

Sample Midterm 1

1. The sudden drop in life expectancy in 1918 was due to:
 - a. The Great Famine
 - b. Influenza pandemic
 - c. Black Plague
 - d. World War II
 - e. None of the above

2. Which of the following diseases is 100% eradicated?
 - a. Polio
 - b. Malaria
 - c. Smallpox
 - d. Leprosy
 - e. All of the above

3. The “Doctrine of Signatures” by Jakob Bohme states that:
 - a. All living things have a medical use.
 - b. God created everything with an indication of its purpose.
 - c. God intended for us only to use natural remedies.
 - d. Medications only work by the placebo effect.
 - e. All doctors must have signatures.

4. Which of the following is true?
 - a. “An Account of the Foxglove and its Medical Uses” was written by Erasmus Darwin in 1785, the competitor to William Withering.
 - b. Lanoxin (digoxin), extracted from foxglove plants, was an effective medication for heart attacks.
 - c. Bloodletting was a common and ineffective treatment for heart failure (dropsy).
 - d. William Withering discovered the effects of foxglove by accidentally using it in a patient’s tea.
 - e. None of the above.

5. Which of these can help prevent malaria?
 - a. Mosquito nets.
 - b. Genetically modified parasite-resistant mosquitoes.
 - c. Ipecac.
 - d. A and B only.
 - e. A and C only.

6. Thalidomide:
 - a. Is a teratogen and caused birth defects in the spine of newborns.
 - b. Had gone through safety testing in Europe.
 - c. Was never prescribed in the USA thanks to Dr. Frances Kelsey.
 - d. A and C only.
 - e. B and C only.

7. What was William Withering's famous discovery?
 - a. Milkmaids were immune to smallpox.
 - b. Foxglove extract could be used to treat dropsy.
 - c. All plants contained therapeutic compounds.
 - d. Salicylic acid from the willow tree extract, used for pain and inflammation.
 - e. Realized that heroine was not safe.

8. Thalidomide introduced what problems, causing it to be removed from the market?
 - a. Caused limb abnormalities in the children of mothers who took the drug.
 - b. Caused hyperthyroidism in the children of mothers who took the drug.
 - c. Caused stomach cancer in the expectant mothers who took the drug.
 - d. Caused early heart disease in the expectant mothers who took the drug.
 - e. Caused multiple sclerosis in the individuals who took this drug.

9. Which of the following is true?
 - a. Rachel Carson received the Nobel Prize in Medicine and Physiology, for her contribution in synthesizing DDT.
 - b. Artemisinin is an effective remedy against sepsis, preventing a large number of deaths on the operating tables in the early 1900s.
 - c. In the 1950s, Listerine was commonly used to treat dandruff and bad breath.
 - d. Although effective in killing insects, DDT was banned in many countries due to its teratogenic properties that can affect humans.
 - e. None of the above.

10. In 2019, a new drug hit the market and the present revenue has been calculated to be 700,000\$ per year. Assume sales of this drug are increasing at 7% a year. In what year will this revenue be at 1,400,000\$ per year?
 - a. 2022
 - b. 2019
 - c. 2045
 - d. 2029
 - e. Never.

11. Which of the following countries/continents is responsible for approximately 50% of prescription drug sales in the world?
- Canada
 - Italy
 - Japan
 - South America
 - North America
12. Assume that sales of a drug are increasing at 10% a year. What is the expected total revenue in 7 years if the present revenue is \$1,000,000 per year?
- \$500,000
 - \$2,000,000
 - \$1,500,000
 - \$700,000
 - \$100,000
13. Who invented the famous quote “Cure sometimes, treat often, comfort always”?
- Thomas Roddick
 - Hippocrates
 - Joseph Lister
 - William Osler
 - Dr. John Harvey Kellogg
14. In 2019, a new drug has hit the market and the present revenue has been calculated to be 1 600 000\$ per year. Assume sales of this drug are decreasing at 7% a year. In what year will this revenue be at 800 000\$ per year?
- 2020
 - 2027
 - 2029
 - 2031
 - 2026
15. Which colour of urine would indicate that a patient has liver problems?
- Grey
 - Brown
 - Pink
 - Bright yellow
 - None of the above

16. Which of the following statements is TRUE?
- The uroscopy flask was the scientist's symbol.
 - Penicillin was discovered during World War One.
 - Life expectancy in Canada is higher than that in Japan.
 - Bacterial pneumonia caused most of the deaths in the 1918 flu.
 - None of the above statements are true.
17. Which of the following CORRECTLY matches the disease with its eradication method:
- Guinea worm disease and cheesecloth
 - Smallpox and Multi-Drug Therapy (MDT)
 - Leprosy and vaccination
 - Chagas disease and homeopathic remedies
 - a and b are correct
18. Who claimed that: "All drugs are poison and only the right dosage makes them stop being a poison."
- Sir Charles Scarborough
 - Jeanne Calment
 - Paracelsus
 - Hippocrates
 - William Withering
19. What is the average life expectancy in North America?
- 70
 - 75
 - 80
 - 85
 - 90
20. What country has the highest life expectancy?
- USA
 - Canada
 - UK
 - China
 - Japan
21. Hippocrates claimed that ox liver was a cure for night blindness. What substance in ox liver makes this a true statement?
- Vitamin A
 - Vitamin B2

- c. Vitamin B6
- d. Vitamin C
- e. Vitamin D

22. Which of the following plants can be used to induce vomiting:

- a. Foxglove
- b. Ipecac
- c. Aconite
- d. Saffron
- e. Poppy

23. Hundreds of years ago what was put into wine to try to give the body more iron?

- a. Forks
- b. Coins
- c. Nails
- d. Keys
- e. Rings

24. “Dropsy” was a term used to describe which medical condition?

- a. Diabetes
- b. Congestive heart failure
- c. Pneumonia
- d. Arthritis
- e. Celiac Disease

25. What type of disease is malaria?

- a. Parasitic disease
- b. Bacterial disease
- c. Viral disease
- d. Genetic disease
- e. None of the above

26. Paul Herman Muller was awarded a Nobel Prize for his discovery that:

- a. Quinine could be used as a treatment for malaria.
- b. Foxglove plant was useful as a treatment for dropsy.
- c. Mosquitoes could be genetically modified to become parasite-resistant.
- d. DDT has insecticidal properties that could be used to control malaria mosquitoes.
- e. DDT has harmful effects on bird reproduction.

27. What was the issue with the drug thalidomide?
- It required a large dose to be effective.
 - It was a potent teratogen.
 - It resulted in hair loss.
 - It was a potent carcinogen.
 - There were no significant side effects associated with thalidomide.
28. On average, how much money does it cost to get a new drug to market?
- \$2-3 million
 - \$20-30 million
 - \$200-300 million
 - \$2-3 billion
 - \$20-30 billion
29. The drug that currently has the highest monetary sales per year is used to treat:
- Cancer
 - Diabetes
 - Arthritis
 - Migraines
 - Hypertension
30. Which of the following is TRUE with respect to Chagas Disease?
- It is caused by the parasitic “kissing bug
 - Infection can be avoided by spraying insecticide
 - Symptoms can begin to show as late as 20 years after infection
 - Charles Darwin’s described this disease on The Voyage of the Beagle
 - All of the above are true.
31. What was the cause of the 1918 Pandemic?
- Influenza
 - Smallpox
 - Polio
 - Chagas disease
 - The war

32. Risk is a measurement that is the product of which three variables?
- Hazard, exposure, toxicity
 - Hazard, vulnerability, toxicity
 - Risk, exposure, vulnerability
 - Acceptable Daily Intake (ADI), exposure, hazard
 - None of the above
33. Which of the following is NOT an example of the “Natural does not equal safe” concept?
- Hemlock juice
 - Castor oil
 - Aspirin
 - Salmonella bacteria
 - Dart frogs
34. What was curare used for?
- Treating dropsy
 - Helping vines grow
 - Lethal injections
 - Muscle relaxation
 - All of the above
35. What is sulfanilamide?
- Newer and better version of penicillin against streptococcal infections
 - Carcinogen
 - Diethylene glycol
 - First antibiotic (before penicillin) against streptococcal infections
 - A teratogen
36. The lethal dose of botulin toxin (from the botulinum bacterium) is?
- 0.03 mcg
 - 10 mcg
 - 10 000 mcg
 - 100 000 mcg
 - 3 mcg
37. What is the definition of toxicology?
- The study of the effects of chemicals on living organisms.
 - The study of the effects of only toxic plants.
 - The study of the effects of only toxic insects.

- d. The study of the effects of only toxic seeds.
 - e. The study of the effects of only carcinogens.
38. Which of the following are difficulties associated with toxicology?
- a. Type of exposure
 - b. Biochemical individuality
 - c. Teratogenic effects
 - d. Acute and chronic effects
 - e. All of the Above
39. Which of the following drugs is associated with Charles Waterton?
- a. Acyclovir
 - b. Alcohol
 - c. Methotrexate
 - d. Ibuprofen
 - e. Curare
40. In 1938, President Roosevelt signed which of the following into law?
- a. The Food, Drug and Cosmetics Act
 - b. The Food, Vitamins and Drugs Act
 - c. The Food, Vitamins and Minerals Act
 - d. The Food, Drug and Creams Act
 - e. The Food, Drug and Recycling Act
41. Hormesis refers to:
- a. A biological process where you generate toxins.
 - b. A biological phenomenon where enzymes self destruct due to high doses of toxins.
 - c. A biological phenomenon where a beneficial effect results from exposure to low doses of an agent that is otherwise toxic at higher doses.
 - d. The effect of injecting hormones into your body.
 - e. The breakdown of hormones in your blood.
42. Which food item can sometimes contain the botulin toxin?
- a. Cassava root
 - b. Lima beans
 - c. Puffer fish
 - d. Garlic
 - e. None of the above

43. Which of the following is true about Phase 1 enzymes?
- They latch onto toxins and remove them from the body.
 - They attach oxygen atoms onto molecules to increase their water solubility.
 - When administered in small doses, they can help ease migraines.
 - The lethal dose is 10,000 mcg.
 - They are found only in mouse models and not in humans.
44. What was seldane used for?
- Antihypertensive drug to treat high blood pressure.
 - Antidepressant to treat depression.
 - Analgesic to treat pain.
 - Antibiotic to treat bacterial infection.
 - Antihistamine to treat allergies.
45. Identify the correct description of “Agent Orange”.
- Mixture of 2,4-D and 2,4,5-T with trace TCDD
 - Pure 2,4-D
 - Pure 2,4,5-T
 - Pure TCDD
 - None of the above
46. Dioxin can be produced by:
- Side reaction during synthesis of 2,4-D.
 - Side reaction during synthesis of 2,4,5-T.
 - Heating up plastic containers in a microwave.
 - Synthesizing chlorhexidine under low temperature conditions.
 - All of the above
47. Exposure to TCDD causes:
- Jaundice
 - Amnesia
 - Diabetes
 - Chloracne
 - Arthritis

48. Cassava root and lima beans contain:
- Cyanide
 - Tetrodotoxin
 - Botulin
 - Dioxin
 - Curare
49. Which of the following is TRUE regarding Botulin?
- It is more toxic than tetrodotoxin and cyanide.
 - The bacterium *Clostridium botulinum* produces this toxin.
 - Botulin can be injected to stop tremors.
 - It can be used to treat headaches.
 - All of the above are true.
50. Tequila and whisky make hangovers worse because they:
- Have a higher percent alcohol.
 - Contain substances called congeners.
 - Have a bad aftertaste.
 - Are usually mixed with other alcohols.
 - Are usually consumed in large amounts.
51. Dihydromyricetin (DHM) is a chemical that:
- Can be found in the Japanese raisin tree.
 - Has been proven to decrease hangover symptoms by 90%.
 - Worsens alcohol intoxication in rats.
 - Was only tested on rats but not humans.
 - Treats heart conditions.
52. What is the most effective way to avoid the symptoms of alcohol induced hangover?
- Drink water
 - Practice abstinence or moderation
 - Eat a greasy meal
 - Take a hangover cure
 - Go to sleep

53. There is a drug on the market that claims to be a hangover cure and contains Dihydromyricetin (DHM). Why was the study that looked at the effectiveness of this drug on humans unreliable?
- The study was too small.
 - There was no placebo control.
 - It was not a double-blind study.
 - The 50% decrease in hangover symptoms may be representative of the placebo effect.
 - All of the above
54. What is the best cure for hangover?
- Dihydromyricetin (DHM)
 - Congeners
 - Hamburgers
 - Pufferfish
 - None of the above
55. Hay fever is:
- An allergy to hay.
 - Properly termed allergic rhinitis.
 - Only affects those with asthma.
 - An allergy to farm animals.
 - Occurs when your body temperature exceeds 38°C.
56. The hygiene hypothesis suggests that:
- If you do not shower every day, you will develop asthma.
 - Living on a farm increases the risk of developing lung cancer.
 - You must clean your hands before each meal to avoid developing food allergies.
 - Children who attend daycare are less likely to develop allergies.
 - Infection with worms causes allergies.
57. Which of the following is true?
- Adrenaline is an allergen.
 - Adrenaline does not reverse anaphylactic reactions.
 - Adrenaline dilates your bronchial tubes.
 - Adrenaline is produced by the kidneys.
 - Adrenaline is also called dopamine.

58. Which of the following is true concerning cats?
- Black cats are more likely to cause allergies than other colored cats.
 - Allergies to cats are in fact allergies to a protein found in their dead skin cells.
 - You can have allergic symptoms upon your first exposure to a cat.
 - Kittens cannot trigger allergic reactions in humans.
 - Two of the above are true.
59. Your friend is having an asthma attack. What do you give them?
- Sudafed (pseudoephedrine)
 - Hydro-cortisol
 - Ventolin (salbutamol)
 - Allegra (fexofenadine)
 - Tylenol (acetaminophen)
60. The increase in allergy rates can be explained by all of the following, except:
- Increasing population
 - Greater chemical exposure
 - Hygiene hypothesis
 - Early vitamin use in children
 - Increased use of synthetic substances
61. Which of the following allergies is becoming more prevalent?
- Peanut
 - Sesame
 - Dog
 - Shellfish
 - Pollen
62. What chemical(s) is/are found in an EpiPen?
- Adrenaline (epinephrine) only
 - Benadryl (diphenhydramine) only
 - Advil (ibuprofen) and benadryl (diphenhydramine)
 - Advil (ibuprofen) and adrenaline (epinephrine)
 - Adrenaline (epinephrine) and benadryl (diphenhydramine)

63. Which of the following concerning asthma is true:
- Asthma symptoms cannot be triggered by allergies.
 - Histamines are released during an asthma attack.
 - During an asthma attack, it's important to immediately dilate the bronchial tubes.
 - Steroids can't prevent an asthma attack.
 - Exercise can make asthma symptoms go away.
64. Which of the following correctly describes the relationship between antihistamines and their effect on sedation?
- Benadryl (diphenhydramine); non-drowsy
 - Claritin (loratadine); non-drowsy
 - Seldane (terfenadine); drowsy
 - Allegra (fexofenadine); drowsy
 - Zyrtec (cetirizine); drowsy
65. People who suffer from allergies are:
- Less prone to asthma compared to someone without allergies.
 - More prone to asthma compared to someone without allergies.
 - As prone to asthma as someone without allergies.
 - Will never have asthma.
 - Will absolutely have asthma.
66. Which of the following is true?
- Adrenalin constricts the bronchi.
 - Adrenalin is produced naturally by the kidneys.
 - Adrenalin does not reverse anaphylactic reactions.
 - Benadryl does not reverse anaphylactic reactions.
 - None of the above are true.
67. Since 1980, allergy rates have ____ and asthma rates have ____:
- Allergy rates have decreased, while asthma rates have increased
 - Allergy and asthma rates have both remained the same
 - Allergy and asthma rates have both decreased
 - Allergy rates have increased, while asthma rates have decreased
 - Allergy rates have increased and asthma rates have doubled

68. Which of the following is true?
- Allergic rhinitis is most commonly caused by exposure to hay.
 - Animal allergies are typically caused by the animal shedding dead skin cells.
 - Allergies can occur upon first exposure to the allergen.
 - Animal allergies are typically caused by proteins in the animal hair.
 - All of the above are true.
69. Which of the following is true regarding contact dermatitis vs. immune system mediated dermatitis?
- Developing a rash after working with vinegar all day is an example of immune system mediated dermatitis.
 - A reaction to poison ivy is an example of contact dermatitis.
 - Nickel reactions are not immune system mediated dermatitis because only proteins can be allergens.
 - Contact dermatitis is due to skin irritants and does not involve IgE antibodies.
 - All of the above are true.
70. Which of the following is true regarding Allergy Immunotherapy?
- Subcutaneous immunotherapy involves rubbing small amounts of allergen into the skin so that it absorbs without invoking the IgE immune response.
 - Subcutaneous immunotherapy can be done at home, reducing total visits to the doctor.
 - Sublingual therapy can be self administered at home, following a doctor's instructions.
 - Sublingual therapy is more commonly known as getting "allergy shots".
 - Allergy immunotherapy is 99% effective.
71. The definition of an allergy is:
- A condition in which your airways narrow and swell and produce extra mucus.
 - A condition that makes your skin red and itchy.
 - A condition in which there is inflammation and swelling of the mucous membrane of the nose.
 - Any adverse reaction to substances that are normally harmless.
 - None of the above.
72. Which of the following is true:
- Poorer countries have a higher prevalence of allergies.
 - Anaphylaxis refers to a rapidly progressing, life threatening allergic reaction.
 - Atopy refers to the genetic tendency to develop very rare allergic diseases.
 - Asthma rates have decreased significantly since 1980.

- e. Children who at the age of 1 ate fish at least once a month were 30% more likely to develop hay fever by age 12.
73. Children who attended daycare are _____ likely to develop allergies and _____ likely to develop leukemia or Hodgkin's lymphoma.
- a. Less likely to develop allergies and less likely to develop leukemia or Hodgkin's lymphoma.
 - b. Less likely to develop allergies and more likely to develop leukemia or Hodgkin's lymphoma.
 - c. More likely to develop allergies and less likely to develop leukemia or Hodgkin's lymphoma.
 - d. More likely to develop allergies and more likely to develop leukemia or Hodgkin's lymphoma.
 - e. Attending daycare has no effect on the likelihood of developing allergies, leukemia, or Hodgkin's lymphoma.
74. Which of the following is NOT one of the most common food allergens?
- a. Soy
 - b. Peanuts
 - c. Dairy
 - d. Cow meat
 - e. Shellfish
75. Which of the following is true concerning a study on peanut allergy in children published in the New England journal of Medicine:
- a. 372 children aged 4-17 were given capsules of peanut flour starting at 0.5 mg peanut protein and increasing to 300 mg, the equivalent of 1 peanut.
 - b. After 24 weeks, 2 thirds were able to tolerate a peanut protein dose equivalent to 2 peanuts, with absolutely no reactions.
 - c. The goal of the study was to cure children of their allergy to peanuts.
 - d. After the study, the children were able to eat peanuts in the same capacities as others with no allergic reactions.
 - e. None of the above.

ANSWERS:

- 1) B
- 2) C
- 3) B
- 4) C
- 5) D
- 6) E
- 7) B
- 8) A
- 9) C
- 10) D
- 11) E
- 12) B
- 13) B
- 14) C
- 15) B
- 16) D
- 17) A
- 18) C
- 19) C
- 20) E
- 21) A
- 22) B
- 23) C
- 24) B
- 25) A
- 26) D
- 27) B
- 28) D
- 29) C
- 30) E
- 31) A
- 32) E
- 33) C
- 34) D
- 35) D
- 36) A
- 37) A
- 38) E

- 39) E
- 40) A
- 41) C
- 42) D
- 43) B
- 44) E
- 45) A
- 46) B
- 47) D
- 48) A
- 49) E
- 50) B
- 51) A
- 52) B
- 53) E
- 54) E
- 55) B
- 56) D
- 57) C
- 58) E (a and b are correct)
- 59) C
- 60) D
- 61) B
- 62) A
- 63) C
- 64) B
- 65) B
- 66) D
- 67) E
- 68) B
- 69) D
- 70) C
- 71) D
- 72) B
- 73) A
- 74) D
- 75) A