1. T or F  The word “engineer” stems from the Latin “ingenium” which also is the root for “ingenious”.

2. T or F  The term “civil engineer” was given to engineers who first did work other than that for the military.

3. T or F  “Ecole des Ponts et Chausées” was the first engineering school and was founded in France in 1747.

4. T or F  Even though the Industrial Revolution began in England, no formal studies of “engineering science” existed in England until 1909.

5. T or F  The U. S. Military Academy was established in 1802, at the urging of Thomas Jefferson and others, as a school for engineer officers.

6. T or F  When the Erie Canal was begun in 1817 there was less than 30 engineers in the United States.

7. T or F  The U. S. undergraduate enrollment for electrical engineers decreased from 104,000 to 72,000 from 1987 to 1992.

8. In 1993 the total number of civilian engineers of all disciplines according to the “Statistical Abstract of the U. S.” was:
   a. 170,000  b. 17 million  c. 1.7 million  d. 176,372,499

9. Two of the defining characteristics of a “Profession” are: (circle two)
   a. specialized knowledge  b. salaried compensation
   c. rendering of a public service  d. large office

10. In 1993 the percentage of all engineers which were employed as electrical engineers was:
    a. 20%  b. 50%  c. 30%  d. 90%

11. T or F  The word “management” was first applied to sports, then to housekeeping, and only later to government and business.

12. The three “roles” of a manager are: (circle three)
    a. interpersonal  b. clerical  c. informational  d. decisional

13. Which one of the following is not one of the five functions of managers:
    a. planning  b. organizing  c. staffing  
    d. designing  e. leading  f. controlling

14. T or F  A National Engineers Registry Survey conducted in 1969 showed that almost 67% of engineers were acting as managers.

15. T or F  Management is a profession.
Ethics Case Study - When in Rome - Exam Questions

1. Is there anything potentially unethical about a professor asking students to write a paper that can be copied directly out of a book?

   *It's not good but these days it's unavoidable.*

2. Does the professor have any ethical responsibility in this case?

   *He should teach the rules of giving credit.*

3. Do you believe that Wenhui and Karla really believed that they were not doing anything wrong? Were they?

   *They are not doing anything wrong by copying provided they give the proper credit and reference. This means putting everything in quotes.*

4. What should Glenn do now? Should he tell Professor Schilling or not? What values is he judging?

   *He should for the sake of the institution and the students that do not see anything wrong.*

5. Do you believe that an academic activity (say doing homework together) in one culture (university or country or any other grouping of people) can be proper, and in another culture it can be considered cheating?

   *Yes. Unfortunately.*

6. What would it feel like being at a university where cheating was rampant and nobody cared or worried about it?

   *The value of your education drops as the school's reputation drops.*
16. O or F Spending of R&D funds in 1990 for nonmilitary products for the global marketplace by Japan was 3.0% of GDP, for Germany was 2.7% of GDP, and for the U.S was 1.9% of GDP.

17. O or F In 1993 U.S. private industry spent more on R&D than the U.S. Federal Government.

18. In the product life cycle, which function occurs first:
   a. product planning                      b. product research               c. identification of need
   d. product evaluation                    e. product design

19. The first corporate research and development center in the U.S. was begun by:
   a. AT&T Bell Labs     b. Dupont Inc.     c. General Motors, Inc.
   d. IBM, Inc.          e. General Electric, Inc.

20. O or F With the collapse of the Soviet Union, the U.S. R&D investment decreased between 1989 and 1995.

21. Which of the following is not a new product strategy as suggested by Ansoff and Stewart
   a. Niche Market Creation       b. Follow the Leader       c. Me-Too
   d. Application Engineering    e. First to Market

22. According to Robert Frosch, head of GM Research Laboratories, the three reasons a Corporate research laboratory fail are: (circle three)
   a. Insufficient capital investment   b. Too much basic science research
   c. Rampant short-termism.           d. Failure for technology transfer to the main business.

23. The three type of patents that can be granted in the U.S. are: (circle three)
   a. plant                          b. production                      c. utility
   d. design

24. To be patentable, an invention must be: (circle all that apply)
   a. new or novel
   b. useful or have utility
   c. reduced to practice
   d. nonobvious

25. T or F Copyright protection expires with the death of the author.