

ENTRANCE EXAMINATION FOR ADMISSION, MAY 2011.

M.Sc. (MEDICAL PHARMACOLOGY)

COURSE CODE : 504

Register Number :

Signature of the Invigilator
(with date)

COURSE CODE : 504

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 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. Reed Frost Model is a mathematical model of
 - (A) Infectious disease transmission and herd immunity
 - (B) Health insurance and community premium
 - (C) Infant mortality rate and life expectancy
 - (D) Consanguinity and congenital abnormalities
2. Allocation concealment is related to
 - (A) Cross sectional surveys
 - (B) Case control studies
 - (C) Prospective studies
 - (D) Randomized controlled trials
3. Berkson's Bias is a form of
 - (A) Selection Bias
 - (B) Observer Bias
 - (C) Classification Bias
 - (D) Recall Bias
4. Data cleaning is usually done
 - (A) At every data entry
 - (B) Before Master Chart preparation
 - (C) After Master Chart preparation
 - (D) If analysis points to outliers
5. One of the following is NOT an effect measure
 - (A) Attributable fractions
 - (B) Risk differences
 - (C) Rate ratios
 - (D) Exposure association
6. The distribution used to describe the occurrence of rare events in a large population is
 - (A) Log normal distribution
 - (B) Skewed distribution
 - (C) Geometric distribution
 - (D) Poisson distribution
7. Control group is used in experiments to reduce the impact of
 - (A) Randomization
 - (B) Methodological flaws
 - (C) Small sample size
 - (D) Extraneous variables
8. Which one is a measure of variation?
 - (A) Median
 - (B) Mode
 - (C) Mean
 - (D) Standard Deviation
9. What does 'P' in "P value" mean?
 - (A) Proportionate
 - (B) Probability
 - (C) Percentile
 - (D) Predetermined

10. Random allocation refers to assigning animals to different
- (A) Groups alternatively
 - (B) Treatments randomly
 - (C) Cages randomly
 - (D) Experiments haphazardly
11. Power of a study is calculated from
- (A) Level of significance
 - (B) Type 2 error
 - (C) Confidence interval
 - (D) Type 1 error
12. Frequency polygon is obtained by joining the mid-points of
- (A) Pie chart
 - (B) Simple bar chart
 - (C) Multiple bar chart
 - (D) Histogram
13. The following statements are TRUE of null hypothesis EXCEPT
- (A) It states that the relationship predicted in the experimental hypothesis does not exist
 - (B) The results obtained are not due to consistent relationship between two variables
 - (C) The experimenter has to support this hypothesis to prove his prediction
 - (D) The null hypothesis is different from experimental hypothesis
14. All of the following conditions should be met before applying "t" test EXCEPT
- (A) The data should follow normal distribution
 - (B) Populations should have equal SO
 - (C) Samples must be chosen randomly
 - (D) The data must be nominal type
15. Incidental sampling technique
- (A) Is the same as random sampling
 - (B) Is difficult to do
 - (C) Easily accessible subjects are not selected
 - (D) Mayor may not be representative of the population
16. Which of the following is NOT a principle of medical ethics?
- (A) Ambiguity
 - (B) Beneficence
 - (C) Non maleficance
 - (D) Justice and equality

17. In a single blind study of a drug
- (A) The examiner does not know the treatment allocation
 - (B) The participant does not know the treatment allocation
 - (C) The principal investigator does not know the treatment allocation
 - (D) The funding agency does not know the treatment allocation
18. Which of the following is TRUE regarding a case-control study?
- (A) A group of study subjects are followed up after recruiting
 - (B) Confounding factors can be controlled and there is no chance for bias
 - (C) Usually retrospective
 - (D) Very expensive and time consuming
19. How many genes constitute the human genome?
- (A) More than 1 million
 - (B) 4 Mb
 - (C) About 30,000
 - (D) 23 pairs
20. A discrete collection of gene fragments on a stamp-sized chip is called
- (A) Reference sequence
 - (B) SNP profile
 - (C) Gene microarray
 - (D) Semiconductor
21. The non-invasive marker for studying the activity of human CYP2C19 is
- (A) S-mephenytoin
 - (B) Carbamazepine
 - (C) Debrisoquin
 - (D) Tolbutamide
22. The minimum number of half-lives required to reach steady state concentration of a drug is
- (A) 2
 - (B) 5
 - (C) 8
 - (D) 10
23. The expected incidence of adverse reaction of a drug is 1 in 1000. The number of patients required to monitor for detecting 2 adverse events of this drug is
- (A) 600
 - (B) 1300
 - (C) 3000
 - (D) 4800
24. The 'red man' syndrome is a side effect of
- (A) Moclobemide
 - (B) Venlafaxine
 - (C) Vancomycin
 - (D) Fosfomycin
25. The tetracycline that has least hepatotoxicity side effect is
- (A) Oxytetracycline
 - (B) Chlortetracycline
 - (C) Doxycycline
 - (D) Minocycline

26. The prodrug that is converted into morphine in the body is
 - (A) Methadone
 - (B) Codeine
 - (C) Fentanyl
 - (D) Dextropropoxyphene
27. Mesalazine (mesalamine) is used in the treatment of
 - (A) Ulcerative colitis
 - (B) Falciparaum malaria
 - (C) Amoebic dysentery
 - (D) Diabetic gastroparesis
28. The first line of therapy for brucellosis is
 - (A) Combination of rifampicin and doxycycline
 - (B) Combination of INH and rifampicin
 - (C) Combination of kanamycin and doxycycline
 - (D) Combination of ethambutol and rifampicin
29. The antifungal drug that inhibits CYP3A4 enzyme activity is
 - (A) Amphotericin
 - (B) Clotrimazole
 - (C) Griseofulvin
 - (D) Ketoconazole
30. Which of the following drugs is an immunostimulant?
 - (A) Levamisole
 - (B) Ivermectin
 - (C) Praziquantol
 - (D) Albendazole
31. The alkaloid obtained from crude opium is
 - (A) Colchicine
 - (B) Strychnine
 - (C) Papaverine
 - (D) Piperine
32. Which of the following is a non-selective COX inhibitor?
 - (A) Nabumetone
 - (B) Nimesulide
 - (C) Meloxicam
 - (D) Metamizol
33. Naloxone does not effectively reverse the respiratory depression produced by
 - (A) Morphine
 - (B) Buprenorphine
 - (C) Pethidine
 - (D) Methadone
34. The drug used in the treatment of Alzheimer's Disease is
 - (A) Neostigmine
 - (B) Pyridostigmine
 - (C) Rivastigmine
 - (D) Physostigmine
35. Which of the following is a glycopeptide antibiotic?
 - (A) Clindamycin
 - (B) Vancomycin
 - (C) Spiramycin
 - (D) Clarithromycin
36. Famciclovir is a prodrug of
 - (A) Penciclovir
 - (B) Ganciclovir
 - (C) Acyclovir
 - (D) Valaciclovir

37. The preferred salt of lithium which used in drug therapy is
(A) Chloride (B) Carbonate (C) Bromide (D) Sulphate
38. Therapeutic drug monitoring is NOT done for the following drug
(A) digoxin (B) lithium (C) phenytoin (D) levodopa
39. Disulfiram-like reactions is seen with the following drug
(A) Miconazole (B) Methimazole
(C) Mebendazole (D) Metronidazole
40. Zopiclone belongs to which group of drugs?
(A) Disease modifying antirheumatic drugs
(B) Sedative hypnotics
(C) TNF -alpha inhibitors
(D) Selective serotonin reuptake inhibitors
41. The atypical neuroleptic used in the treatment of psychoses is
(A) Thioridazine (B) Penfluridol
(C) Aripiprazole (D) Flupenthixol
42. Phenothiazines do NOT have the following property
(A) Alpha adrenergic blocking action (B) Beta adrenergic blocking action
(C) H1 antihistaminic action (D) Anti-5HT action
43. Valproate is not used in small children due to the potential adverse effect of
(A) Respiratory depression
(B) Central nervous system depression
(C) Aplastic anaemia
(D) Fulminant hepatitis
44. Ropinirole is used in the treatment of
(A) Parkinson's disease (B) Depression
(C) Anxiety disorders (D) Schizophrenia
45. Tizanidine is a
(A) Centrally acting muscle relaxant (B) Directly acting muscle relaxant
(C) Smooth muscle relaxant (D) Neuromuscular blocker

46. All of the following diuretics cause hypokalaemia EXCEPT
- | | |
|-------------------|-------------------------|
| (A) Acetazolamide | (B) Almiloride |
| (C) Furosemide | (D) Hydrochlorothiazide |
47. Which one of the following is NOT an adverse effect of Loop diuretics?
- | | |
|---------------------|--------------------|
| (A) Hypomagnesaemia | (B) Hyperuricaemia |
| (C) Hypercalcaemia | (D) Hyperglycaemia |
48. The diuretic of choice in acute pulmonary oedema is
- | | |
|--------------------|--------------------|
| (A) Mannitol | (B) Spironolactone |
| (C) Chlorothiazide | (D) Frsemide |
49. Which antihypertensive agent is a central α_2 -adrenergic receptor agonist?
- | | |
|---------------|-----------------|
| (A) Reserpine | (B) Clonidine |
| (C) Prazosin | (D) Propranolol |
50. Reduction in blood pressure with an associated increase in heart rate is seen with
- | | |
|---------------|-----------------|
| (A) Prazosin | (B) Hydralazine |
| (C) Verapamil | (D) Atenolol |
51. The vasodilator which dilates both arterioles and venules and used in hypertensive emergencies is
- | | |
|---------------|--------------------------|
| (A) Diazoxide | (B) Nitroglycerin |
| (C) Minoxidil | (D) Sodium Nitroprusside |
52. Which one of the following is NOT an adverse effect of angiotensin converting enzyme inhibitors?
- | | |
|--------------------|-----------------|
| (A) Cough | (B) Neutropenia |
| (C) Hyperglycaemia | (D) Proteinuria |
53. The nitrate preparation with an excellent oral bioavailability is
- | | |
|------------------------------|-----------------------------|
| (A) Isosorbide dinitrate | (B) Nitroglycerin |
| (C) Isosorbide 5 mononitrate | (D) Erithrityl tetranitrate |
54. Intravenous nitroglycerin is used to overcome coronary vasospasm in
- | | |
|---------------------|------------------------|
| (A) Variant angina | (B) Stable antina |
| (C) Unstable angina | (D) Orthostatic angina |

55. The use of sildenafil is contraindicated in patients taking nitrates because it can cause
- (A) Severe headache (B) Profound hypotension
(C) Colour blindness (D) Dyspepsia
56. Reflex tachycardia is commonly seen with which calcium channel blocker?
- (A) Diltiazem (B) Amlodipine
(C) Verapamil (D) Nifedipine
57. Which of the following is NOT a pharmacological effect of Digoxin?
- (A) Increase force of contraction of heart
(B) Prolong atrioventricular conduction
(C) Increase heart rate
(D) Decrease automaticity at normal doses
58. The most effective treatment for life threatening Digoxin toxicity is
- (A) Haemodialysis (B) Antidigoxin immunotherapy
(C) Electrical defibrillation (D) Lignocaine administration
59. Phase 1 reaction of drug metabolism include all of the following EXCEPT
- (A) Oxidation (B) Reduction (C) Hydrolytic (D) Methylation
60. Nicotinic activity is present in all of the following drugs EXCEPT
- (A) Acetylcholine (B) Metracholine
(C) Carbachol (D) Pilocarpine
61. The parenteral anaesthetic of choice for children undergoing short painful procedure is
- (A) Etomidate (B) Ketamine (C) Propofol (D) Thiopental
62. Which one of the following is NOT a selective serotonin reuptake inhibitor (SSRI)?
- (A) Fluoxetine (B) Duloxetine (C) Paroxetine (D) Sertraline
63. The antipsychotic drug with a least sedative effect is
- (A) Aripiprazole (B) Clozapine
(C) Quetiapine (D) Chlorpromazine

64. All of the following drugs are used for the treatment of status epileptics EXCEPT
(A) Clonazepam (B) Diazepam (C) Lorazepam (D) Phenytoin
65. Which opioid analgesic can be administered sublingually?
(A) Codeine (B) Buprenorphine
(C) Nalbuphine (D) Pentazocine
66. Which of the following drugs is NOT used in the treatment of alcoholism?
(A) Disulfiram (B) Flumazenil (C) Acamprosate (D) Naltrexone
67. The second generation antihistaminic with a higher incidence of drowsiness is
(A) Cetirizine (B) Loratadine (C) Fexofenadine (D) Azelastine
68. Select the drug which is approved for the treatment of chronic obstructive pulmonary disease (CaPD).
(A) Salmeterol (B) Nedocromil sodium
(C) Tiotropium (D) Zafirlukast
69. Which of the following is NOT an adverse effect of thiazide diuretics?
(A) Hyponatremia (B) Hyperkalemia
(C) Hypercalcemia (D) Hypochloremia
70. Which of the following Angiotensin converting Enzyme Inhibitors is NOT a prodrug?
(A) Enalapril (B) Benazepril (C) Lisinopril (D) Ramipril
71. Sildenafil should never be used along with organic nitrates because it can result in
(A) Exacerbation of angina (B) Impaired erectile function
(C) Profound hypotension (D) Severe skin rashes
72. An average age of mouse suitable for common experiments is
(A) 6 months (B) 3 months (C) 45 days (D) 21 days
73. Chloralose is a compound of
(A) Chloral and glucose (B) Chloral and sodium chloride
(C) Chloral and urethane (D) Glucose and hydrochloric acid
74. Frog-Ringer does NOT contain
(A) Calcium (B) Glucose
(C) Magnesium (D) Potassium

75. Carbogen (oxygen+5% CO₂) cylinder is painted
 (A) Black body with white top (B) Grey body
 (C) Black body with grey and white top (D) Blue body with black and red top
76. All of the following are agonists at α_2 adrenergic receptor EXCEPT
 (A) Clonidine (B) Oxymetazoline
 (C) α -methylnoradrenaline (D) Yohimbine
77. Maximum density of H₁ receptors is found in guinea pig
 (A) Ileum (B) Uterus (C) Trachea (D) Vascular bed
78. Following drugs can be ulcerogenic agents EXCEPT
 (A) Aspirin (B) Pirenzepine (C) Phenylbutazone (D) Reserpine
79. Lithium is estimated by using
 (A) Flame photometry (B) Fluorimetry
 (C) Spectrophotometry (D) Colorimetry
80. Current treatment of choice for insulinoma is
 (A) Methotrexate (B) Streptozocin
 (C) Vincristine (D) Glibenclamide
81. An anti-IgE recombinant humanized monoclonal antibody approved for the treatment of allergic asthma resistant to corticosteroids is
 (A) Adalimumab (B) Basiliximab (C) Omalizumab (D) Abciximab
82. Multi drug resistance protein 1 (MRP 1), increases resistance to all EXCEPT
 (A) Anthracyclines (B) Vinca alkaloids
 (C) Taxanes (D) Alkylating agents
83. Noradrenaline has least action on
 (A) α_1 receptor (B) α_2 receptor (C) β_1 receptor (D) β_2 receptor
84. Beneficial effects of nitrates in the treatment of angina includes all of the following EXCEPT
 (A) Decreased ventricular volume (B) Decreased arterial pressure
 (C) Decreased ejection time (D) Decreased diastolic perfusion

85. Choice of beta-blocker to treat open angle glaucoma in an asthma patient is
(A) Timolol (B) Levobunolol (C) Betaxolol (D) Carteolol
86. β -adrenoceptor antagonists are strongly indicated in
(A) Myocardial infarction (B) Hypotension
(C) Left ventricular failure (D) Heart block
87. Flurazepam is NOT used as a hypnotic agent because it has
(A) Active metabolite with long half life (B) No active metabolite
(C) Slow oral absorption (D) Short duration of action
88. The fraction of the dose of the drug absorbed into systemic circulation is known as
(A) Clearance (B) Volume of distribution
(C) Elimination half life (D) Bioavailability
89. Phase 2 clinical testing of an investigational new drug is for the purpose of
(A) First administering it to human volunteers
(B) Conducting multicentric trials
(C) Establishing its efficacy in patients
(D) Post-marketing surveillance
90. Pralidoxime, a choline esterase reactivator, has the following properties in organophosphate poisoning EXCEPT that
(A) Ageing of enzyme limits the effectiveness
(B) The use is a supplement to administration of atropine
(C) It crosses blood-brain barrier and enters CNS
(D) It causes neuromuscular blockade
91. Epinephrine is added to local anaesthetic agent like lidocaine in order to
(A) Stimulate local wound healing
(B) Promote homeostasis
(C) Facilitate the dissemination of the drug along the nerves
(D) Retard the rate of absorption and prolong the local anaesthetic action

92. Which one of the following drugs is associated with an increased heart rate following its administration?
- (A) Propranolol (B) Reserpine
(C) Alpha-methyl dopa (D) Hydralazine
93. Which one of the following cephalosporins would have maximum activity against anaerobic bacteria like *Bacteroides fragilis*?
- (A) Cephalothin (B) Cephalexin (C) Cefamandole (D) Cefoxitin
94. Bromocriptine is used therapeutically in the following disease conditions EXCEPT in
- (A) Hyperprolactinaemia (B) Acromegaly
(C) Alzheimer's disease (D) Parkinson's disease
95. Oral oseltamivir is effective in the treatment of
- (A) Influenza (B) Poliomyelitis (C) Herpes-zoster (D) Hepatitis-B
96. HIV protease inhibitor drugs like ritonavir is inhibited by cytochrome P450 enzyme system. Which isoform of the enzyme is involved here?
- (A) CYP 2 E1 (B) CYP 2 D6 (C) CYP 2 C9 (D) CYP 3 A4
97. Artemisinin combination therapy has the following advantages EXCEPT that of
- (A) Rapid reduction of parasite burden
(B) Endoperoxide effect
(C) Reduction of gametocytes
(D) Safety in children and pregnant women
98. Which one of the following benzodiazepines cannot be administered in elderly for its long action and day time sleep?
- (A) Lorazepam (B) Oxazepam (C) Diazepam (D) Triazolam
99. Proton pump inhibitors are pro-drugs that require activation. Therefore, they should be given
- (A) Before meals (B) After meals
(C) Along with H2 blockers (D) Along with sucralfate
100. The anticancer drug that causes haemorrhagic cystitis is
- (A) Doxorubicin (B) Methotrexate
(C) Cisplatin (D) Cyclophosphamide
-