INDEX NUMBER: 15X 16 SIGNATURE: DATE:

CHRISTIAN SERVICE UNIVERSITY COLLEGE, KUMASI, GHANA

FACULTY OF HEALTH AND APPLIED SCIENCES

DEPARTMENT OF PHYSICIAN ASSISTANTSHIP STUDIES

BSC. PHYSICIAN ASSISTANTSHIP STUDIES (MEDICAL)

END OF FIRST SEMESTER 2018/2019 ACADEMIC YEAR EXAMINATIONS

LEVEL 200

COURSE CODE AND TITLE PACS 213 PHARMACOLOGY

MAY, 2019 **Time Allowed: 2 Hours / 30 Minutes**

TOTAL MARKS: 60 %

SECTION A and B = 30 % SECTION C = 30%

INSTRUCTIONS TO CANDIDATES

SECTION A and B (100 MCQs) – **Answer all questions**

SECTION C

Answer three questions in all, one from part A, one from part B, and one from part C)

- **Write your Index Number** ----------
- **Name in Full** ----------
- **Date** ----------
- **Append your signature** on the space provided at the top of **each page of the Question paper.**

THE MCQs QUESTION PAPER WILL BE TAKEN AFTER ONE AND HALF HOURS.

INDEX NUMBER: SIGNATURE: DATE:

SECTION A

Choose the most appropriate answer by TICKING or CIRCLING the appropriate letter.

1. **The words pharmakon and logos are …….. ..Words from which the term …… was developed.**

A. French / Pharmacology
B. French / pharmacognosy
C. Greek / Pharmacognosy
D. Greek / pharmacology

2. **The rational study of drugs and their interactions with the body is also known as....?**

A. Pharmacokinetics
B. Pharmacology
C. Pharmacogenomics
D. Logos

3. **The branch of pharmacology that deals with natural drugs and their constituents is referred to as …….?**

A. Pharmacology
B. Pharmacogenomics
C. Pharmacognosy
D. Pharmacodynamics

4. **The study of hereditary variations in organisms that are revealed mainly by the effects of drugs designating the relation prevailing between the genetic factors and the nature of response to drugs is known as ……?**

A. Pharmacogenomics
B. Pharmacogenetics
C. Pharmacodynamics
D. Pharmacotherapeutics

5. **---------- is a substance or dosage form intended for use in the diagnosis, mitigation, treatment, cure or prevention of disease.**

A. Poisons.
B. Chemicals
C. Drug
D. Pharmacology

From Question 6 – 12 concerns drugs and their sources, write the most appropriate answer on the dotted line provided from letter ; A to F

A. Plant sources,
B. Microorganisms,
C. Animal sources,
D. recombinant biotechnology,
E. synthetic sources,
F. Mineral sources.

6. Baclofen ----------

7. Colchicine----------

8. Cynocobalamine ----------

9. Surgical ligatures ----------

10. Iron dexstran ----------

11. Insulin lispro ----------

12. In reality, the determination and regulation of the size, frequency and number of doses is referred to as .....?

A. Drug dose administration
B. Dosage
C. Pharmacokinetic dosage
D. Pharmacodynamic

13. When drugs are given by the oral route, it goes through all of the following phases except?

A. Pharmaceutic phase
B. Pharmacokinetic phase
C. Pharmacodynamic phase
D. Elimination phase

14. It has been found that when drugs are administered parenterally (SC, IN, IV), it goes through the following phase(s).

A. Pharmaceutic phase
B. Pharmacokinetic phase
C. Pharmacodynamic phase
D. Only B and C

15. Tablets first go through ..... when taken orally after swallowing.

A. Metabolism
B. Dissolution
C. Disintegration
D. Absorption

16. The pharmacokinetic phase after drug administration is known as .....?

A. Third phase
B. Second phase
C. First phase
D. Fourth phase

17. There are ..... processed involved with the pharmacokinetic phase after drug administration.

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

18. ---------- is /are the processes tablets go through first when swallowed.

A. Disintegration and dissolution
B. Disintegration and absorption
C. Disintegration and elimination
D. Only b

19. The 3rd phase after oral drug administration is termed ..... ?

A. Pharmaceutic phase
B. Pharmacokinetic phase
C. Excretion phase
D. Pharmacodynamic phase

20. In the third phase after oral drug administration ..... takes place.

A. A biologic or physiologic response
B. Excretion
C. Metabolism
D. Drug dissolution

21. The route of administration of drugs is solely by the inherent characteristic property of the drug. This is aided by .....?

A. Physical and chemical features such as hydrophilicity, lypophilicity , ionization,
B. Therapeutic objectives
C. Only A and B
D. B only

22. According to the route of drug administration, Enteral, Parenteral and hypoglosaal administration implies administration of medication by ..... route?

A. Injections , oral and sublingual
B. Injection, inhalational, oral
C. Oral, injections, sublingual
D. A and B

23. The merits enteral route of drug administration include all the following except?

A. Relatively safer in disposition
B. More convenient to administer
C. Cost effectiveness
D. Onset of action is comparatively low.

24. When drugs are administered, ---------- occurs mostly by diffusion without the use of energy.

A. Osmotic absorption
B. Active absorption
C. Passive absorption
D. Pinocytocis

25. In ---------- drug absorption, a carrier such as an enzyme or protein is needed to move drug against a concentration gradient where energy is needed for active absorption.

A. Diffusion
B. Active
C. Passive
D. Drug

26. Drug absorption through the GI membranes include....?

A. Passive absorption
B. Active absorption
C. Pinocytosis
D. All of the above

27. Drugs given intramuscularly can be ---------- in muscles that have more blood vessels than those with few.

A. Injected faster
B. Absorbed faster
C. A and B
D. Deposited

28. There are .....major receptor families.

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

29. The receptor families include all the following.

A. Transcription
B. Cell membrane –embedded enzyme
C. Ligand – gated ion channels and G-protein
D. None of the above

30. According to the drug receptor theory, most receptors are protein in structure and are found on cell membranes. Drug binding sites are primarily on:

A. Ion channel
B. Proteins and glycoproteins
C. Enzymes
D. Band C

31. According to drug receptor interactions, if the intensity of response produced by a drug is proportional to the number of receptors occupied and maximal response occurs when all the receptors are occupied it is called ....?

A. The synergy theory
B. The rate theory
C. The receptor occupation theory
D. The addition theory

32. In this theory, the effect of two drugs given simultaneously, the action of one drug is increased by the other. This is known as?

A. Additive
B. Synergism
C. Supradditive
D. Antagonism

33. This is the phenomenon is known as ..... if the effect of combined therapy is greater than the individual effect of only one of the drugs.

A. Additive
B. Synergism
C. Supraaditive
D. Drug interaction

34. In this type of drug antagonism, the antagonist binds with the same receptor as the agonist.

A. Competitive antagonism
B. Non-competitive antagonism
C. Competitive agonist
D. None of the above

35. Agents that act selectively in relieving pain sensation by critically acting on the CNS without altering consciousness are called ....?

A. Analgesics
B. Corticosteroids
C. Drugs
D. Opioids

36. During pain, fever and inflammation, this is liberated from phospholipid fraction of the cell membrane.

A. Phospholipid
B. COX-1
C. Arachidonic acid
D. COX-2

37. The conversion of the liberated agent from phospholipid is converted to ..... via ..... pathway.

A. Prostaglandin / cyclooxygenase pathway
B. Prostaglandin / COX -1
C. COX – 1 / Cyclooxygenase pathway
D. Prostaglandin / COX -2

38. NSAIDS generally control pain by ---------- and ..... the sensation to pain mechanism.

A. Promoting prostaglandin synthesis / activate
B. Promoting prostaglandin synthesis / inhibit
C. Inhibit prostaglandin synthesis / block
D. Inhibit prostaglandin synthesis / activate

39. NSAIDS generally have the following properties except?

A. Anti-inflammatory
B. Analgesic
C. Antipyretic
D. None of the above

40. Endomethacin belongs to one of the following analogues.

A. Oxicam
B. Fenamate
C. Miscilaneous
D. Acetic Acid Analogues

41. Mefenamic acid belongs to which analogue?

A. Fenamates
B. Oxicams
C. Acetic acid analogues
D. None of the above

42. The miscellaneous group of NSAIDS includes?

A. Brufen
B. Naproxen
C. Diclofenac
D. All of the above

43. Analgesic that exhibit almost complete absence of the anti-inflammatory activity is?

A. Brufen

B. Acetamenophen

C. Diclofenac

D. Celebrex

44. Drugs or agents known to cause or produce drowsiness and encourage the onset and maintenance of sleep are known as?

A. Sedative

B. Barbiturate

C. Hypnotic

D. A and C

45. The agent or drugs that reduce anxiety and exert a calming effect with little or no effect on motor or mental function to calm patients is an effect of?

A. Hypnotics

B. Sedatives

C. Respiratory depressants

D. Analgesics

46. These agents or drugs slow brain activity with a calming effect and also induce sleep.

A. Sedatives

B. Hypnotic

C. Opioids

D. Narcotic analgesics

47. ..... refers to substances that moderate activity and excitement including a calming effect whiles ..... are substances that causes drowsiness and facilitates the onset and maintenance of natural sleep.

A. Sedative / hypnotic

B. Hypnotic / sedative

C. Brufen / morphine

D. Celebrex / pethidine

48. These drugs work by calming the CNS. They affect the neurotransmitter gamma-amino butyric acid which decreases brain activity.

A. Sedatives

B. Hypnotics

C. Anticholinergics

D. Cholinergics

From questions 49 -53, WRITE letter A for all answers that are TRUE and Letter B for all answers that is FALSE on the space provided by the dotted lines.

49. Barbiturates at lower doses act like benzodiazipines and simply increase the effect of GABA at GABA-A receptor.....

50. At higher doses Barbiturates may act as direct agonists at GABA-A receptors in the place of GABA to produce profound CNS depression.....

51. Question 49 and 50 partially explains the why there is increased risk associated with barbiturate use relative to benzodiazepine risk.....

52. Barbiturates do not have any analgesic effect. And the ultra short acting barbiturates produce anaesthesia.....

53. During barbiturate poisoning, there is respiratory depression, circulatory shock and hyperthermia.....

From questions 54 to 75, select the most appropriate answer and circle any of the ALPHABETS (A, B, C, D) that represents your answer.

54. Benzodiazepines are classified into the following groups namely?

A. Short acting

B. Intermediate acting

C. Long acting

D. All of the above

55. The duration of action for an individual benzodiazepine plays a major role in determining how that specific drug will be used clinically. The duration of action is dependent on two factors which include?

A. The half life
B. The metabolic rate
C. The disease
D. A and B

56. The group of drugs that cause loss of pain sensation and consciousness are called...?

A. Benzodiazepines
B. Antipyretics
C. General anaesthetics
D. Non narcotic analgesics

57. The group of drugs that reversibly block impulse conduction in a restricted area of the body where it is applied topically or by injection are referred to as .... ?

A. Intravenous anaesthetics
B. Local anaesthetics
C. Sublingual anaesthetics
D. Enteral anaesthetics

58. Local anaesthetics are classified into two categories namely?

A. Benzene linked
B. Esther linked
C. Amide linked
D. B and C

59. Local anaesthetics produce their effects by .....

A. Reversibly blocking impulse conduction in a restricted area of the body by topical or local injection.
B. Reversibly aiding impulse conduction in a restricted area of the body by topical or local injection.
C. Irreversibly blocking impulse conduction in a restricted area of the body by topical or local injection.
D. Reversibly blocking impulse conduction in the body.

60. They following are examples of tranquilizers.

A. Carbamazepine
B. Haloperidol
C. Olanzepine
D. All of the above

61. Depression is an alteration in mood represented by a low mood. Major depression is a depressed mood on a daily basis for a minimum period of ..... and is often accompanied by a markedly reduced interest or pleasure in all or almost activities.

A. 2 months
B. 3 weeks
C. 2 weeks
D. 3 months

62. Anti depressants is the mainstay for moderate to severe depression. For milder depressive states what is the preferred therapy?

A. Antidepressants
B. Isolation of patient
C. Psychological
D. Pharmacological treatment

63. Antidepressants work by --------

A. Equating the levels of neurotransmitter concentration in the CNS
B. Decreasing the levels of neurotransmitter concentration in the CNS
C. Increasing the levels of neurotransmitter concentration in the CNS
D. Increasing the levels of neurotransmitter concentration in the periphery

64. Neurotransmitters found in the CNS include ....

A. Serotonin also called 5 – hydroxytryptamine
B. Dopamine
C. Noradrenaline
D. All of the above

65. The biogenic amine hypothesis explaining depression states that;

A. Depression results from a deficiency of neuronal and synaptic catecholamine primariliy noradrenaline
B. Mania is due to excess of amines at the adrenergic receptor sites in the brain
C. A and B
D. Only A

66. The permissive hypothesis of depression postulates that ..... concentration of serotonin is the predisposing factor in patients with affective disorders.

A. Increased
B. Decreased
C. Equivalent
D. A and B

67. The permissive hypothesis stats that ..... and mania results from increased dopamine and noradrenaline levels but ..... levels.

A. depression results from decreases in both the serotonin and catecholamine levels / decreased serotonin
B. depression results from increases in both the serotonin and catecholamine levels / decreased serotonin
C. depression results from decreases in both the serotonin and catecholamine levels / increased serotonin
D. Depression results from increases in both the serotonin and catecholamine levels / decreased serotonin.

68. Drug therapy for Parkinson's disease is aimed at increasing the levels of dopamine and or antagonizing the effects of acetylcholine. This is because

A. Dopamine is an inhibitory neurotransmitter and acetylcholine is an excitatory neurotransmitter in the area of the brain
B. A correct balance between dopamine and acetylcholine is needed for proper regulation of posture, muscle tone and voluntary movement.
C. Dopamine acts in the basal ganglia to control movements
D. All of the above

69. The indirect acting dopaminergic drugs were produce because the enzyme monoamine oxidase causes the breakdown of catecholamines in the body. Giving ..... to help counter the dopaminergic deficiency seen in Parkinson's disease.

A. monoamine oxidase inhibitors causes a decrease in the level of dopaminergic stimulation in the CNS
B. monoamine oxidase inhibitors causes a increase in the level of dopaminergic stimulation in the CNS
C. monoamine oxidase inhibitors causes a decrease in the level of dopaminergic inhibition in the CNS
D. monoamine oxidase inhibitors causes a increase in the level of dopaminergic inhibition in the CNS

70. The indirect acting dopaminergic drugs include:

A. Amantadine a dopamine modulator drug that causes the release of dopamine and other catacholamines from their storage sites in the presynaptic fibres of the nerve cell in the basal ganglianot yet destroyed.
B. Amantadine also blocks the reuptake of dopamine in the nerve fibres to cause higher levels of dopamine in the synapses between the nerves and cause improved neurotransmission between neurones
C. Tolcapone and entacapone – catechol ortho-methyltransferase (COMT) inhibitors that work presynapticaly .
D. All the above

71. Catechol ortho-methyltransferase (COMT) inhibitors such as Tolcapone acts ....

A. Both centrally and peripherally
B. Only centrally
C. Only peripherally
D. B and C

72. The advantage of both Tolcapone and antacapone is to

A. Delay the duration action of the two drugs
B. Prolong the duration action of Tolcapone
C. Prolong the duration of action of levodopa
D. Increase the concentration of tolcapone

73. In the management of parkinsons disease, the reduction of the wearing off phenomenon results when .....

A. Entacapone is given with Tolcapone
B. Levodopa is given with Carbidopa
C. Entacapone is given with carbidopa
D. Levodopa is given with tolcapone

74. The traditional therapy for parkinsons disease is levodopa.the following are true concerning levodopa.

A. It is the biologic precursor of dopamine neede by the brain for dopamine synthesis
B. Levodopa is significantly metabolized before it reaches the brain hence it is not given alone
C. Levodopa is broken down outside the CNS by the enzye dopa decarboxylase.
D. All the above

SECTION B

From questions 75 to 100, write letter A if the answer is **TRUE and Letter B** if the answer is **FALSE on the dotted lines provided.**

75. For the oral route of drug administration, bioavailability occurs after.....
76. The percentage of bioavailability for drugs administered orally is always less than 100% .....
77. The term ligand binding domain is the site on the receptor in which the drug binds .....
78. The better the drug fits the receptor site, the less biologically active the drug is.....
79. Anticholinergics including are contraindicated in older adults because of significant potential adverse effects.....

80. The anticholinergic drugs block the effects of the neurotransmitter acetylcholine at the cholinergic receptors in the brain and the rest of the body.....
81. Acetylcholine accumulation in Parkinson's disease causes overstimulation of the cholinergic excitatory pathway, which results in muscle relaxation and to reverse tremors .....
82. Anticholinergic drugs are used as adjunct therapy in Parkinson's disease due to their antitremor properties. .....
83. Acetylcholine is responsible for causing decreased salivation, urinary retention, decreased GI mobility (constipation), dilated pupils and smooth muscle relaxation.....
84. Anticholinergic drugs cause increased salivation, lacrimation, urination, diarrhoea, increased gastrointestinal mobility and possibly emesis.....
85. Dopamine is an excitatory neurotransmitter and acetylcholine is an excitatory neurotransmitter in the area of the brain.....
86. A correct balance between acetylcholine and dopamine is needed for proper regulation of posture, muscle tone and voluntary movement.....
87. In Parkinson's disease there is destruction of the substantia nigra which leads to dopamine depletion. This often leads to excessive, unopposed cholinergic activity.....
88. The current treatment of Parkinson's disease is used to slow the progression of the symptoms but not to slow the disease progression.....
89. Amantadine an indirect acting dopaminergic drug causes the uptake of dopamine into nerve cell fibres to improve dopamine neurotransmission between neurones.....
90. Tolcapone and Entacapone are direct acting dopaminergic drugs and are also called the catechol ortho – methyltransferase inhibitors to block the enzyme COMT that catalyzes the breakdown of the bodys catecholamine.....
91. Tolcapone acts both centrally and peripherally, whereas entacapone cannot not cross the blood brain barrier.....
92. Tolcapone and entacapone has the advantage that prolong the duration of action of levodopa

.....

93. Bromocriptine and ergot alkaloid is an indirect acting dopamine receptor agonist .....

94. Bromocriptine works by activating presynaptic dopamine receptors to stimulate the production of more dopamine.....

95. Nondopamine dopamine receptor agonists (NDDRAs) are direct acting dopamine receptor agonists .....

96. Drugs from the synthetic sources include suxamethonium, spironolactone and ciprofloxacin .....

97. The half life of a drug is the time taken for half of the drug given to cure the disease.....

98. A drug goes through several half lives before more than 90% of the drug is eliminated.....

99. A long half life is 24 hours or more whereas a short half life is considered to be 4 – 8 hours .....

100. Drug dose is usually increased in the elderly and those with renal impairment due to decreased clearance. .....