



**TECHNICAL UNIVERSITY OF MOMBASA**

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FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF MEDICAL SCIENCES

**UNIVERSITY EXAMINATION FOR:**

DIPLOMA IN MEDICAL LABORATORY

APM 2103 : BASIC PHARMACOLOGY AND PHARMACOGNOSY

SPECIAL/ SUPPLIMENTARY EXAMINATIONS

**SERIES: SEPTEMBER 2018**

**TIME: 2 HOURS**

**DATE:** Pick Date Sep 2017

**Instructions to Candidates**

You should have the following for this examination

*-Answer Booklet, examination pass and student ID*

This paper consists of two Section(s). Attempt ALL questions.

**Circle the correct answer in section A.**

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SECTION A

1. Which one of the following affects absorption?
  - A) Drug formulation
  - B) Time of administration
  - C) Mode of action
  - D) pH of the body
2. A patient with renal impairment taking a renally excreted drug will require which one of the following?
  - A) Dose reduction

- B) Dose increase
  - C) Same dose
  - D) No dose
3. A receptor antagonist...
- A) Binds to a receptor and activates it
  - B) Binds to a receptor without causing activation
  - C) Blocks an enzyme
  - D) Does not bind to a receptor
4. Factors which affect a drug's volume of distribution include all of the following except
- A) Patient's race
  - B) Patient's age
  - C) Presence of a disease
  - D) Extent of drug plasma protein binding
5. Two of the most important sites of drug elimination are
- A) Pulmonary and Liver
  - B) Liver and GIT
  - C) Kidney and Liver
  - D) Pulmonary and Kidney
6. Drugs fit receptors using the lock and key model. Covalent bonds to the \_\_\_\_\_ and the \_\_\_\_\_ specific
- A) Strongest, most
  - B) Strongest, least
  - C) Weakest, most
  - D) Weakest, least
7. Which one of the following is **NOT** an action of the body on a drug?
- A) Absorption
  - B) Distribution
  - C) Metabolism
  - D) Side effects
8. For Intravenous (IV) dosages what is the bioavailability assumed to be?
- A) 0%
  - B) 25%
  - C) 100%
  - D) 75%
9. What organ is responsible for metabolism in the "first pass effect"?
- A) Liver
  - B) Heart
  - C) Brain

- D) Spleen
10. Most drugs are either \_\_\_\_\_ acids or \_\_\_\_\_ bases
- A) Strong, Strong
  - B) Strong, Weak
  - C) Weak, Strong
  - D) Weak, Weak
11. A feature of sublingual route is
- A) Pretty fast absorption
  - B) A drug exposed to gastric secretions
  - C) Drug exposed to prominent liver metabolism
  - D) Drug that can be administered in a variety of doses
12. The term “biotransformation” include all of the following **EXCEPT?**
- A) Accumulation of substances in fat tissue
  - B) Binding of substances with plasma proteins
  - C) Accumulation of substances in a tissue
  - D) Process of physiochemical or biochemical alteration of a drug in the body
13. Conjugation of a drug includes all of the following **EXCEPT?**
- A) Glucuronidation
  - B) Sulfate formation
  - C) Hydrolysis
  - D) Methylation
14. Half-life ( $t_{1/2}$ ) is the time required to
- A) Change the amount of a drug in plasma by half during elimination
  - B) Metabolize a half of an introduced drug into active metabolite
  - C) Absorb half of an introduced drug
  - D) Bind a half of an introduced drug to plasma proteins
15. If an agent can produce submaximal effects and has moderate efficiency it is called
- A) Partial agent
  - B) Antagonist
  - C) Full against
  - D) Agonist
16. The reasons why we need dosage form are
- i) Accurate dose
  - ii) Protection
  - iii) Masking taste and odor
  - iv) Beautification
- A) I,ii,iii
  - B) ii,iii,iv
  - C) I,iii,iv
  - D) ii,I,iv

17. Patient related factors affecting absorption include the following except
- A) GI pH
  - B) Blood flow through GIT
  - C) Race
  - D) Age
18. The subcellular location of metabolizing enzymes are
- A) Endoplasmic reticulum, Mitochondria
  - B) Nucleus, Flagella
  - C) Cytosol, Cell wall
  - D) Mitochondria, Cell membrane
19. If an agonist can produce submaximal effects and has moderate efficacy it's called:
- A) a) Partial agonist
  - B) b) Antagonist
  - C) c) Agonist-antagonist
  - D) d) Full agonist
20. What does "pharmacokinetics" include?
- a) Localization of drug action
  - b) Mechanisms of drug action
  - c) Excretion of substances
  - d) Interaction of substances
21. Which of the following best describes ethnobotany:
- A\_ the process by which animals self-medicate, by selecting and using plants, soils, and insects to treat and prevent disease.
  - B- the study of the traditional use of plants for medicinal purposes;**
  - C- the study of the pharmacological qualities of traditional medicinal substances;
  - D- the study of chemicals derived from marine organisms.
22. In botanical naming system the first name, which is always spelt with Capital letter, denotes the genus:
- a. species
  - b. **b- genus**
  - c. family
  - d. order
23. What does soxhlet refer to?
- A- chemical tests

- B- type of plant classification
- C- method for extract material from plant
- D- d- morphological test

24. The solvent used for extraction is called

- A. Menstruum
- B. Mark
- C. vehicle
- D. Galenical

25. Crude drugs CANNOT be stored in

- A. Amber glass containers
- B. Covered metal tins
- C. Paper bags
- D. Airtight containers

26. Dilute extracts can be obtained by

- A. Infusion
- B. percolation
- C. maceration
- D. decoction

27. -----is a substance made by extracting a part of a raw material , often by using a solvent

- A. Alcohol
- B. Tincture
- C. Extract
- D. Water

28. ----- are Metallic or non-metallic minerals provide various inorganic materials not available from plants or animals and used as they occur in nature

- A. GMO
- B. Mineral
- C. Oils
- D. Gums

29. . Unintended pharmacological effects produced with therapeutic dose of the drug is referred to as the .....effects

- a. Carcinogenic
- b. Teratogenic
- c. Side

- d. idiosyncrasy
30. A ----- drug is one where the the molecular structure of substances undergo a slight change in the chemical structure makes the drug effective against different organisms
- a. Synthetic
  - b. Antibiotic
  - c. Semisynthetic
  - d. Penicillin
31. Which of the following does not produce an effect by reducing activity of specialized cells
- a. Spasmolytics
  - b. Antihypertensives
  - c. Adrenaline
  - d. barbiturates
32. Metabolism of a drug before its absorbed where it is required to prodeuce its effects is called .....
- a. Placebo
  - b. Entero-hepatic cycling
  - c. Disease state
  - d. First pass effect
33. Which of the following is not a physico-chemical property of a drug?
- a. Water solubility
  - b. Ionization
  - c. Physical state
  - d. Formulation
34. which of the following is not a reason for drug metabolism?
- a. Render drug harmless
  - b. Ease elimination
  - c. Activate prodrugs
  - d. Deactivate prodrugs
35. Which of the following is not a physiological barrier in drug distribution?
- a. Testicular
  - b. Blood brain
  - c. Placental
  - d. Lactation
36. A situation where metabolism of drugs is accelerated due to increased activity of the enzymes is .....
- a. First pass effect
  - b. Placental activation
  - c. Enzyme induction
  - d. Drug synergism
37. Which of the following is an emotional factor affecting drug effectiveness

- a. Tachyphylaxis
  - b. Placebo effect
  - c. Antagonism
  - d. Agonists
38. Drugs given transcutaneously can have their effects increased by the following except.....
- a. Iontophoresis
  - b. Inunctions
  - c. Jet injection
  - d. Inhalation
39. Specialized transport of drugs across the cell membrane include the following except.....
- a. Filtration
  - b. Active transport
  - c. Facilitated diffusion
  - d. Endocytosis
40. The following routes of drug administration are from the alimentary tract except
- a. Buccal
  - b. Stomach
  - c. Subcutaneous
  - d. intestines

## SECTION B

41. Describe parameters to be considered when choosing an appropriate extraction method (20 mks)
42. Which factors are considered as good agricultural practice when harvesting medicinal drugs (20 mks)
43. Describe the general mechanisms of drug action, giving appropriate examples (20 MKS)