1997 PRACTICE PHARMACOLOGY MCQ’s
(Compiled from Melbourne University Pharmacology department tutorials)

PART C

For the following questions, answer:

A. True, True and the reason is a correct explanation
B. True, True and the reason is NOT a correct explanation
C. True, False
D. False, True
E. False, False

1. Drugs having a high affinity for plasma protein binding sites are readily filtered across the glomerular membranes
   
   **BECUSE**
   Drugs having a high affinity for plasma protein binding sites may be secreted by an active transport mechanism into the renal tubes

2. Antimuscarinic drugs are never combined with neuroleptic drugs in patients being treated for schizophrenia
   
   **BECUSE**
   Antimuscarinic drugs worsen the extrapyramidal symptoms caused by neuroleptic drugs

3. Salbutamol when administered by aerosol at recommended doses is likely to cause tachycardia
   
   **BECUSE**
   Salbutamol stimulates $\beta_2$ adrenoceptors in the heart

4. Homatropine is not used as a mydriatic drug
   
   **BECUSE**
   Homatropine has a much shorter duration of action as a mydriatic drug than atropine

5. The urinary excretion of aspirin is increased if it is taken with sodium bicarbonate
   
   **BECUSE**
   Aspirin is more soluble in alkaline than in neutral solutions

6. Capsaicin decreases sensitivity to painful stimuli
   
   **BECUSE**
   Capsaicin causes an initial release of substance P from primary afferent neurones

7. Isosorbide dinitrate should not be taken orally (swallowed) for treatment of angina
   
   **BECUSE**
   Isosorbide dinitrate is completely inactivated by first pass metabolism

8. Cardiac glycosides are not used to treat atrial arrhythmias
   
   **BECUSE**
   Cardiac glycosides can cause ventricular arrhythmias

9. Some red wines produce a hypertensive crisis in patients treated with some monoamine oxidase inhibitors
   
   **BECUSE**
   Some red wines contain considerable amounts of tyramine

10. Thiopentone has a brief duration of action
    
    **BECUSE**
    Thiopentone is rapidly metabolised in the liver
For the following questions, answer:

A. True, True and the reason is a correct explanation
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11. Histamine H1 receptor antagonists block the effects of histamine on bronchial smooth muscle  
BECAUSE  
H1 receptor antagonists block the release of histamine from basophils in the alveolar circulation

12. Norfloxacin (a fluroquinolone) is effective against urinary tract infections  
BECAUSE  
Norfloxacin is metabolised in the liver to an active metabolite

13. Phenobarbitone could be used in treating neonatal jaundice  
BECAUSE  
Phenobarbitone induces microsomal enzyme activity in the liver

14. Prostacyclin is an unstable metabolite of arachidonic acid  
BECAUSE  
Prostacyclin is rapidly inactivated during its passage through the lungs

15. Histamine can cause headache  
BECAUSE  
Histamine causes constriction of cerebral blood vessels

16. Procaine has a relatively short duration of local anaesthetic action  
BECAUSE  
Procaine is rapidly excreted by the kidney

17. Salbutamol raises blood pressure  
BECAUSE  
Salbutamol is a β2 adrenoceptor agonist

18. Cimetidine inhibits gastric acid secretion evoked by histamine  
BECAUSE  
Cimetidine is a partial agonist on histamine H2 receptors

19. Phenobarbitone increases the plasma levels of digoxin  
BECAUSE  
Phenobarbitone decreases metabolism of digoxin

20. Tetracyclines should not be used in young children  
BECAUSE  
Tetracyclines permanently discolour teeth if given during enamel development

21. Histamine may be used to test the integrity of cutaneous sensory nerves  
BECAUSE  
Histamine stimulates peripheral nerve endings causing itch and flare of the triple response

22. Atropine is used for the treatment of poisoning with organophosphorus anticholinesterases  
BECAUSE  
Atropine antagonises the action of acetylcholine at the somatic neuromuscular junction
For the following questions, answer:

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23. Atropine may decrease skeletal muscle blood flow
   **BECAUSE**
   Atropine blocks muscarinic receptors in blood vessels in skeletal muscle which are innervated by parasympathetic nerve fibres

24. Phenobarbitone sodium is useful as an induction anaesthetic
   **BECAUSE**
   Phenobarbitone sodium is rapidly metabolised in the liver

25. Ondansetron commonly produces extrapyramidal side effects
   **BECAUSE**
   Like metoclopramide, ondansetron block 5HT3 receptors and dopamine receptors with high affinity in the area postrema chemoreceptor trigger zone

26. Propranolol is useful for treating cardiac arrhythmias
   **BECAUSE**
   Propranolol has a membrane stabilising action

27. Phenothiazines such as chlorpromazine are useful for treating drug induced parkinsonian symptoms
   **BECAUSE**
   Phenothiazines such as chlorpromazine antagonise the effects of dopamine in the basal ganglia

28. Probenecid increases the plasma half life of penicillin
   **BECAUSE**
   Probenecid competes with penicillin for active secretion into renal tubular fluid

29. Beclomethasone dipropionate aerosol is an effective anti inflammatory agent
   **BECAUSE**
   Beclomethasone inhibits transcription of inflammatory cytokine genes by MLCK activity

30. Chlorpromazine causes greater sedation than trifluoperazine in therapeutic doses
    **BECAUSE**
    Chlorpromazine is a more potent antipsychotic agent than trifluoperazine

31. The concentration of an inhalational anaesthetic supplied to the patient is lower during maintenance of anaesthesia than during induction
    **BECAUSE**
    The distribution of inhalational anaesthetics within the body approaches equilibrium during maintenance of anaesthesia

32. Phenytoin may alter the effectiveness of oral contraceptives
    **BECAUSE**
    Phenytoin induces cytochrome p450 enzymes

33. Glibenclamide is used in the treatment of insulin dependent diabetes (Type I diabetes)
    **BECAUSE**
    Glibenclamide stimulates glucose uptake by muscle and increases glycolysis
For the following questions, answer:

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34. Phenobarbitone increases the depressant effect of alcohol
   BECAUSE
   Phenobarbitone inhibits alcohol dehydrogenase

35. Cocaine is never used topically as a local anaesthetic
   BECAUSE
   Cocaine has effects on the central nervous system which may induce dependence

36. Penicillins should (generally) not be used clinically in conjunction with tetracyclines
   BECAUSE
   Penicillins activity is negated by tetracyclines which inhibit the growth of fast dividing cells

37. Digoxin is beneficial in the treatment of congestive heart failure
   BECAUSE
   Digoxin increases renal blood flow

38. Mianserin may produce significant benefit in depressive illness
   BECAUSE
   Mianserin is a potent inhibitor of neuronal reuptake of noradrenaline

39. Minimum alveolar concentration of a general anaesthetic drug is an index of potency
   BECAUSE
   Minimum alveolar concentration is the concentration at which the drug begins to diffuse into the blood

40. The anticholinergic drug hyoscine N butyl bromide may produce a drug mouth as a side effect
    BECAUSE
    The anticholinergic drug hyoscine N butyl bromide readily crosses the blood brain barrier

41. Clavulanic acid is used in combination with amoxycillin
    BECAUSE
    Clavulanic acid blocks the excretion of amoxycillin by the kidney

42. Thiazide diuretics are useful in treating hypertension
    BECAUSE
    Thiazide diuretics increase glomerular filtration rate and reduce renin secretion

43. Antimuscarinic drugs may be used as premedication for surgical anaesthesia
    BECAUSE
    Antimuscarinic drugs reduce bronchial secretions

44. Verapamil is thought to relieve exertional angina primarily by causing dilation of the coronary arteries
    BECAUSE
    Angina ischaemic pain results from inadequate perfusion of cardiac muscle for a given work load

45. Tranycypromine increases brain levels of catecholamines and serotonin
    BECAUSE
    Tranycypromine is a monoamine oxidase inhibitor
For the following questions, answer:

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46. Histamine may be the final common mediator of gastric acid secretion

   BECAUSE
   Histamine H2 antagonists can block gastric acid secretion induced by vagal stimulation and pentagastrin

47. Sodium cromoglycate is effective in treating an established attack of allergen induced asthma

   BECAUSE
   Sodium cromoglycate stabilises mast cells so that the tendency for release of mediators is reduced

48. Captopril causes a fall in blood pressure

   BECAUSE
   Captopril prevents conversion of angiotensin I to angiotensin II

49. Sulphonamides should be given with an agent which acidifies the urine

   BECAUSE
   Sulphonamides are more soluble in acid solutions and kidney damage is thereby prevented

50. Prazosin lowers blood pressure

   BECAUSE
   Prazosin acts directly on vascular smooth muscle to cause vasodilation

51. Benzodiazepines which are long acting should not be taken often in large doses by the elderly

   BECAUSE
   Benzodiazepines may produce tolerance and dependence

52. Neostigmine is commonly used to reverse neuromuscular blockade with suxamethonium

   BECAUSE
   Neostigmine is a competitive antagonist of the nicotinic receptors at the neuromuscular junction

53. Glycosides increase the force of contraction of heart muscle

   BECAUSE
   Glycosides slow conduction between atria and ventricles

54. Cyproheptadine is useful in the treatment of carcinoid syndrome

   BECAUSE
   Cyproheptadine blocks H1 and 5HT receptors

55. Aspirin is proposed for use in the prophylaxis of thromboembolic disorders

   BECAUSE
   Aspirin in low doses selectively inhibits thromboxane A2 formation in platelets

56. Organic nitrate compounds with anti anginal activity decrease the work done by the heart

   BECAUSE
   Organic nitrates with anti anginal activity dilate blood vessels, lower peripheral resistance and increase venous capacitance
For the following questions, answer:

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57. Chlorpromazine is more likely than haloperidol to cause sedation in patients treated for schizophrenia
   BECAUSE
   Chlorpromazine is a more potent dopamine receptor antagonist than haloperidol

58. Prostaglandin F\textsubscript{2α} cannot be used to cause evacuation of the uterine contents during the second trimester of pregnancy
   BECAUSE
   Prostaglandin F\textsubscript{2α} will produce expulsive contractions in the uterus only at full term

59. Cardiac glycosides decrease tachycardia in cardiac failure
   BECAUSE
   Cardiac glycosides have β antagonist activity

60. Prazosin lowers blood pressure
    BECAUSE
    Prazosin acts directly on vascular smooth muscle rather than a receptor to cause dilation

61. Ranitidine is used in the treatment of motion sickness
    BECAUSE
    Ranitidine blocks histamine H1 receptors and muscarinic receptors

62. Potassium supplements should be given routinely to all patients taking any diuretic
    BECAUSE
    An increased sodium load presented to the distal tubule tends to cause increased secretion of potassium

63. Nitrous oxide has a rapid onset of action when used in general anaesthesia
    BECAUSE
    Nitrous oxide is relatively insoluble in blood

64. Methotrexate impairs DNA synthesis and thereby reduces cell proliferation
    BECAUSE
    Methotrexate inhibits the enzyme dihydrofolate reductase

65. Glyceril trinitrate can exacerbate an attack of angina
    BECAUSE
    The fall in blood pressure may be sufficiently large to reduce coronary blood flow

66. Thiazide diuretics treatment may cause patients to become more sensitive to the toxic action of cardiac glycosides
    BECAUSE
    Thiazide diuretics induce potassium depletion

67. Pilocarpine eye drops will cause vasodilation of the conjunctival blood vessels
    BECAUSE
    Pilocarpine blocks the parasympathetic innervation to the conjunctival blood vessels
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