- Is a selective β_2 blocker
 - Has low lipid solubility
 - Has partial agonist activity
 - Has local anaesthetic activity
 - X
33. Sodium cromoglycate
- Is only given by inhalation
 - Is not useful prophylactically
 - Causes acute bronchodilation
 - Is well absorbed when taken orally
 - X
34. Which of the following is correct regarding the action of amphetamines
- There is increased catecholamine release
 - X
 - X
 - X
 - X
35. Hydralazine
- Rarely causes postural hypotension
 - Is a direct vasodilator
 - Has a short-lived effect
 - Displays a biphasic blood pressure response
 - Should not be used in eclampsia

36. Digoxin
- Is a negative inotrope
 - Increases ventricular excitation
 - Causes a decrease in intracellular sodium
 - Causes hypokalaemia in overdose
 - X
37. Digoxin
- Levels are increased by some antibiotics
 - X
 - X
 - X
 - X
38. Which of the following is correct regarding lithium
- It can cause type II diabetes
 - It is excreted almost entirely in the urine
 - It requires no treatment in overdose
 - Dose does not need adjusting in renal impairment
 - Has high first pass metabolism
39. Anticonvulsants and mechanism of action
- X
 - X
 - X
 - X
 - X
40. Which of the following penicillins is beta-lactamase resistant
- Amoxicillin
 - Piperacillin
 - Benzylpenicillin
 - Cloxacillin
 - X
41. Which of the following is correct regarding cephalosporins
- 2nd generation cephalosporins have less gram positive cover than 1st generation
 - There is no cross reactivity with penicillins
 - Cefoxitin is a 3rd generation drug
 - X
 - X
42. Which of the following is correct regarding local anaesthetics
- They may cause blockade of motor nerves before sensory nerves in large mixed nerves
 - They preferentially block larger fibres
 - They preferentially block unmyelinated fibres
 - They have no cardiac effects
 - They will block A-alpha fibres before A-delta and C fibres
43. The mechanism of action of a beta-lactam is
- To inhibit transpeptidation in peptidoglycan synthesis in the bacterial cell wall
 - X
 - X
 - X
 - X
44. How much drug is in 2mL of 0.5% w/v solution
- 1mg
 - 10mg
 - 100mg
 - 1000mg
 - 1kg

45. Which of the following is INCORRECT regarding heparin
- It acts on factor VII
 - It acts on prothrombin
 - It decreases the formation of fibrin
 - It inhibits antithrombin III
 - X
46. Heparin
- Is measured as active units via bioassay
 - X
 - X
 - X
 - X
47. Which of the following is correct regarding frusemide
- It is ototoxic
 - It is used in the treatment of glaucoma
 - X
 - X
 - X
48. Which of the following drugs alkalinises the urine
- Acetazolamide
 - Frusemide
 - Chlorothiazide
 - Mannitol
 - Spironolactone
49. Which of the following is correct regarding lithium
- Its toxicity may be increased by some antibiotics
 - It needs regular monitoring as it can cause diabetes mellitus
 - It has a wide therapeutic index
 - Co-administration of diuretics can result in toxicity in stable patients
 - Pregnancy can cause changes in metabolism and excretion
50. Which of the following is a side effect of phenytoin
- It causes agranulocytosis in 5% of treated patients
 - It affects vitamin D metabolism
 - X
 - X
 - X
51. Beta blockers
- Applied topically may cause systemic effects
 - X
 - X
 - X
 - X
52. Mechanism of action of adenosine
- Blocks K^+ channels
 - Opens Cl^- channels
 - Has a half life of about 10 minutes
 - Profoundly blocks the SA node
 - Suppresses calcium-dependent action potentials
53. Which of the following antibiotics acts on cell membranes
- Ketoconazole
 - Ceftriaxone
 - Erythromycin
 - Metronidazole
 - Ciprofloxacin

54. In paracetamol overdose, toxic metabolites are generated from
- Glucuronidation
 - Sulphation
 - N-hydroxylation
 - Oxidation
 - Reduction
55. Sumatriptan
- Is contraindicated in angina
 - Is a partial α_1 agonist
 - X
 - X
 - X
56. Side effects of methyldopa include which of the following
- Positive Coombs test
 - Agitation
 - Pancreatitis
 - X
 - X
57. In the treatment of gout, which of the following is correct
- The use of paracetamol does not affect uric acid concentration
 - X
 - X
 - X
 - X
58. Paracetamol and protein binding
- X
 - X
 - X
 - X
 - X
59. Which of the following drugs has a half life of 6 hours
- Digoxin
 - Aspirin
 - Atenolol
 - Adenosine
 - Amiodarone
60. Which of the following drugs interacts with warfarin
- Ceftriaxone
 - Diazepam
 - Indomethacin
 - Paracetamol
 - Ethanol
61. Half life is used to calculate
- X
 - X
 - X
 - X
 - X
62. A patient has been given a drug which has caused hypertension and pupillary dilation. Which of the following was he given?
- Atropine
 - Adrenaline
 - Ganglion blocker
 - X
 - X

63. Which of the following is considered an effective technique for sterilisation
- a. Fibreoptics treated in an autoclave at 120 degrees for 2 minutes
 - b. Bleach diluted 1 in 10 for 10 minutes for blood
 - c. A single wipe of chlorhexidine over skin for 2 minutes for neurosurgery
 - d. Chlorhexidine to treat spores
 - e. Iodine used somehow to treat spores

- | | | | | |
|-------|-------|-------|-------|--------|
| 3. D | 4. C | 5. E | 6. A | 7. C |
| 8. A | 9. A | 10. A | 11. D | 12. A |
| 13. B | 14. A | 15. C | 16. A | 17. ?E |
| 18. B | 19. B | 20. C | 21. A | 22. C |
| 23. B | 24. B | 25. A | 26. ? | 27. B |
| 28. C | 29. B | 30. | 31. B | 32. |
| 33. A | 34. D | 35. A | 36. | 37. B |
| 38. B | 39. A | 40. B | 41. | 42. D |
| 43. A | 44. A | 45. A | 46. B | 47. D |
| 48. A | 49. A | 50. A | 51. D | 52. B |
| 53. A | 54. | 55. A | 56. C | 57. A |
| 58. A | 59. A | 60. | 61. | 62. A |
| 63. | 64. | 65. E | 66. | 67. |

Pharmacology

April 2006

1. Which of the following is correct regarding prazosin
 - a. It causes reflex tachycardia
 - b. It causes first dose hypotension
 - c. It causes reflex bradycardia
 - d. It has an unfavourable effect on lipids
 - e. It acts to reduce preload and afterload

2. A young man presents to ED following an overdose with dilated pupils, tachycardia and a fever. Which of the following is LEAST likely
 - a. Aspirin
 - b. Atropine
 - c. Datura
 - d. Chlordiazepoxide
 - e. Amitriptyline

3. Which of the following is correct regarding bisphosphonates
 - a. 10% of the dose is excreted unchanged
 - b. They increase osteoblast activity
 - c. They have low oral bioavailability
 - d. 90% distributed in the bones
 - e. X

4. A young man is treated with a normal dose of a drug and develops tachycardia, hypotension and mydriasis. Which of the following is MOST likely
 - a. Dobutamine
 - b. Atropine
 - c. Adrenaline
 - d. X
 - e. X

5. Which of the following does NOT induce immunity
 - a. Pertussis
 - b. Rabies
 - c. Redback venom
 - d. Tuberculosis
 - e. Hepatitis A

6. Which of the following is a live vaccine
 - a. Hepatitis A virus
 - b. Varicella-Zoster virus
 - c. Rabies
 - d. Measles
 - e. Diphtheria

7. Which of the following is correct regarding antiemetics
 - a. Ondansetron is a dopamine antagonist
 - b. Metoclopramide increases lower oesophageal sphincter tone
 - c. Erythromycin is a prokinetic agent
 - d. Marijuana acts on central chemoceptors
 - e. X

8. Which of the following is correct regarding adenosine
 - a. It has a half life of 5 minutes
 - b. It works on calcium dependent action potentials
 - c. It increases potassium influx to decrease AV conductivity
 - d. It decreases SA node firing
 - e. It is the drug of choice for ventricular tachycardias

9. Paracetamol toxicity is caused by
- Phase II reactions
 - Depletion of sulphates
 - Depletion of glutathione
 - Conjugation with glutathione
 - Co-administration with cimetidine
10. Which of the following is correct regarding bioavailability
- Is inversely proportional to extraction ratio
 - Transdermal route undergoes first pass metabolism
 - Rectal route does not undergo first pass metabolism
 - It is 100% for inhaled drugs
 - Intravenous route undergoes first pass metabolism
11. Adverse effects of penicillin include
- Seizures
 - 50% of people who claim allergy will actually have a reaction on further exposure
 - Hyponatraemia
 - X
 - X
12. Which of the following is correct regarding beta blockers
- They cannot be topically absorbed
 - They can cause glaucoma
 - Glucagon can be used as an antidote
 - X
 - X
13. Which of the following is correct regarding antibiotic resistance
- Erythromycin resistance is caused by changes in the 50S ribosomal subunit receptor site
 - Bacteria resistant to sulphonamides still need PABA
 - X
 - X
 - X
14. What is the mechanism of cytochrome P450 induction
- Rough endoplasmic reticulum hypertrophy
 - Smooth endoplasmic reticulum hypertrophy
 - Increase in acetylation
 - X
 - X
15. Which congenital defect – match is correct
- Ethanol and Ebsteins anomaly
 - Thalidomide and neural tube defects
 - ACE inhibitors and nephrotoxicity
 - X
 - X
16. A patient presents to the ED post ictal and is found to have a sub-therapeutic level of phenytoin. Which of the following would be LEAST likely to cause this
- Hypoalbuminaemia
 - Poor patient compliance
 - Carbamazepine co-administration
 - Isoniazid co-administration
 - Phenobarbital co-administration
17. Which of the following is correct regarding allopurinol
- It is used for acute gout
 - It is metabolised by xanthine oxidase
 - It has low oral bioavailability
 - It has very few side effects
 - X

18. Which of the following is correct regarding aspirin
- It is an irreversible cyclooxygenase inhibitor
 - Decreases plasma volume
 - Does not cross the placenta
 - Its action on platelet aggregation is reversible
 - Excretion is enhanced by acidifying the urine
19. Which of the following is a weak base
- Warfarin
 - Penicillamine
 - Aspirin
 - Amphetamine
 - Ibuprofen
20. Which of the following is correct regarding ibuprofen
- It has less GI effects than aspirin
 - It is excreted unchanged in the urine
 - It is a COX-II selective inhibitor
 - X
 - X
21. Which of the following is correct regarding eicosanoids
- They are the only arachidonic acid derivatives
 - They are vasodilators
 - They include prostaglandins, leukotrienes and thromboxane A₂
 - X
 - X
22. Which of the following is correct regarding nitrates
- They act on afterload
 - They act on atherosclerotic vessels to dilate them
 - They decrease both preload and afterload
 - They demonstrate physiologic dependence
 - They increase collateral coronary blood flow
23. Which of the following is correct regarding calcium channel blockers
- They selectively act on L-type calcium channels
 - Diltiazem is the prototype of the dihydropyridines
 - X
 - X
 - X
24. ACE inhibitors
- Are used in diabetes
 - Can cause hypokalaemia
 - Are lipid soluble and reach the CNS
 - Can safely be used in the second and third trimesters of pregnancy
 - Have been associated with angioedema
25. Loop diuretics
- Cause alkalosis
 - Cause hypermagnesaemia
 - Cause ototoxicity by increasing lithium toxicity
 - X
 - X
26. Metronidazole
- Is used for treatment of trichomonas infection
 - Has been shown to be teratogenic in humans
 - Inhibits alcohol dehydrogenase
 - Is not effective in treatment of giardiasis
 - Is only available in an intravenous preparation

27. Which of the following techniques is an appropriate form of sterilisation
- Fibreoptics treated in an autoclave at 120 degrees for 2 minutes
 - Bleach diluted 1 in 10 for 10 minutes for blood
 - A single wipe of chlorhexidine over skin for 2 minutes for neurosurgery
 - Chlorhexidine to treat spores
 - Iodine used somehow to treat spores
28. Which of the following is correct regarding ethylene glycol (antifreeze solution)
- Renal dysfunction increases its toxicity
 - Toxicity is due to formation of formic acid
 - Toxicity is due to formation of oxalic acid
 - X
 - X
29. Which of the following is correct regarding benzodiazepines
- Oxazepam is metabolised into diazepam
 - Diazepam is metabolised into oxazepam
 - Flumazenil is an irreversible antagonist
 - Diazepam does not engender psychological dependence
 - X
30. Which of the following is correct regarding SSRIs
- They are metabolised into inactive metabolites
 - They are the drugs of choice for Obsessive-Compulsive disorder
 - Fluoxetine induces liver enzymes
 - Diazepam and SSRIs used together can result in serotonergic syndrome
 - They are associated with minimal drug interactions
31. Choose the correct matching stems
- Cisapride causes a prolonged QT interval
 - X
 - X
 - X
 - X
32. Which of the following is correct regarding cimetidine
- It inhibits H1 receptors
 - It causes confusion in the elderly
 - It inhibits hepatic enzymes
 - X
 - X
33. The safest antibiotic for use in renal failure is
- Doxycycline
 - Tetracycline
 - Erythromycin
 - Penicillin
 - X
34. Which of the following is correct regarding antivirals
- Valacyclovir is metabolised to acyclovir
 - Valacyclovir can be given intravenously
 - Acyclovir blocks transcription of viral DNA to RNA
 - Nomovir acts on HIV-1
 - X
35. Which of the following is correct regarding prochlorperazine
- It works mainly at the level of the GIT
 - Is structurally similar to (tricyclic) antidepressants
 - It can cause neuroleptic malignant syndrome
 - X
 - X

36. Which of the following is correct regarding tricyclic antidepressants
- The phenothiazines are structurally similar to tricyclics
 - They are completely absorbed and have high oral bioavailability
 - Their volumes of distribution tend to be very low
 - They act via inhibition of degradation of noradrenaline and serotonin
 - x
37. Which of the following is correct regarding opiates
- They cause a mild diuresis
 - They can precipitate urinary retention
 - They reduce bladder smooth muscle tone
 - Ganglion blockers will improve urinary flow
 - X
38. Which of the following has anti-thrombolytic effects
- Aspirin
 - Plasminogen
 - Aminocaproic acid
 - Heparin
 - Warfarin
39. Lignocaine acts
- Rapidly on hyperpolarised nerves
 - Preferentially on rapidly firing nerves
 - Preferentially on thicker nerves
 - Lastly on motor nerves
 - x
40. Which of the following is correct regarding methyl-dopa
- It causes a positive Coombs' test
 - It can be given IV or oral
 - It can precipitate an SLE-like syndrome
 - It can cause agitation
 - It is a potent vasoconstrictor
41. Which of the following is INCORRECT regarding theophylline
- It can cause hyperkalaemia
 - It can cause seizures without any other preceding neurological symptoms
 - It interacts with adenosine
 - It is a receptor antagonist
 - Metabolism is induced by smoking
42. Which of the following is correct regarding omeprazole
- It is category X in pregnancy
 - It acts on GIT epithelium
 - It is not indicated in Zollinger-Ellison syndrome
 - X
 - X
43. Volume of distribution
- Is inversely proportional to clearance
 - Is affected by pKa
 - Is generally larger than predicted for patients with ascites
 - Is directly proportional to the drug concentration in plasma
 - Is high in drugs contained in plasma
44. Which of the following is correct regarding aspirin
- In moderate doses it can cause an increased respiratory rate
 - In toxic levels it results in metabolic alkalosis
 - Excretion is enhanced by acidifying the urine
 - It is a reversible cyclooxygenase inhibitor
 - It does not cross the placenta

45. Which of the following is correct regarding ketamine
- It is a cardiac stimulant
 - It reduces laryngeal reflexes
 - It is given as an inhaled anaesthetic with nitrous oxide
 - X
 - X
46. Which of the following is correct regarding muscle relaxants
- Aminoglycosides decrease their efficacy
 - Vecuronium is a steroid derivative
 - Gallamine is excreted in the bile after hepatic metabolism
 - Atracurium causes hypotension in volume depleted patients
 - Pancuronium causes histamine release
47. Which of the following is correct regarding lithium
- It needs regular monitoring as it can cause diabetes mellitus
 - It has a wide therapeutic index
 - Co-administration of diuretics can result in toxicity in stable patients
 - Pregnancy can cause changes in metabolism and excretion
 - It requires no treatment in overdose

- | | | | | |
|--------|--------|-------|---------|-------|
| 1. B | 2. D | 3. C | 4. B | 5. C |
| 6. B&D | 7. B&C | 8. C | 9. C | 10. A |
| 11. A | 12. C | 13. A | 14. B | 15. C |
| 16. D | 17. B | 18. A | 19. D | 20. A |
| 21. C | 22. C | 23. A | 24. A&E | 25. A |
| 26. A | 27. ?E | 28. C | 29. B | 30. B |
| 31. A | 32. C | 33. A | 34. A | 35. C |
| 36. A | 37. B | 38. C | 39. B | 40. A |
| 41. A | 42. B | 43. C | 44. A | 45. A |
| 46. B | 47. C | | | |

Pharmacology – No Answers

Mar 07

1. Phenytoin
 - a. may cause abnormalities in vitamin D metabolism
 - b. X
 - c. X
 - d. X
 - e. X

2. Calculate the half life of digoxin if $Cl = 8.4L/min$, $V_d 5L/kg$, 70kg man
 - a. X
 - b. X
 - c. X
 - d. X
 - e. X

3. Muscarinic & Adrenergic receptors
 - a. X
 - b. X
 - c. various effects
 - d. X
 - e. X

4. Aspirin
 - a. can cause hyperventilation
 - b. has a pKa of 6.3
 - c. X
 - d. X
 - e. X

5. Elderly people have a decreased metabolism of
 - a. propranolol
 - b. lignocaine
 - c. X
 - d. X
 - e. X

6. All the following cause constipation except
 - a. verapamil
 - b. imipramine
 - c. codeine
 - d. digoxin
 - e. X

7. Frusemide
 - a. lasts six hours
 - b. can cause ototoxicity
 - c. X
 - d. X

8. Site of action of diuretics
 - a. thiazides - proximal part of the distal convoluted tubule
 - b. X
 - c. X
 - d. X

9. Amiodarone
 - a. prolongs the QT interval
 - b. X
 - c. X
 - d. X

10. Ipratropium

- a. onset of action in 10 minutes
- b. X
- c. X
- d. X
- e. contraindicated in glaucoma

11. Atracurium

- a. is broken down by Hoffman elimination
- b. X
- c. X
- d. X
- e. X

12. Ketamine

- a. is a cardiovascular stimulant
- b. X
- c. X
- d. X
- e. X

13. Complimentary medicine question on

- a. St John's Wort
- b. Echinacea
- c. Garlic
- d. X
- e. X

14. Elderly patients

- a. have decreased total body water
- b. X
- c. X
- d. X
- e. X

15. Adenosine

- a. suppresses calcium-dependent action potentials
- b. X
- c. X
- d. X
- e. X

16. Allopurinol

- a. metabolised by xanthine oxidase
- b. X
- c. X
- d. X
- e. X

17. Acute gout

- a. X
- b. X
- c. X
- d. X
- e. X

18. Steroids

- a. mineralocorticoid effects of commonly used steroids
- b. X
- c. X
- d. X
- e. X

19. Sulphonamides

- a. are analogues of PABA
- b. X
- c. X
- d. X
- e. X

20. Valacyclovir

- a. converted to acyclovir when given orally
- b. X
- c. X
- d. X
- e. X

21. Metronidazole

- a. is an effective treatment for trichomonas
- b. inhibits alcohol dehydrogenase
- c. X
- d. X
- e. X

22. Metformin

- a. does not require functioning pancreatic beta cells to perform its actions
- b. is a sulphonylurea
- c. X
- d. X
- e. X

23. Ondansetron

- a. blocks 5HT₃ receptors
- b. blocks dopamine receptors
- c. X
- d. X
- e. X

24. Metoclopramide

- a. increases antral motility
- b. X
- c. X
- d. X
- e. X

25. With regard to receptors

- a. desensitisation is rapidly reversible, leading to full response on re-exposure
- b. receptor downregulation is a rapid process (minutes)
- c. all receptors are associated with the cell membrane
- d. X
- e. X

26. Bioavailability

- a. is 100% for drugs given rectally
- b. is equal to 1-extraction ratio
- c. X
- d. X
- e. X

27. 2ml of 0.5% w/v is equivalent to

- a. 0.01mg
- b. 0.1mg
- c. 1mg
- d. 10mg
- e. 100mg

28. Which of the following drugs is safe to give in pregnancy

- a. heparin
- b. ramipril
- c. sodium valproate
- d. warfarin
- e. phenytoin

29. Heparin

- a. may cause alopecia
- b. X
- c. X
- d. X
- e. X

30. Penicillin G

- a. achieves high concentration in renal tubules
- b. is well absorbed orally
- c. X
- d. X
- e. X

31. Gentamicin

- a. enters bacteria via an oxygen dependent process
- b. may be given orally
- c. X
- d. X
- e. X

32. Lithium

- a. antagonises antidiuretic hormone
- b. X
- c. X
- d. X
- e. X

33. Marijuana

- a. causes conjunctival erythema and tachycardia
- b. X
- c. X
- d. X
- e. X

34. N-acetyl cystine

- a. is a source of glutathione
- b. X
- c. X
- d. X
- e. X

35. Methylxanthines

- a. may decrease the seizure threshold
- b. adenosine receptor antagonists
- c. X
- d. X
- e. X

36. Salbutamol

- a. may cause an initial fall in pO₂
- b. X
- c. X
- d. X
- e. X

37. The opiate associated with seizures when given in high dose to patients with renal failure is

- a. Pethidine (meperidine)
- b. oxycodone
- c. morphine
- d. methadone
- e. X

38. A young man presents with typical chest pain, later diagnosed as vasospasm. This is most likely mediated via

- a. alpha receptors
- b. X
- c. X
- d. X
- e. X

1	16	31
2	17	32
3	18	33
4	19	34
5	20	35
6	21	36
7	22	37
8	23	38
9	24	39
10	25	40
11	26	
12	27	
13	28	
14	29	
15	30	

Pharmacology – No Answers

Sep 07

- 1) Calculate the $t_{1/2}$ of a drug with a renal clearance of 8.4L/h, V_d of 5L/Kg in a 70Kg male
 - a. 29hours
- 2) Which of the following is not a type 1 biotransformation reaction
 - a. glucuronidation
- 3) $t_{1/2}$ of naloxone
 - a. 60-90 minutes
- 4) 5mL of 2% of w/v solution contains
 - a. 10mg
- 5) Heparin
 - a. causes alopecia
- 6) Which of the following does NOT alter INR when taking warfarin
 - a. benzodiazepines
- 7) Ticlopidine
 - a. Inhibits ADP induced platelet aggregation
- 8) Metronidazole is effective against
 - a. vaginal trachomoniasis
- 9) Which of the following does not inhibit cell wall synthesis
 - a. erythromycin
- 10) Valacyclovir
 - a. Is converted to acyclovir in the peripheral circulation
- 11) Gentamicin
 - a. enters the cell by via O₂ dependent process
 - b. X
 - c. X
 - d. X
 - e. X
- 12) which of the following does not cause constipation
 - a. digoxin
- 13) A patient arrives to the ED with dilated pupils and hypertension, tachycardia, which is the least likely toxin
 - a. aspirin
- 14) ACE inhibitors
 - a. can cause angio-oedema
 - b. are useful in diabetes
- 15) Hydralazine is
 - a. predominately a vasodilator
- 16) Fluoxetine is
 - a. a liver enzyme inhibitor
- 17) SSRI's are the preferred treatment of
 - a. OCD

- 18) a high degree of tolerance occurs to all effects of morphine except
- miosis
- 19) which of the following is a live virus vaccine
- measles
- 20) local anaesthetics
- preferentially block faster firing nerves
- 21) which of the following is a liver enzyme inducer
- barbiturate
- 22) salbutamol
- does not cause hyperkalaemia
- 23) barbiturates prolong the opening of chloride channels
- 24) methaemaglobinaemia is caused by Prilocaine
- 25) phase 3 drug trials
- involve a large amount of people to reduce bias
- 26) Metoclopramide
- increases lower oesophageal sphincter tension
- 27) Adenosine
- suppresses Calcium-dependent action potential
- 28) Regarding enzyme induction
- results in increased smooth ER amount
- 29) which of the following antibiotics is resistant to β -lactamase
- cloxacillin
- 30) what is the pKa of aspirin
- 3.5
- 31) In paracetamol overdose
- patient is symptomatic immediately after ingestion
 - acetylcysteine binds the toxic metabolite
 - can cause interstitial nephritis
- 32) regarding muscle relaxants
- mivacurium is longest acting
 - blockade caused by suxamethonium can be fully reversed with neostigmine
 - negative inotropic effects of suxamethonium can be attenuated by atropine
- 33) All activate G-protein coupled receptors except
- marijuana
 - GHB
 - LSD
 - Amphetamines
 - Heroin

34) General anaesthetic that also causes bronchodilation is ketamine

35) Marijuana

- a. half-life one hour
- b. perceptual changes are dose-dependent

36) metformin

- a. action depends on functioning beta cells
- b. frequently causes hypoglycaemia
- c. reduces hepatic gluconeogenesis

37) dexamethasone

- a. is 30 times more potent than prednisolone
- b. has significant mineralocorticoid activity
- c. is available only as oral preparation