



IZMIR UNIVERSITY OF ECONOMICS  
Faculty of Engineering

FENG 101 – Fundamentals of Engineering Culture

2023-24 Fall Semester / Midterm Examination

Date: 12.11.2023

Full Name: .....

Student ID: ..... Signature: .....

Time Allowed: 60 minutes

**ATTENTION:** During the examination, please do not attempt for **cheating**. Suspected cheating will result in a **ZERO** on your exam and all students who were caught cheating will face **disciplinary sanctions**.

Each question is worth 5 points.

**GROUP A**

**Question 1)**

Thales, Anaximander, Eudoxus and Aristarchus are all philosophers from the Antiquity that contributed to the science of \_\_\_\_\_.

- a) Biology
- b) **Astronomy**
- c) Chemistry
- d) Medicine

**Question 2)**

Which ancient invention revolutionized the agricultural industry, allowing for more efficient cultivation of crops?

- a) **Plow**
- b) Wheel
- c) Archimedes' Screw
- d) Sundial

**Question 3)**

Who is often regarded as the "Father of the Computer" for his work on the Analytical Engine?

- a) Thomas Edison
- b) Johannes Gutenberg
- c) **Charles Babbage**
- d) Alan Turing

**Question 4)**

Which of the following is an example of a conflict of interest for an engineer?

- a) Participating in a professional organization
- b) Owning shares in a company unrelated to your engineering work
- c) **Accepting a job offer from a competing engineering firm while working on a project for your current employer**
- d) Volunteering in a community outreach program

**Question 5)**

In which country did major developments of the organic chemistry-based industry take place in early 20<sup>th</sup> century?

- a) **Germany**
- b) Italy
- c) France
- d) Spain

**Question 6)**

When faced with a conflict of interest, what should an engineer do?

- a) Always prioritize personal interests
- b) Disclose the conflict and act impartially in the client's best interest**
- c) Ignore the conflict and proceed with the project
- d) Seek advice from colleagues but avoid disclosure

**Question 7)**

Which of the statements below regarding engineering ethics is wrong?

- a) Engineers shall not solicit or accept direct or indirect considerations, financial or otherwise, from contractors, their agents, or other parties while performing work for employers or clients.
- b) Engineers shall not attempt to injure, maliciously or falsely, directly or indirectly, the professional reputations, prospects, practice or employment of other engineers, nor indiscriminately criticize the work of other engineers.
- c) An engineer shall not accept financial or other compensation from more than one party for services rendered on one project unless the details are fully disclosed and agreed by all parties.
- d) Engineers must maintain client-professional confidentiality under any circumstance without any exceptions.**

**Question 8)**

Let's consider the following ethical dilemma. A university professor catches a student of hers cheating in an exam. On one hand, she wants to take disciplinary action against the student as the rules suggest. On the other hand, she thinks the student should just be warned this time about not to repeat the same behaviour again in the future. She then thinks to herself "*what would happen if all professors let their students get away with cheating - probably cheating incidents would increase in number*" and decides to follow the rules. This approach is an example of which ethical theory?

- a) Rights theory
- b) Categorical imperative**
- c) Justice theory
- d) Front-page test

**Question 9)**

Which of the following is an example of stealing the proprietary information of a company or institution?

- a) A university lecturer who teaches “Introduction to Engineering” at Harvard quits, starts working at Yale, and teaches the same course.
- b) A football player playing for Barcelona gets transferred to Real Madrid and tells the Real Madrid manager about Barcelona’s tactics.
- c) A food engineer leaves Coca-Cola and joins Pepsi, and tells Pepsi officials about the formulation of Coca-Cola.
- d) All of the above

**Question 10)**

Who was the first philosopher to undertake the classification of living organisms as he separated animals into those with and without blood?

- a) Aristotle
- b) Plato
- c) Hippocrates
- d) Galen

**Question 11)**

Which scientist is famous for his laws of motion and universal gravitation?

- a) Albert Einstein
- b) Galilei Galileo
- c) Stephen Hawking
- d) Isaac Newton

**Question 12)**

What should an engineer consider before accepting a gift or favor from a supplier or client?

- A) Gifts should be accepted without consideration of their value
- B) The potential conflict of interest and the organization's policies on accepting gifts and favors
- C) The personal relationship with the supplier or client
- D) The tax implications of accepting gifts

**Question 13)**

Which invention is considered to have played a pivotal role in the beginning of the Industrial Revolution in the 18<sup>th</sup> century?

- a) Telephone
- b) Compass
- c) **Steam engine**
- d) Printing press

**Question 14)**

What should an engineer do when faced with a project that poses a significant risk to the environment?

- A) Proceed with the project and address any issues later
- B) Report the concerns to a professional organization
- C) Decline the project and leave it to another engineer
- D) Seek ways to minimize the harm to the environment and public safety, and report concerns if necessary**

**Question 15)**

What is the role of whistleblowing in engineering ethics?

- a) Whistleblowing is always discouraged and should be avoided at all costs
- b) Engineers should blow the whistle on every minor issue they encounter
- c) Whistleblowing can be a last resort for reporting serious ethical violations or safety concerns when internal channels have failed or when public safety is at risk**
- d) Whistleblowers should never be protected by law

**Question 16)**

The concept of natural selection, integral to the theory of evolution, was proposed by:

- a) Charles Darwin**
- b) Louis Pasteur
- c) Gregor Mendel
- d) Sigmund Freud

**Question 17)**

Arrange the following events in chronological order:

- a) Wright brothers' first powered flight, Discovery of penicillin, Invention of the telephone
- b) Discovery of penicillin, Invention of the telephone, Wright brothers' first powered flight
- c) Invention of the telephone, Discovery of penicillin, Wright brothers' first powered flight
- d) Invention of the telephone, Wright brothers' first powered flight, Discovery of penicillin

**Question 18)**

The concept of the periodic table, organizing elements by atomic number, was developed by:

- a) Ernest Rutherford
- b) Dmitri Mendeleev
- c) Antoine Lavoisier
- d) Niels Bohr

**Question 19)**

Put the following important events of the 20<sup>th</sup> century in the course of science and technology in correct chronological order.

- i) Atomic bomb explosion in Japan
  - ii) The first heart transplant
  - iii) The first commercial transatlantic flight
  - iv) Internet connection
- 
- a) i – iii – ii – iv
  - b) ii – i – iii – iv
  - c) ii – iv – i – iii
  - d) iii – i – ii – iv

**Question 20)**

Who is known for his groundbreaking work on the theory of electromagnetism and the development of a set equations named after himself?

- a) Albert Einstein
- b) Isaac Newton
- c) James Clerk Maxwell
- d) Max Planck