Hi guys, I'm just starting with the first picture and working my way down. Someone should probably check over the answers! - I'm checking (Mitali)!

1. What type of cancer kills the most people in North America?
   - **a) Lung**
   - b) Brain
   - c) Stomach
   - d) Skin

2. What are the three most important risk factors for developing fatal cancers?
   - a) Pesticides, dioxin, and radiation
   - b) Tobacco, pesticides, and sunlight
   - **c) Tobacco, poor diet, and obesity**
   - d) Viruses, tobacco, and pesticides

3. Which of the following does not contain antihistamines? (This is a midterm 1 question I think)
   - a) Cold medication
   - **b) Diet pills**
   - c) Sleeping pills
   - d) Anti-nausea medication

4. The mortality rate for which condition has not changed in the last 60 years?
   - a) Heart attack
   - b) Stroke
   - c) Infection
   - **d) Cancer**

5. Why are hemagglutinin (H) and neuraminidase (N) used to classify flu viruses? (MT1!!!) - <u>also in vaccines lecture</u>
   - **a) They are on the outside of the virus**
   - b) They are on the inside of the virus and remain stable
   - c) The letters are easy to remember
   - d) The standardized FDA test requires it

6. Which of the following substances found in tobacco is the most dangerous?
   - **a) Carbon monoxide**
   - b) Polonium
   - c) Nicotine
   - d) Ammonia

7. Why did the cancer drug Taxol almost create an environmental disaster?
   a) It could only be obtained from the bark of a rare tree
   b) It was spilled in an industrial accident
   c) The factory making it was caught dumping waste illegally
   d) It was made in a country with no environmental regulations

8. What is the most likely way that random mutation will "stimulate" the cell's division cycle?
   a) Activate a protein so that it functions better than normal
   b) Damage an "off switch" so that it no longer functions
   c) Mutate a protein so that it performs several functions
   d) Alter a protein so that is performs a new function

9. Why do some viruses cause cancer?
   a) They cause cells to become immortal
   b) They stimulate cell growth
   c) They prevent apoptosis
   d) They suppress immune function

10. On average, how many mutations are required to cause cancer?
   a) 10 per year
   b) 10 per gene
   c) 10 per cell
   d) 10 per tissue

11. What percentage of fatal cancers are caused by smoking?
   a) 2%
   b) 15%
   c) 30%
   d) 70%

12. Which performance enhancing substance is currently the most difficult to detect?
   a) Testosterone
   b) Erythropoietin
   c) Amphetamines
   d) Tetrahydrogestrinone

13. How do anabolic steroids benefit an athlete?
   a) Cause the body to build extra muscle cells

b) Enlarge existing muscle cells
c) Speed repair of damaged muscle fibers
d) Protect muscle cells from damage

14. Why are drugs given to horses that are involved in racing?
    a) To make them run faster
    b) To increase their endurance
    c) To control their behaviour
    d) To make them run slower

15. Why were amphetamines given to Allied soldiers during WWII? Either A or C - i think its A
    a) Prevent drowsiness
    b) Suppress appetite
    c) Increase aggression
    d) Improve strength

16. Which country first used steroids for sports training?
    a) USA
    b) Soviet Union
    c) East Germany
    d) Netherlands

17. How is recombinant human protein made?
    a) Insert human gene into bacteria
    b) Mutate human cells to produce extra protein
    c) Combine human and bacterial protein
    d) Alter the DNA in a human cell to make more protein

18. What does erythropoietin (EPO) do in the body?
    a) Transports extra oxygen in the blood
    b) Stimulate the manufacture of red blood cells
    c) Increase the oxygen carrying capacity of red blood cells
    d) Enhance the uptake of oxygen by the muscles

19. What does the size of a peak from a gas chromatograph (GC) tell you?
    a) Weight of a molecule
    b) Type of molecules present
    c) Amount of molecules present
    d) Fingerprint of a molecule

20. What drug is used to mask steroid use?
    a) Androstenone
    b) Stanozolol
    c) Paracetamol
    d) Epitestosterone

21. How long does the process of blood doping take (assuming the athlete uses their own blood)?
    a) 3 weeks
    b) 1 month
    c) 3 months
    d) 1 week

22. What is the means by which sulfa drugs inhibit bacterial growth?
    a) Sulfa molecules block the assembly of bacterial cell walls
    b) Sulfa drugs become stuck in the enzyme that makes coenzyme F
    c) Sulfa drugs contain sulfur which is toxic to bacteria
    d) Sulfa drugs react chemically with bacterial DNA

23. Which of the following statements regarding penicillin is true?
    a) The major side effect from penicillin is diarrhea
    b) Long term penicillin use can lead to calcium loss
    c) The major side effect is allergy
    d) Penicillin drugs can damage the liver

24. In the year 1900, what was the leading cause of death in Canada?
    a) Infection
    b) Heart attack
    c) Cancer
    d) Accidents

25. When were most antibiotics discovered?
    a) 1920-1939
    b) 1940-1959
    c) 1980-1999
    d) 1960-1979

26. What was the major barrier to developing Taxol? Either B or C
    a) The high toxicity of Taxol required special dosing
    b) The rarity of the Taxol tree limited the quantities available
    c) Harvesting trees to extract Taxol was bad for the environment
    d) Overcoming fears of genetically modified trees to produce Taxol

27. Why are tumors difficult to treat with drugs?
    a) Tumor cells are too similar to normal cells
    b) Tumor cells are immortal and difficult to kill
    c) Tumor cells metabolize drugs very quickly
    d) Tumor cells grow much faster than normal cells

28. What is the basis for selectivity in cancer chemotherapy?
    a) Tumor cells are genetically different from normal cells
    b) Tumor cells are structurally different from normal cells
    c) Tumor cells are biochemically different from normal cells
    d) Tumor cells grow much faster than normal cells

29. Which statement about tumor formation is true?
    a) A tumor requires a viral infection in order to form
    b) A tumor requires about 20 years to form
    c) Tumor formation is mainly due to industrial chemicals
    d) Tumor formation is mainly the result of tissue damage

30. Which of the following is disabled during tumor formation?
    a) Cellular respiration
    b) Cellular self-destruction
    c) Cellular differentiation
    d) Cellular metabolism

31. How was the cancer drug Cisplatin discovered?
    a) Passing an electric current through bacteria stopped cell division
    b) From an accidental release of chemical weapons
    c) Through a large government sponsored research effort
    d) By cleverly designing drugs to selectively destroy cancer cells

32. Which food, when consumed in large amounts, increases your risk of cancer?
    a) Salad
    b) Spaghetti

c) Steak

d) Sushi

33. Why is carbon monoxide (CO) dangerous?

a) It blocks nerve impulses

b) It impedes metabolism

c) It suppresses immune function

d) It interferes with oxygen transport

34. Which is not part of the scientific definition of addictiveness?

a) Dependence

b) Withdrawal

c) Tolerance

d) Intoxication

35. Why is nicotine potentially dangerous?

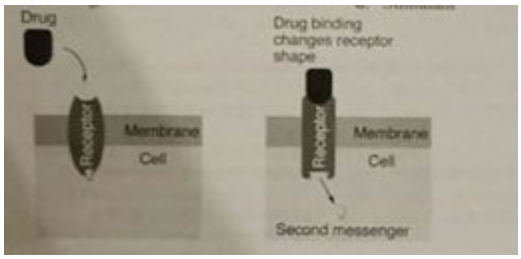
a) It blocks nerve impulses

b) It stimulates the heart

c) It interferes with oxygen transport

d) It suppresses immune function

36. The following depicts the action of what kind of drug?



a) Agonist

b) Antagonist

c) Inhibitor

d) Stimulant

37. What substance in e-cigarettes is probably the most dangerous?

a) Nicotine

b) Carbonyls

c) Glycerol

d) Acrolein

38. What happens when a messenger binds to a receptor?
    a) The receptor changes shape
    b) The receptor becomes energized
    c) The receptor moves to a different location
    d) The receptor release energy

39. Which of the following is not a component of e-fluid?
    a) Solvent
    b) Flavour
    c) Artificial colour
    d) Nicotine

40. What do antibodies stick to?
    a) Epitopes
    b) Allosterics
    c) Agostic sites
    d) Leukocytes

41. What is the most prevalent cause of death due to tobacco smoking?
    a) Lung cancer
    b) Heart attack
    c) Stroke
    d) Emphysema

42. Which of the following describes the effect of a high dose of nicotine?
    a) Acetylcholine agonist causing relaxation
    b) Acetylcholine antagonist causing relaxation
    c) Acetylcholine agonist causing stimulation
    d) Acetylcholine antagonist causing stimulation

43. Why is vaping potentially dangerous to children?
    a) Kids might drink the e-fluid
    b) The liquid is easily absorbed through a child's skin
    c) Children can absorb nicotine from vapour droplets
    d) The e-fluid is flammable

44. Why is ammonia added to cigarette tobacco?
    a) Removes the bitter tasting acids
    b) Removes the corrosive acids and reduce throat irritation

c) Removes acids that destroy nicotine which increases nicotine delivery

d) Removes toxic acids and produces a safer cigarette

45. What type of cancer can be prevented with a vaccine?

a) Cervical

b) Brain

c) Lung

d) Pancreatic

46. What type of vaccine leaves a scar?

a) Measles

b) Polio

c) Influenza

d) Smallpox

47. What factor tends to vastly inflate out perception of risk?

a) Toxicity

b) Dread

c) Probability

d) Prior experience

48. What two factors contribute to risk from drugs?

a) Exposure and toxicity

b) Side effects and toxicity

c) Exposure and side effects

d) Toxicity and hazard

49. What is the probability of something causing harm called?

a) Risk

b) Hazard

c) Danger

d) Concern

50. Which of the following could be considered a hazard?

a) Taking prescription medication

b) Paint stored in your house

c) Drinking water

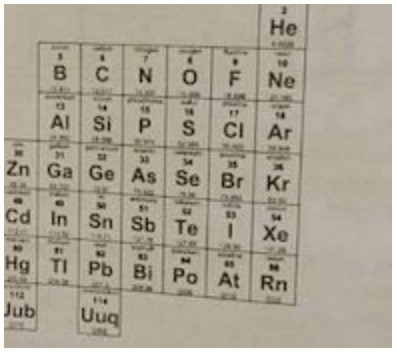
d) Walking in sunlight

51. Which of the following represents the greatest risk?
    a) Living near an industrial area
    b) Driving in your car
    c) Getting vaccinated
    d) Eating genetically modified food

60. What type of microbe is affected by antibiotics?
    a) Bacteria
    b) Viruses
    c) Fungi
    d) Archaea

61. Why does penicillin cause allergies?
    a) The molecular structure stimulates
    b) The drug resembles
    c) It reacts chemically with enzymes
    d) It causes a metabolic imbalance

62. Which two elements have similar chemical properties?



    a) Aluminum (Al) and oxygen (O)
    b) Nitrogen (N) and chlorine (Cl)
    c) Silicon (Si) and carbon (C)
    d) Phosphorus (P) and boron (B)

63. What food supply was important for large scale penicillin manufacture?
    a) Milk
    b) Corn steep liquor
    c) Fermented molasses
    d) Meat by-products

64. What technique must be used to treat necrotizing fasciitis?

a) Debridement
b) Direct infusion
c) Trituration
d) Elution

65. Which of the following is caused by cigarette smoking?
a) Cervical cancer
b) Aged skin and wrinkles
c) Weight loss
d) High cholesterol

66. How much nicotine is delivered to a smoker from each cigarette?
a) 2 mg
b) 6 mg
c) 20 mg
d) 60 mg

67. Why is Marinol (prescription THC) often given to cancer patients?
a) Reduce anxiety
b) Kill cancer cells
c) Increase appetite
d) Help them sleep

68. Which of the following is the most dangerous way to consume cannabis (assuming equal doses of THC)? Idk this one
a) Smoking
b) Edibles
c) Vaping
d) Cannabis oil

69. What condition has recently been associated with heavy cannabis use?
a) Schizophrenia
b) Depression
c) Bipolar disorder
d) Anxiety

70. Which of the following represents the greatest risk?
a) Living near a nuclear reactor
b) Eating GMO foods

c) Taking antibiotics
d) Smoking cigarettes

71. How does penicillin kill bacteria?
a) Prevents cell wall manufacture
b) Damages their DNA
c) Interferes with protein synthesis
d) Prevents the conversion of sugar into energy

72. Why does penicillin cause allergies?
a) The molecular structure stimulates immune function
b) The drug resembles the allergen found in peanuts
c) It reacts chemically with enzymes in the person's body
d) It causes a metabolic imbalance

73. Which of the following statements about modern penicillin type drugs is false?
a) Most penicillin drugs sold today are semi-synthetic
b) Natural penicillin drugs can only be given by injection
c) Most penicillin drugs sold today are natural source
d) Synthetic penicillins have longer shelf-lies than natural source ones

74. One reason the pharmaceutical industry is NOT interested in developing new antibiotics is:
either A OR D
a) They do not want to endanger their current market
b) There is no money for research
c) All the good ones have already been discovered
d) Doctors won't prescribe them so the market is small

75. Why are nosocomial infections especially dangerous?
a) Hyper fast bacterial growth
b) Antibiotic resistance
c) Airborne spread
d) Highly invasive

76. What is the largest contributor to the creation of antibiotic resistance?
a) Patients don't follow the instructions
b) Over-prescription by doctors
c) Adding antibiotics to animal feed
d) Adding antibiotics to household products

77. Why was Prontosil a poor selling drug? IDK THIS ONE
    a) It caused allergic reactions
    b) It had to be injected in large volumes
    c) It turned human skin red
    d) It caused necrosis leading to amputation

78. What was placed in the masks worn by plague doctors?
    a) Flowers
    b) Charcoal
    c) Crucifix
    d) Cheese

79. Which of the following is associated with steroid use?
    1) Faster reflexes
    2) Improved vision
    3) Enlarged vocal chords
    4) Increased confidence

78. What is the significance of the peak at 86 units?
    - Weight of the molecule
    - Weight of an impurity
    - Amount of substance present
    - Weight of a molecular fragment

79.what is actually measured when testing for steroid use?
    - Amount of testosterone in the sample
    - Ratio of testosterone to epitestosterone
    - Amount of epitestosterone in sample
    - Conversion of testosterone to epitestosterone

80. How is the drug erythropoietin (EPO) manufactured?
    1. Isolated from animal blood
    2. Grown by genetically modified bacteria
    3. Using a substance extracted from plant roots
    4. By combining chemicals found in oil

81. What tool is used to genetically modify a bacteria?
    1. Codon

2. Plasmid
3. Isomer
4. modifier

82. What is blood doping?
    1. Injecting extra red blood cells into an athlete just before competition
    2. The practice of injecting steroids directly into the blood stream
    3. Masking the preasence of steroids by injecting drugs into the blood.
    4. Giving blood plasma to an athlete to increase endurance.

83. What kind of cell carriers an IgM antibody?
    1. Mast cell
    2. B cell
    3. Helper T cell
    4. Killer T cell

84. What is displayed on the outside of a killer T cell?
    1. CD8 antibody
    2. CD8 receptor
    3. CD4 receptor
    4. CD4 antibody

85. What do most vaccines contain?
    1. Similar species microbe to the disease microbe.
    2. Genetically altered microbes
    3. Dead or attenuated disease microbe
    4. Small amount of disease microbe

86. What metabolic product is squalene converted into in the human body?
    1. Steroids
    2. Neurotransmitters
    3. Prostaglandins
    4. Histamines

87. What is in a genetically engineered (recombinant) vaccine?
    1. Gene from the target virus
    2. Genetically modified virus
    3. Protein from the target virus
    4. Antibody against the target virus

89. What is thimerosal?
    1. Substance that produces stronger immunity after vaccination
    2. Substance used to alter microbes in vaccines
    3. The altered organism in a vaccine
    4. A preservative used in vaccines

90.what is the function of the adaptive immune system?
    1. Provide an immediate and specific response to microbes
    2. Provide a delayed and specific response to microbes
    3. Provide a delayed but nonspecific response to microbes
    4. Provide an immediate but nonspecific response to microbes

91. How does the immune system recognize virally infected cells?
    1. T cells stick to MHC molecules carrying viral protein
    2. B cells stick to MHC molecules carrying viral protein
    3. T cells stick to MHC molecules carrying viral DNA
    4. B cells stick to MHC molecules carrying viral DNA

92. Which of the following disorders was blamed on the MF59 vaccine additive?
    1. Gulf war syndrome
    2. Stockholm syndrome
    3. Rye syndrome
    4. Tourette syndrome

93. In the year 1900 what was the leading cause of death in canada?
    1. **Infection**
    2. Heart attack
    3. Cancer
    4. accidents

94. What was the key experiment performed by Florey and chain that proved penicillin could be used to treat infection?
    1. They gave the drug to a healthy person to show it was safe for human consumption
    2. They gave the drug to healthy animals to show it was safe
    3. They gave the drug to infected animals to show that the infection can be cured
    4. **They used the drug to selectively kill various species of pathogenic bacteria**

95. Why are the elements in the periodic table arranged in the following shape?
    1. The element in each horizontal row have similar chemical properties

2. The elements in each vertical column have similar chemical properties
3. The elements in each square block have similar chemical properties
4. The elements are listed in order of discovery.

96. which of the following developments made cigarettes dangerous?
    1. Automated cigarette rolling
    2. Adding ammonia
    3. Flue cured tobacco
    4. Chemical additives

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

97. Why does eating increase your risk of getting cancer?
1. The neat is grown using hormones and steroids that cause cancer in humans
2. The animal proteins mutate your cells and cause cancer
3. Cancer cells in the meat can infect your body
4. **Cooking meat creates chemicals that cause cancer**

98. What is the proper term for programmed cell death?
1. Senescence
2. Termination
3. **Apoptosis**
4. Climacteris

99. How many genes do normal cells have?
1. **23,000**
2. 230,000
3. 2,300,000
4. 2300

100. What radioactive metal could be found in children's toys in the 1950's?
1. Uranium
2. Plutonium
3. Radium
4. Polonium

101. Why do olympic athletes inject themselves with epitestosterone?

1. To mask steroid use
2. To enhance steroid function
3. To block steroid effects
4. To improve strength and endurance

102. During world war 2, what was the major reason the allies started giving amphetamines to soldiers?

1. Increase their confidence and aggression
2. Suppress their appetite and thirst
3. Increase their strength and agility
4. **Improve concentration and wakefulness** (not sure)

103. Who were the first patients to be given steroids for medical purposes?

1. Cancer patient
2. Concentration camp inmates
3. Wounded soldiers
4. Injured athletes

104. Who was most responsible for the modern change in attitudes towards drug use in sports?

1. Ben johnson
2. Marion jones
3. Barry bonds
4. Mark McGuire

105. Why did the international olympic committee restrict drug use by athletes during competition?

1. Drugs create unfair competitive advantages
2. Using drugs was unethical
3. The coaches were not qualified to administer drugs
4. **Drugs were harmful to the health of the athletes**