

ENGR 192/292 A
Entrepreneurial Opportunities in Healthcare and Life Sciences
Exam #1
ANSWER SHEET DUE OCTOBER 20 BY START OF CLASS

For each of the questions, write the letter corresponding to your answer in the appropriate box on the answer sheet (attached). All questions are based upon the lectures or textbook, and you may use these as references. You may NOT use any living being as a source of information.

1. Which was NOT discussed as a reason for improved life expectancy over the last 100 years?
 - a. Improvements in public health
 - b. The increasing use of organic foods
 - c. Better access to healthcare
 - d. More effective pharmaceuticals
2. Choose the answer that is TRUE concerning the plague in the 1300's:
 - a. The carrier of the disease was not known
 - b. It started in England and moved across Europe
 - c. There were fewer deaths in towns that quarantined their populations
 - d. Physicians of the time knew that microbial organisms were the cause of the disease
3. Choose the statement that is TRUE:
 - a. Louis Pasteur disproved the theory of spontaneous generation
 - b. Louis Pasteur's work followed the discoveries of Robert Koch
 - c. Van Leeuwenhoek's microscope was possible because of his knowledge of metallurgy
 - d. Alexander Fleming was able to mass-produce penicillin within three years of its discovery in 1928
4. The discovery that DNA was the molecule that carried genetic information was discovered by:
 - a. Lister
 - b. McClintock
 - c. Watson and Crick
 - d. Avery, MacLeod and McCarty
5. Choose the statement that BEST describes the changes in life expectancy from 1900 to the present:
 - a. Infectious diseases continued to be the major cause of mortality
 - b. The causes of death changed, but the mortality rate per 100,000 of population stayed essentially the same
 - c. Diseases of aging became the predominant cause of death
 - d. Deaths from chronic diseases decreased
6. Choose the statement that is TRUE:
 - a. After the 1930's, insurance was offered by employers as a benefit to attract and retain workers
 - b. "True insurance" includes coverage for treatment in the doctor's office
 - c. After the 1950's, Hospitals became the predominant location for primary care
 - d. The Federal Government is the predominant source of healthcare insurance in the United States
7. Choose the statement that is FALSE:
 - a. The United States rations healthcare through indirect means
 - b. While the United States has the highest per capita expenditure for healthcare, it leads the developed world in most key measures of health
 - c. The uninsured population in the U.S. is about 15%
 - d. Insurance in the United Kingdom and Canada is compulsory

8. Which of the following has the highest percentage of growth in healthcare expenditures?
 - a. Prescription Drugs
 - b. Physician Services
 - c. Hospital Care
 - d. Nursing home care
9. Which of the following has the highest level of healthcare expenditures?
 - a. Prescription Drugs
 - b. Physician Services
 - c. Hospital Care
 - d. Nursing Home Care
10. Which of the following is NOT considered a critical goal for healthcare reform in the U.S.?
 - a. Ability to continue to pick your own doctor
 - b. Reduce the costs of care
 - c. Provide coverage for everyone
 - d. Replace all private insurance with a single-payer system
11. Physician offices, advertising companies, and tax accountants are examples of:
 - a. Value-added process businesses
 - b. Solution shop businesses
 - c. Facilitated network businesses
 - d. Social capital businesses
12. Value-added process businesses are characterized by:
 - a. The need for many experts
 - b. Reproducible, predictable costs and inputs
 - c. Revenues primarily from transaction fees
 - d. Creating customized products for individual clients
13. Choose the BEST definition of entrepreneurship:
 - a. Starting new businesses with new technology or knowledge
 - b. Building businesses characterized by “high risk, high reward”
 - c. Shifting assets and resources from lower to higher value uses
 - d. Increasing corporate value by reducing costs
14. Choose the statement that is TRUE:
 - a. Innovation may be a process or product
 - b. Innovation is always associated with a new invention
 - c. Innovation by definition is a high risk activity
 - d. Innovation only occurs in small, fast-growing companies
15. Acme Inc. created a widget that was sold and marketed to companies that made computers. However, the widget became a popular component in companies that made washing machines. Acme created a new sales force and distribution channel to respond to the new opportunity. This is an example of innovation based on:
 - a. A change in demographics
 - b. A process need
 - c. An incongruity
 - d. An unexpected success
16. Acme Inc. needed to increase their profitability, and created a new computer program that helped them better control their labor scheduling and optimized the production line, lowering their costs per unit. This is an example of an innovation based on:
 - a. A change in demographics
 - b. A process need
 - c. An incongruity
 - d. An unexpected success

17. Which of the following is INCORRECT regarding innovation based on new knowledge:
- May require a convergence of technologies to succeed
 - Is associated with high risk and high failure rates
 - Is usually a fast path to creating a new product or service
 - Is commonly associated with scientific discoveries
18. “Clean” energy companies (e.g., solar panels and automotive hybrid technologies) represent the convergence of which two types of innovation:
- The unexpected success and a process need
 - New knowledge and a change of perception or mood
 - An incongruity and an unexpected failure
 - A change in demographics and a process need
19. Choose the statement about disruptive innovation that is NOT correct:
- It makes products and services simpler and more affordable
 - It is not a breakthrough improvement on the original product or service
 - It is as good or better than the original product or service
 - It usually creates a new market or new group of customers
20. Choose the statement that is NOT correct:
- Customers are always able to utilize new sustaining innovations
 - Innovation may be either disruptive or sustaining
 - Disruptive innovations may be fatal to the market leaders
 - Sustaining innovation is a strength of industry leaders
21. Christensen describes how a chain of fast-food restaurants innovated based on “jobs that needed doing”. Which of the following statements is NOT correct:
- People were buying milkshakes in the early morning because they wanted something to snack on while driving a car
 - Sometimes milkshakes were “hired” by parents to provide a treat for the kids
 - The company was able to innovate to increase the shake business by giving them more variety and making them faster to purchase at the drive-through
 - Bagels and cream cheese was also a successful solution to the job need
22. Which of the following is NOT an example of the progress of medicine from intuition to empirical or precision medicine:
- The use of “rules-based treatments” to diagnose and treat certain cancers will move some care from specialists to generalist physicians
 - “Personalized medicine” will lead to specific treatments for specific diseases in specific individuals
 - The disruptive technology in medicine will be the ability to diagnose diseases precisely
 - Precision medicine will require even more highly trained health care providers to deliver care
23. Which of the following is the BEST example of a disruption across business models:
- Toyota’s manufacturing innovations to reduce costs
 - Wal-Mart’s development of best-in-class inventory control
 - eBay’s development of an online auction business
 - Skype’s development of internet-based telephone services
24. When developing a new product or service, the FIRST consideration should be:
- The unmet needs of the customer
 - The specific characteristics of the product or service
 - The ways in which the customer can purchase the product or service
 - The manufacturing costs of the product or service

25. Christensen describes a disease where a vaccine and antibiotics have led to control, but not eradication of the disease. That disease is:

- a. Measles
- b. Tuberculosis
- c. Polio
- d. Gonorrhea

26. BONUS QUESTION: As described by Christensen, list and briefly describe the four elements of a business model.

ENGR 192/292 A
Fall 2009
Exam 1 Answer Sheet

Name: _____

Perm #: (last 4 digits only) _____

Class (circle one) 192A 292A

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26. Answer to Bonus Question: