



Pre Evaluation Medical Technology 2005



Directions For Numbers 1-25 : Read each of the following multiple-choice items and the possible answers carefully. Mark the letter of the correct answer on your answer sheet or as instructed by your teacher. **Remember: Make no marks on this test.**

1

Which is **NOT** an impact of modern medical technology on society?

- A High medical costs in advanced nations
- B Increased human lifespan
- C Rapid spread of the AIDS virus
- D Elimination of smallpox

2

Which development of technology was **MOST** important for eliminating the “black death” (bubonic plague) in San Francisco in 1900?

- A Rat trap
- B X-ray machine
- C Hypodermic needle
- D Mosquito repellent

3

A scientist or engineer developing medical technology equipment might use which problem solving method?

- A Build the design, determine what the problem is, and then evaluate.
- B Define the problem, research and evaluate all solutions, use the best idea, and then evaluate.
- C Research, evaluate, build the solution, and then brainstorm ideas.
- D Brainstorm ideas, pick the easiest one, and then build the design.

4

The CT scan process is a modern development from earlier technology of simple X-rays. Which statement is **NOT** true of this new CT scan technology?

- A It can find smaller cancers.
- B It uses safer sound waves.
- C Its images appear as slices of the body.
- D The scanner is computer controlled.

5

Advances in which technology, outside of medicine, have increased the danger of mass epidemics and made some diseases more difficult to stop?

- A Communication
- B Manufacturing
- C Transportation
- D Construction

6

Which major advance in medical technology was developed in the 1950's?

- A CT scanner
- B Electron microscope
- C Laser eye surgery
- D Polio vaccine

7

What is the meaning of the term triage?

- A The process of treating the most urgent cases first
- B Archaic treatment involving drilling holes in the skull
- C The common practice of getting three separate opinions on proposed treatments
- D Combining three vaccines into a single shot for infants

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- 8** When a patient is given a prescription for an antibiotic drug, it is important for them to take the drug exactly as directed. Which statement is incorrect then?
- A Stop taking the drugs once you feel better.
 - B There could be side effects.
 - C Taking too much of the drug could be hazardous.
 - D By stopping your treatment earlier than prescribed, some bacteria could be left alive to make you sick again.
- 9** Which is **NOT** a topic of debate within the medical research community at the present time?
- A Fluoridation of water
 - B Frequency of the use of antibiotics
 - C Ethical practice in DNA research
 - D Pasteurization of milk products
- 10** Some technologies bring both good and bad aspects. The ultrasound machine, DNA research, cloning research, and high cost advanced procedures are all beneficial advances of medical technology, but they also share which concern?
- A Many people have had to die for each to succeed.
 - B They all cause people to live so long that they cannot help themselves.
 - C They can be used in situations that present a moral dilemma.
 - D They could cause more diseases to spread worldwide.
- 11** What must diabetics monitor periodically from samples of their blood?
- A Iron
 - B Blood pressure
 - C Blood sugar
 - D Blood platelets
- 12** Which grouping includes the primary causes of death for students in your age range?
- A Age, inherited traits, cancer
 - B Viral infections, suicide, asthma
 - C Accidents, cancer, homicide
 - D Diet, cancer, homicide
- 13** Which use of \$1000 would save the **MOST** lives immediately?
- A Buying an ultrasound machine
 - B Buying cholera vaccine
 - C Paying for ICU treatment
 - D Investing in cancer research
- 14** Which development is more important in the fight against the spread of disease?
- A Urban sewage systems
 - B Laser surgery
 - C MRI scanning
 - D EKG machines
- 15** Which action can **NOT** be performed with an optical microscope?
- A Examining blood cells
 - B Studying a virus
 - C Studying the growth of bacteria
 - D Examining a tissue culture

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16 The vitamin supplement that is added to milk to help prevent rickets disease is?

- A Vitamin A
- B Vitamin B
- C Vitamin E
- D Vitamin D

17 In diagnosing a strep throat, a doctor will check each of the following **EXCEPT**:

- A Looking deep into the back of the throat.
- B Feel for swollen glands around your neck area.
- C Extract a culture sample from your throat.
- D Take a blood sample.

18 In 1816, Laennec invented a device that we still use today in a more modern form. His name for the invention translates into "I see the chest." What important device of medical technology did he invent?

- A X-ray machine
- B Ultrasound machine
- C Stethoscope
- D Endoscope

19 What is the controversy surrounding the long established procedure of using amalgam fillings in dental cavities?

- A The cost of silver is high
- B There is fear of mercury poisoning
- C The fillings rot out quickly
- D There is fear of overexposure to the cement

20 What "miracle drug" invented in 1897 could have saved thousands of lives earlier that century in the mid 1800s because of its ability to reduce high fever?

- A Aspirin
- B Milk of magnesia
- C Pepto-Bismol
- D Benedryl

21 One child dies and 50 more are injured every day in bicycle accidents. Helmets could reduce these risks by 85%. If everyone wore their helmet, how many days would it take to save 85 lives?

- A 2
- B 50
- C 100
- D 365

Venn Diagram of Human Blood Type

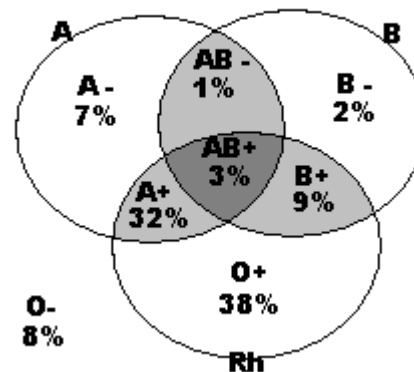


Fig.MT08.01

22 According to Fig.MT08.01, what is the **MOST** common blood type in humans?

- A AB+
- B O+
- C Rh
- D Cannot be determined from the diagram

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- 23** According to Fig.MT08.01, what percentage of the population is Rh+?
- A 3%
 - B 38%
 - C 82%
 - D 92%
- 24** According to Fig.MT08.01, which blood type can donate to all of the others (universal donor)?
- A A-
 - B B-
 - C AB+
 - D O-
- 25** Which is **NOT** a common application of mathematics in medicine?
- A Predicting the spread of disease
 - B Calculating the dosages of medicine
 - C Statistically determining when to vaccinate
 - D Extracting DNA

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?	⊙	Answer/ Scale	Objective	?	⊙	Answer/ Scale	Objective
1	1	C	MT08.03 Technology	14	14	A	MT08.03 Technology
2	2	A	MT08.03 Technology	15	15	B	MT08.03 Technology
3	3	B	MT08.03 Technology	16	16	D	MT08.02 Science
4	4	B	MT08.03 Technology	17	17	D	MT08.02 Science
5	5	C	MT08.03 Technology	18	18	C	MT08.02 Science
6	6	D	MT08.03 Technology	19	19	B	MT08.02 Science
7	7	A	MT08.03 Technology	20	20	A	MT08.02 Science
8	8	A	MT08.03 Technology	21	21	C	MT08.01 Math
9	9	D	MT08.03 Technology	22	22	B	MT08.01 Math
10	10	C	MT08.03 Technology	23	23	C	MT08.01 Math
11	11	C	MT08.03 Technology	24	24	D	MT08.01 Math
12	12	C	MT08.03 Technology	25	25	D	MT08.01 Math
13	13	B	MT08.03 Technology				

Minimum points
required to achieve
mastery category

Total questions on test: 25

Objectives measured: 3	Items	Points	●	◐	Questions measuring this objective
MT08.03 Technology	15	15	11	10	1 2 3 4 5 6 7 8 9 10 11
MT08.03 Technology					12 13 14 15
MT08.02 Science	5	5	4	3	16 17 18 19 20
MT08.01 Math	5	5	4	3	21 22 23 24 25
Totals		25	19	16	

MT08

? = Test Question Number ⊙ = line on GP Form

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Items used in test

?	Item name	?	Item name	?	Item name
1	MT08.03.00.06	10	MT08.03.00.12	18	MT08.02.00.03
2	MT08.03.00.13	11	MT08.03.00.03	19	MT08.02.00.04
3	MT08.03.00.02	12	MT08.03.00.04	20	MT08.02.00.05
4	MT08.03.00.05	13	MT08.03.00.07	21	MT08.01.00.04
5	MT08.03.00.10	14	MT08.03.00.11	22	MT08.01.00.01
6	MT08.03.00.09	15	MT08.03.00.01	23	MT08.01.00.03
7	MT08.03.00.15	16	MT08.02.00.01	24	MT08.01.00.02
8	MT08.03.00.08	17	MT08.02.00.02	25	MT08.01.00.05
9	MT08.03.00.14				

MT08

? = Test Question Number ● = line on GP Form