

ENTRANCE EXAMINATION FOR ADMISSION, MAY 2013.

Ph.D. (BIOCHEMICAL PHARMACOLOGY)

COURSE CODE : 162

Register Number :

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*Signature of the Invigilator  
(with date)*

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COURSE CODE : 162

Time : 2 Hours

Max : 400 Marks

*Instructions to Candidates :*

1. Write your Register Number within the box provided on the top of this page and fill in the page 1 of the answer sheet using pen.
2. Do not write your name anywhere in this booklet or answer sheet. Violation of this entails disqualification.
3. Read each of the question carefully and shade the relevant answer (A) or (B) or (C) or (D) in the relevant box of the ANSWER SHEET using HB pencil.
4. Avoid blind guessing. A wrong answer will fetch you -1 mark and the correct answer will fetch 4 marks.
5. Do not write anything in the question paper. Use the white sheets attached at the end for rough works.
6. Do not open the question paper until the start signal is given.
7. Do not attempt to answer after stop signal is given. Any such attempt will disqualify your candidature.
8. On stop signal, keep the question paper and the answer sheet on your table and wait for the invigilator to collect them.
9. Use of Calculators, Tables, etc. are prohibited.

1. Pralidoxime acts by:
  - (A) Reactivating cholinesterase enzyme
  - (B) Promoting synthesis of cholinesterase
  - (C) Promoting synthesis of acetylcholine
  - (D) Direct action on cholinergic receptors
  
2. Albendazole may be used for treatment of all of the following conditions except:
 

|                 |                     |
|-----------------|---------------------|
| (A) Entrobilus  | (B) Ascariasis      |
| (C) Ankylostoma | (D) Schistosomiasis |
  
3. Cindamycine acts by inhibiting:
 

|                         |                      |
|-------------------------|----------------------|
| (A) Protein synthesis   | (B) DNA Gyrase       |
| (C) Cell wall synthesis | (D) Lysosomal enzyme |
  
4. Following drugs may be used pseudomonas infection except:
 

|                |                  |
|----------------|------------------|
| (A) Pefloxacin | (B) Azithromycin |
| (C) Imipenam   | (D) Ceflazidime  |
  
5. Low doses of aspirin used in myocardial infarction act by
 

|                                       |                                   |
|---------------------------------------|-----------------------------------|
| (A) Inhibiting thromboxane synthetase | (B) Inhibit cyclooxygenase        |
| (C) Releasing EDRF                    | (D) High protein binding activity |
  
6. Tetrahydrocannabinol is the active component of:
 

|               |            |
|---------------|------------|
| (A) Marijuana | (B) LSD    |
| (C) Hashish   | (D) Heroin |
  
7. All of the following may be seen with Neuroleptic malignant syndrome except:
 

|                     |                           |
|---------------------|---------------------------|
| (A) Hypothermia     | (B) Altered consciousness |
| (C) Muscle rigidity | (D) Involuntary movements |
  
8. The most common side effect associated with chronic use of phenothiazines is:
 

|                        |                       |
|------------------------|-----------------------|
| (A) Akathisia          | (B) Parkinsonism      |
| (C) Tardive dyskinesia | (D) Muscular dystonia |

9. Flumazenil is a:
- (A) Benzodiazepine antagonist (B) Benzodiazepine agonist  
(C) Adrenergic blocking agent (D) Oplate antagonist
10. Which of the following has least glucocorticoid activity?
- (A) Fludrocortisone (B) Dexamethasone  
(C) Triamcinolone (D) Betamethasone
11. Low molecular weight heparin therapy is associated with all except
- (A) Less chance of bleeding  
(B) Single dose per day  
(C) Easy filterability by glomerular capillaries  
(D) High biological interaction to plasma proteins
12. Which of the following drug acts as a HMG-CoA reductase inhibitor?
- (A) Gemfibrozil (B) Clofibrate  
(C) Lovastatin (D) Probucol
13. Most commonly postural hypotension is seen with:
- (A) Prazosin (B) Nifedipine  
(C) Atenolol (D) ACE inhibitors
14. Which of the following statements regarding adenosine is not true?
- (A) Used in PSVT  
(B) Administered as rapid I.V. injection  
(C) Has short lived side effects  
(D) Disopyramidase increases its therapeutic effect
15. All of the following are side effects of Amiodarone except:
- (A) Pulmonary fibrosis (B) Corneal microdeposits  
(C) Thyroid dysfunction (D) Osteoporosis

16. Which of the following antiarrhythmics drugs causes prolonged repolarization of ventricles & ERP?
- (A) Amiodarone (B) Propranolol  
(C) Verapamil (D) Quinidine
17. In treatment of cardiac failure, dobutamine acts by all of the following mechanisms except:
- (A)  $\alpha$  receptors agonism (B)  $\beta$  adrenergic receptors agonism  
(C) Dopamine receptor agonism (D) Increasing force of contraction
18. Agent used as a diagnostic test for myastheniagravis is:
- (A) Phentolamine (B) Edrophonium  
(C) Echothiophate (D) Glucagon
19. All are classified as reversible anticholinesterases except
- (A) Ambenonium (B) Physostigmine  
(C) Pyridostigmine (D) Echothiophate
20. Hyperglycemia may be caused by all except:
- (A) Nemulside (B) Chlorthiazides  
(C) Corticosteroids (D) Theophylline
21. Gynocostamia may be caused by all except:
- (A) Cimetidine (B) Ranitidine  
(C) Ketoconazole (D) Spironolactone
22. On higher doses zero order kinetics is seen:
- (A) Phenytoin (B) Propranolol  
(C) Lithium (D) Probenacid
23. All of the following are true about competitive inhibitor except
- (A) Resembles chemically with the agonist  
(B) Bind the same receptors  
(C) Reduces potency  
(D) Maximum level is not reached by increasing the concentration of the drug

24. SLE like syndrome is most commonly associated with administration of:
- (A) Rifampicin (B) Procainamide  
(C) Digitalis (D) Phenytoin
25. Pulmonary infiltration may be seen with all of the following drugs except:
- (A) 5 FU (B) Bleomycin  
(C) Busulphan (D) Cyclophosphamide
26. Pancreatitis is a known side effect with administration of
- (A) L-Asparaginase (B) Corticosteroid  
(C) Cyclophosphamide (D) Vincristine
27. Milk-Alkali syndrome may be caused by ingestion of
- (A) Calcium-carbonate (B) Magnesium sulphate  
(C) Aluminium trisilicate (D) Aluminium hydroxide
28. Side-effects of the cis-platinum include all of the following except:
- (A) Nausea and vomiting (B) Nephrotoxicity  
(C) Blindness (D) Ototoxicity
29. Cyclosporin acts by inhibiting the proliferation of:
- (A) IL1 (B) IL2  
(C) IL6 (D) Macrophages
30. All of the statements are true about FLUORO QUINOLONES, except:
- (A) Suspected of having teratogenic potential  
(B) Arthropathy of limb-in children may occur  
(C) Increase theophylline toxicity  
(D) Increase neuromuscular blocking action
31. Which of the following drugs acts on 'motilin' receptors:
- (A) Erythromycin (B) Tetracycline  
(C) Norfloxacin (D) Chloramphenicol

32. Mechanism of action of erythromycin is interference with:
- (A) Transcription (B) Translation  
(C) Translocation (D) Singnal transduction
33. All of the following are drugs for ATT except:
- (A) Kanamycin (B) Cycloserine  
(C) 5-flucytosine (D) Ofloxacin
34. All of the following are examples of bactericidal drugs except:
- (A) INH (B) Rifampicin  
(C) Ethambutol (D) Pyrazinamide
35. Dipyridamole acts by:
- (A) Adenosine uptake inhibition (B) Inhibiting thromboxane A2  
(C) Stimulating PGI2 synthesis (D) Inhibiting PGI2 synthesis
36. Enoximone:
- (A) Is effective only when given intravenously  
(B) Is the inotrope of choice in renal failure  
(C) Is a pulmonary artery vasodilator  
(D) Must be administered in 5 per cent dextrose
37. Enoximone:
- (A) Raises arterial pressure at the expense of splanchnic and renal vasoconstriction  
(B) May induce hypotension  
(C) Is a direct cardiac beta-adrenoceptor stimulant  
(D) May lead to bronchoconstriction
38. Verapamil:
- (A) And theophylline show a significant interation  
(B) Interacts with digoxin by increasing its renal tubular secretion  
(C) And cyclosporine show no significant interaction  
(D) All of the above

39. Verapamil:
- (A) Induces less cardiovascular depression during anaesthesia with enflurane than with isoflurane
  - (B) Is of no value in obtunding the haemodynamic response to tracheal intubation in anaesthetized patients
  - (C) Reduces the MAC of halothane
  - (D) All of the above
40. Nifedipine:
- (A) May precipitate congestive heart failure
  - (B) As opposed to nitrates suffers from the is advantage of a shorter duration of action
  - (C) (a) & (b)
  - (D) None of the above
41. Use of calcium channel blockers may be associated with:
- (A) Diarrhoea
  - (B) Peripheral oedema
  - (C) Bronchospasm
  - (D) All of the above
42. Diltiazem:
- (A) Is a more potent vasodilator than verapamil
  - (B) Has a greater negative chronotropic effect than nifedipine
  - (C) Is free from effects on the atrioventricular node
  - (D) Has a greater negative inotropic effect than verapamil
43. Verapamil:
- (A) Is useful in the treatment of the arrhythmias of digoxin toxicity
  - (B) Is the agent of choice in controlling the tachycardia associated with the sick sinus syndrome
  - (C) May be usefully combined with prazosin
  - (D) And disopyramide are an ideal combination for the treatment of cardiac arrhythmias

44. Calcium chloride:
- (A) Provides protection against ischaemic brain damage
  - (B) Increases the duration of the effective refractory period
  - (C) Shortens ventricular systole
  - (D) Improves survival in cardiac asystole
45. Verapamil:
- (A) Is often associated with rebound hypertension on withdrawal after acute intravenous use
  - (B) Exerts its effects on heart rate in man via action at the sinoatrial node
  - (C) Has no effect on platelet aggregation
  - (D) Is antiatherosclerotic
46. The following drugs are useful for rapid conversion of acute atrial fibrillation to sinus rhythm:
- (A) Digoxin
  - (B) Flecainide
  - (C) Sotalol
  - (D) None of the above
47. Torsades de Pointes:
- (A) May be treated with amiodarone
  - (B) May be treated with disopyramide
  - (C) May be treated with isoprenaline
  - (D) None of the above
48. Quinidine:
- (A) Has no action on atrial arrhythmias
  - (B) Should be co-prescribed with amiodarone in resistant arrhythmias
  - (C) Prolongs the QT interval
  - (D) Has vagolytic properties
49. Phenytoin:
- (A) Is a Vaughan Williams Class I antiarrhythmic
  - (B) May be used in the treatment of digitalis-induced arrhythmias
  - (C) Does not alter the duration of the action potential of atrial tissue
  - (D) All of the above



50. Propafenone:
- (A) Is predominantly a Vaughan Williams Class I antiarrhythmic
  - (B) Is of no use in the treatment of ventricular ectopic beats
  - (C) Has negative inotropic effects
  - (D) Is relatively free from extracardiac side-effects
51. Bretylium:
- (A) Is an adrenergic neurone blocker
  - (B) Is best given orally
  - (C) Has the major side-effect of hypotension
  - (D) Increases the efficacy of pressor amines
52. Amiodarone:
- (A) Is the only agent to possess Vaughan Williams class III activity
  - (B) Has minimal negative inotropic effects
  - (C) Has a volume of distribution greater than 3000 litres in an average adult
  - (D) Therapy is associated with resistance and increased requirements of warfarin
53. Flecainide:
- (A) Has a wider antiarrhythmic spectrum than lignocaine
  - (B) Must be administered parenterally to produce its therapeutic effect
  - (C) Administration itself can give rise to serious ventricular arrhythmias
  - (D) Exerts no effects on the duration of the QRS complex
54. Lignocaine:
- (A) Blocks fast sodium current activity
  - (B) Prolongs the duration of the action potential
  - (C) Functions best if hypokalaemia is avoided
  - (D) Has a greater negative inotropic effect than disopyramide

55. The Vaughan Williams classification for antiarrhythmic agents:
- (A) Is based on His-bundle recording in patients
  - (B) Has amiodarone as a Class V drug
  - (C) Has metoprolol as a Class IV drug
  - (D) Has lignocaine as a Class I drug
56. Sotalol:
- (A) Is useful in the treatment of QT interval prolongation
  - (B) Is useful in hypertension with symptomatic arrhythmias
  - (C) Possesses Class I and Class IV effects according to Vaughan Williams Classification
  - (D) None of the above
57. Cardioselectivity in beta-adrenoceptor blocking agents:
- (A) Is well maintained only at relatively low doses
  - (B) Makes these drugs more effective anti-anginal agents than non-selective drugs
  - (C) Limits their usefulness in the treatment of migraine
  - (D) Is of special value in the patient with glaucoma
58. Treatment with beta-adrenoceptor blocking drugs
- (A) Decreases the hypermetabolic state of thyrotoxicosis
  - (B) Has no influence on the vascularity of a hyperactive thyroid gland
  - (C) With intrinsic sympathomimetic activity is useful during a thyroid storm
  - (D) Paradoxically raises free thyroxine levels
59. In myocardial ischaemia, beta-adrenoceptor blockade:
- (A) Decreases the risk of ventricular fibrillation
  - (B) Decreases the size of the infarct due to coronary occlusion
  - (C) If withdrawn, leads abruptly to an increased risk of infarction
  - (D) All of the above

60. Beta-adrenoceptor blocking agents:
- (A) Benefit the ischaemic myocardium if the preload rises substantially in the course of the therapy
  - (B) Benefit the myocardium in all types of angina
  - (C) Are of value in Raynaud's disease
  - (D) Are of value in migraine
61. Dopamine:
- (A) Induced renal vasodilatation is antagonized by propranolol
  - (B) Depletes presynaptic stores of noradrenaline
  - (C) Is as potent a beta<sub>2</sub>receptor agonist as dopexamine
  - (D) None of the above
62. Isoprenaline:
- (A) Like methoxamine results in reflex bradycardia
  - (B) Unlike adrenaline has no effect on histamine release
  - (C) Unlike sotalol is useful in the treatment of Torsades de Pointes
  - (D) Unlike adrenaline results in hypoglycaemia
63. Metaraminol:
- (A) Has both alpha-and beta-adrenoceptor agonist effects
  - (B) Has a sedative effect
  - (C) Is useful in treatment of anorexia
  - (D) Is the safest vasopressor to use in the presence of monoamine oxidase inhibitors
64. Phenylephrine:
- (A) Is predominantly a direct beta-adrenoceptor agonist
  - (B) Causes miosis while ephedrine causes mydriasis
  - (C) Increases the cardiac output
  - (D) Decreases the renal blood flow while increasing the arterial pressure

65. Methoxamine:
- (A) Is not metabolized by monoamine oxidase
  - (B) Increases cardiac output by a direct action
  - (C) Is more likely to show tachyphylaxis than ephedrine
  - (D) All of the above
66. Digoxin is contraindicated in:
- (A) Heart failure in acute myocardial infarction
  - (B) In children with high output states due to left to right shunts
  - (C) The treatment of congestive heart failure in the presence of atrial fibrillation
  - (D) All of the above
67. Xamoterol:
- (A) Is a new synthetic cardiac glycoside
  - (B) Is indicated in the treatment of severe congestive heart failure
  - (C) Has no vasodilating effect
  - (D) Does not usually cause an increase in heart rate
68. Milrinone:
- (A) Is a  $\text{Na}^+/\text{K}^+$  ATPase inhibitor
  - (B) Is an inotrope whose use is limited by vasoconstriction
  - (C) Use may be complicated by thrombocytopenia
  - (D) Shows no inotropic effect in a fully digitalized patient
69. Digoxin toxicity is likely in the presence of:
- (A) Hyperkalaemia
  - (B) Hypomagnesaemia
  - (C) Hyperthyroidism
  - (D) None of the above
70. Digoxin toxicity is commonly manifested as:
- (A) Muscular hyperexcitability
  - (B) Psychosis
  - (C) Premature ventricular ectopic beats
  - (D) All of the above

71. Digoxin
- (A) Shortens the PR interval
  - (B) Flattens the ST segment
  - (C) Causes peaking of the T wave
  - (D) Increases the resting membrane potential
72. Dopexamine:
- (A) Is a less potent beta<sub>1</sub>-adrenergic receptor agonist than dopamine
  - (B) Is primarily active at D<sub>2</sub> receptors
  - (C) Is a more potent renal vasodilator than dopamine
  - (D) Unlike dopamine, does not induce nausea
73. Dobutamine:
- (A) Is a less potent inotropic agent than isoprenaline
  - (B) Causes a reduction in pulmonary capillary wedge pressure
  - (C) Is active at D<sub>1</sub> and not D<sub>2</sub> receptors
  - (D) All of the above
74. Dopexamine:
- (A) Is a selective phosphodiesterase inhibitor
  - (B) Produces splanchnic and renal vasoconstriction
  - (C) May be given orally
  - (D) None of the above
75. Noradrenaline:
- (A) Is a pure alpha-adrenoceptor agonist
  - (B) Has potent bronchodilator activity
  - (C) Increases skeletal muscle blood flow
  - (D) Elevates pulmonary capillary wedge pressure

76. Postural hypotension is common with
- (A) Prazosin (B) Labetalol  
(C) Sodium Nitroprusside (D) Captopril
77. All of the following are calcium channel blockers except
- (A) Nimodipine (B) Verapamil  
(C) Flunarizine (D) Pirenzepine
78. Sterility is caused by
- (A) Vinca alkaloids (B) Alkylating agents  
(C) Antimetabolites (D) Actinomycin D
79. All the following are examples of cardiotoxic drugs except
- (A) Cyclophosphamide (B) 5-FU  
(C) Adriamycin (D) Cisplatin
80. ADH acts on
- (A) Proximal convoluted tubule (B) Distal convoluted tubule  
(C) Loop of Henle (D) Collecting duct
81. All the following drugs are used in Pseudomonas infection except
- (A) Pefloxacin (B) Imipenem  
(C) Aztreonam (D) Vancomycin
82. Which of the following is not a hepatotoxic drug
- (A) Ethambutol (B) Rifampicin  
(C) INH (D) Cycloserine
83. Acetylation is seen in all except
- (A) INH (B) Hydralazine  
(C) Procainamide (D) Phenytoin
84. All are examples of gastro-kinetic drugs except
- (A) Cisapride (B) Domperidone  
(C) Erythromycin (D) Ampicillin

85. Food does not interfere in absorption of
- (A) Cimetidine (B) Ranitidine  
(C) Famotidine (D) None of the above
86. All the following drugs decrease the preload except
- (A) Glycerol tri-nitrate (B) ACE inhibitors  
(C) Hydralazine (D) Sodium nitroprusside
87. Drugs not used in myocardial infarction are
- (A) Inhibitors of platelet aggregation (B) Thrombolytics  
(C) Anticoagulants (D) Inhibitors of Plasminogen activator
88. The most common side effect of chronic use of phenothiazine is
- (A) Akathisia (B) Tardive akinesia  
(C) Tardive dyskinesia (D) Muscular dystonia
89. Buprenorphine is
- (A) Opioid agonist-antagonist (B) Partial agonist  
(C) Pure antagonist (D) Partial antagonist
90. N-acetyl Cysteine is an antidote for poisoning due to
- (A) Paracetamol (B) Dhatura  
(C) Aspirin (D) Propranolol
91. Flumazenil is
- (A) Benzodiazepine antagonist (B) Benzodiazepine agonist  
(C) Adrenergic blocking agent (D) Cholinesterase inhibitor
92. Amongst the following least glucocorticoid activity is seen with
- (A) Fludrocortisone (B) Dexamethasone  
(C) Triamcinolone (D) Betamethasone

93. If theophylline is used with Ciprofloxacin  
(A) Toxicity of Theophylline increases (B) Efficacy decreases  
(C) Activity of Ciprofloxacin increases (D) It decrease absorption of Theophylline
94. Test for myasthenia gravis is  
(A) Succinylcholine (B) Edrophonium  
(C) Atracurium (D) d-Tubocurarine
95. The following are all true about Ipratropium bromide except:  
(A) Used by inhalation (B)  $\uparrow$  IOP  
(C) Dryness of mouth (D) Scratching in trachea
96. Actions of atropine are all except  
(A) Bronchoconstriction (B) Tachycardia  
(C) Mydriasis (D) CNS stimulation
97. All of the following are reversible anticholinesterases except  
(A) Physostigmine (B) Ambenonium  
(C) Pyridostigmine (D) Echothiophate
98. Lithium monitoring is done because of  
(A) Low therapeutic efficacy (B) Very low therapeutic index  
(C) Adverse effects (D) Long half-life
99. Examples of pro-drug are all except  
(A) Levodopa (B) Omeprazole  
(C) Enalapril (D) Indomethacin
100. Zero order kinetics at a higher dose is seen with  
(A) Phenytoin (B) Heparin  
(C) Probenecid (D) Lithium
-