

Answer Key PHARMACY

Ans1. A

Ans2. D

Ans3. A

Ans4. A

Ans5. D

Ans6. C

Ans7. C

Ans8. B

Ans9. C

Ans10. D

Ans11. D

Ans12. C

Ans13. D

Ans14. C

Ans15. A

Ans16. B

Ans17. B

Ans18. D

Ans19. A

Ans20. B

Ans21. D

Ans22. B

Ans23. A

Ans24. C

Ans25. B

Ans26. A

Ans27. B

Ans28. C

Ans29. A

Ans30. B

Ans3. B

Ans32. C

Ans33. B

Ans34. A

Ans35. B

Ans36. C

Ans37. B

Ans38. A

Ans39. B

Ans40. A

Robert
14/1/25

Controller of Examinations
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Ph.D. Entrance Examination of PHARMACY

- Q1. Which of the following statements is true regarding one-compartment pharmacokinetic models?
- The drug distributes uniformly across all compartments simultaneously
 - The elimination rate is constant as the absorption rate is constant
 - One-compartment models are only valid for intravenous drug administration
 - The drug distributes non-uniformly follow one compartment
- Q2. CPT consists of.....
- 20% acacia, 20% tragacanth, 15% starch, 45% Sucrose
 - 20% acacia, 15% tragacanth, 30% starch, 35% sucrose
 - 20% acacia, 25% tragacanth, 30% starch, 40% Sucrose
 - 20% acacia, 15% tragacanth, 20% starch, 45% Sucrose
- Q3. Which of the following statements is true about eutectic mixtures?
- Eutectic mixtures form when two solid substances melt at the same temperature
 - Eutectic mixtures result in a mixture that has the highest melting point compared to its individual components
 - The eutectic point is where two liquid substances form a solid solution
 - Eutectic mixtures are typically composed of one liquid and one solid component
- Q4. The last item written in the inscription is ...
- Vehicle, Diluent
 - Active ingredients
 - Medicament .
 - Quantity
- Q5. In community pharmacy, which of the following is essential for patient counseling?
- Providing drug information sheets
 - Dispensing medications without consulting the doctor
 - Monitoring the patient's clinical symptoms
 - Explaining the side effects and proper use of medications
- Q6. Which of the following is used to evaluate the stability of a pharmaceutical product during accelerated stability studies?
- The packaging material's resistance to moisture
 - The drug's dissolution profile over time
 - The rate of drug degradation under controlled temperature and humidity
 - The visual appearance of the product
- Q7. The law of mass action is used to describe:
- The solubility of a drug in water
 - The dissolution rate of a drug from its dosage form
 - The relationship between drug concentration and its effect
 - The rate of drug metabolism in the liver
- Q8. Which of the following is true regarding the viscosity of a Newtonian fluid?
- Viscosity decreases with increasing shear rate
 - Viscosity is constant regardless of shear rate
 - Viscosity increases with decreasing temperature
 - Viscosity is dependent on the concentration of the solute

- Q9. In the Kjeldahl method, the nitrogen content is determined using:
- Strong base
 - Potassium permanganate
 - Sulfuric acid and ammonia
 - Sodium hydroxide
- Q10. Which of the following is NOT a method for determining endpoints in precipitation titrations?
- Mohr's method
 - Volhard's method
 - Fajan's method
 - Karl Fischer method
- Q11. The strength of a reducing agent in a redox reaction is determined by
- Its atomic weight
 - Its oxidation potential
 - Its equivalent weight
 - Its reduction potential
- Q12. Which solvent is commonly used in non-aqueous titration for acidic drugs?
- Water
 - Ethanol
 - Glacial acetic acid
 - Benzene
- Q13. The Van Deemter equation in chromatography describes:
- pH changes in buffer solutions
 - Resolution in chromatographic systems
 - Solubility of analytes
 - Column efficiency factors
- Q14. The equivalent weight of potassium permanganate in acidic medium is:
- Molar mass/2
 - Molar mass/3
 - Molar mass/5
 - Molar mass/8
- Q15. In iodometry, iodine reacts with:
- Sodium thiosulfate
 - Potassium permanganate
 - Ceric ammonium sulfate
 - Hydrochloric acid
- Q16. In High-Performance Liquid Chromatography (HPLC), which factor has the greatest impact on the resolution between two closely eluting peaks, according to the van Deemter equation?
- Particle size of the stationary phase
 - Flow rate of the mobile phase
 - Length of the column
 - Temperature of the mobile phase

- Q17. Which of the following antiepileptic drugs exerts its therapeutic effect by enhancing glutamic acid decarboxylase (GAD) activity?
- Ethosuximide
 - Valproic acid
 - Stiripentol
 - Phenytoin
- Q18. The therapeutic effect of disulfiram on alcohol dependence is achieved through its inhibitory action on...
- Alcohol dehydrogenase
 - Aldehyde dehydrogenase
 - CYP450
 - Acetaldehyde dehydrogenase
- Q19. Which of the following diuretics is highly protein-bound and is therefore minimally filtered by the glomerulus?
- Furosemide
 - Albumin
 - Acetazolamide
 - Spironolactone
- Q20. Which of the following drugs is used as a first-line agent in the treatment of acute promyelocytic leukemia (APL)?
- All-trans retinoic acid (ATRA)
 - Arsenic trioxide
 - Imatinib
 - Cytarabine
- Q21. Which of the following is NOT an effect of atropine?
- Decreased salivation
 - Reduced gastrointestinal motility
 - Mydriasis
 - Bradycardia
- Q22. Which of the following is an ester local anesthetic?
- Bupivacaine
 - Procaine
 - Ropivacaine
 - Lidocaine
- Q23. A centrally acting antihypertensive that acts as an alpha-2 agonist is:
- Methyldopa
 - Spironolactone
 - Losartan
 - Amlodipine
- Q24. Propylthiouracil is used in the treatment of:
- Addison's disease
 - Hypothyroidism
 - Graves' disease
 - Diabetes mellitus

Q25. A corticosteroid commonly used for the prophylactic treatment of asthma is:

- a) Salmeterol
- b) Fluticasone
- c) Ipratropium
- d) Montelukast

Q26. Which law explains the relationship between the pressure and volume of an ideal gas at constant temperature?

- a) Boyle's Law
- b) Charles' Law
- c) Avogadro's Law
- d) Dalton's Law

Q27. According to the Gibbs adsorption isotherm, what happens at the interface during adsorption?

- a) Increase in entropy
- b) Decrease in free energy
- c) Increase in temperature
- d) Increase in internal energy

Q28. What is the type of isomerism in compounds with the same molecular formula but different connectivity of atoms?

- a) Optical isomerism
- b) Conformational isomerism
- c) Structural isomerism
- d) Geometrical isomerism

Q29. What is the product formed in a Hoffman rearrangement?

- a) Amine
- b) Alcohol
- c) Ketone
- d) Aldehyde

Q30. Which of the following is an antihistamine drug?

- a) Ibuprofen
- b) Ebastine
- c) Metoprolol
- d) dicyclomine

Q31. Which of the following vitamins acts as a coenzyme in transamination reactions?

- a) Vitamin B1
- b) Vitamin B6
- c) Vitamin B12
- d) Vitamin K

Q32. Which of the following mechanisms involves covalent drug-receptor interactions?

- a) Ion channel blocking
- b) Reversible enzyme inhibition
- c) Alkylation of DNA by anticancer drugs
- d) G-protein coupled receptor activation



- Q33. Which pathway is primarily involved in the biosynthesis of sesquiterpenes?
- Shikimic acid pathway
 - Mevalonate pathway
 - Pentose phosphate pathway
 - Embden-Meyerhof pathway
- Q34. The presence of which type of tannins can be confirmed using the Goldbeater's skin test?
- Hydrolysable tannins
 - Condensed tannins
 - Pseudo-tannins
 - Non-phenolic tannins
- Q35. In pharmacognostic studies, which of the following best differentiates between *Digitalis purpurea* and *Digitalis lanata*?
- Morphological characteristics of leaves
 - Chemical composition of glycosides
 - Microscopic characteristics of stomata
 - The yield of volatile oils
- Q36. Which of the following is considered a precursor in the biosynthesis of lignans?
- Cinnamic acid
 - Shikimic acid
 - Phenylalanine
 - Tyrosine
- Q37. The anti-inflammatory activity of volatile oils in *Mentha* species is primarily attributed to:
- Limonene
 - Menthol and menthone
 - Eugenol
 - Myrcene
- Q38. The primary active constituent responsible for the anticancer activity of *Catharanthus roseus* is:
- Vinblastine and vincristine
 - Atropine
 - Morphine
 - Reserpine
- Q39. The resin present in *Cannabis sativa* interacts with which receptor system in the human body?
- Opioid receptors
 - Cannabinoid receptors (CB1 and CB2)
 - Serotonin receptors
 - Dopamine receptors
- Q40. Which enzyme plays a crucial role in the biotransformation of anthraquinone glycosides into their active forms?
- β -glucosidase
 - α -amylase
 - Peptidase
 - Cholinesterase