

Name:

Student Number:

CSI/SEG/ELG2911

Professional Practice: Midterm Exam

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Instructions: Closed Book: Circle the **MOST APPROPRIATE** answer directly on the exam sheet

Questions 1 to 4 Pertain to the History of Engineering and Computer Science

Question 1

Blaise Pascal invented

- (a) Transistors
- (b) The Pascal programming language
- ☒ (c) The mechanical calculator
- (d) The Turing Machine
- (e) Artificial Intelligence

Question 2

The first non-military engineers were called

- (a) Mechanical engineers
- (b) Peaceful engineers
- (c) Chemical Engineers
- ☒ (d) Civil engineers
- (e) None of the above

Question 3

Which event led to the requirement that engineers be licensed in Canada?

- (a) The New London school explosion
- (b) The Charbonneau Commission
- (c) The Space Shuttle Columbia disaster
- ☒ (d) The collapse of the Quebec City Bridge
- (e) None of the above

Question 4

What event in history saw the rise of Engineering as a profession?

- ☒ (a) The Industrial Revolution
- (b) World War I
- (c) World War II
- (d) The rise of the Roman Empire
- (e) None of the above

Questions 5-7 Pertain to Professions

Question 5

Engineering is referred to as a self-regulated profession. This means that the profession is

- (a) Accredited by the CEAB
- (b) Regulated by the government
- ☒ (c) Regulated by Engineers
- (d) All of the above
- (e) None of the above

Question 6

To ensure public recognition of a profession, which of the following elements are needed?

- (a) A code of ethics and consequences if the code is breached
- (b) A scope of practice
- (c) An administering organization
- (d) A body of knowledge
- ☒ (e) All of the above

Question 7

The Information Systems Professional (ISP) designation is

- (a) Mandatory to work as a programmer in Canada
- ☒ (b) Considered a profession with legal standing but with no license or work signoff required
- (c) Has no legal standing
- (d) All of the above
- (e) None of the above

Questions 8-11 Pertain to Technical Report Writing

Question 8

Specifications documents may form part of a contract between a client and a provider. They are used to

- (a) Specify payment schedules
- (b) Define liability limits for each party of the contract
- (c) List criteria that the desired product or service must satisfy
- ☒ (d) All of the above
- (e) None of the above

Question 9

What is the difference between a bid and a proposal?

- ☒ (a) Proposals are unsolicited offers of service while bids are quotes for requested services
- (b) They are exactly the same, there is no difference
- (c) Bids are for work that is done for free while proposals requests for paid work.
- (d) Bids are quotes for specified services while proposals are quotes for services that have not been precisely specified.
- (e) None of the above

Question 10

Which of the following is NOT a question that a report introduction needs to answer?

- (a) Who are the intended readers of this report?
- (b) What questions are being investigated?
- (c) Why was the work performed?
- ☒ (d) How much did the work described in the report cost?
- (e) None of the above.

Question 11

The abstract goes in the

- ☒ (a) Front matter
- (b) Main body
- (c) Back matter
- (d) Letter of transmittal
- (e) None of the above

Questions 12-19 Pertain to Ethics, Misconduct and Discipline

Question 12

When an Engineer wishes to report the suspected misconduct of another engineer, she reports the details of the suspected misconduct to

- (a) The police
- (b) The Discipline Committee
- ☒ (c) The Complaints Committee
- (d) CIPS
- (e) None of the above

Question 13

Before reporting the other engineer, she must first

- (a) Get permission from her boss
- ☒ (b) Show courtesy to the engineer she is considering reporting by discussing the alleged misconduct
- (c) Refer to the CEAB Guide of Misconduct
- (d) All of the above
- (e) None of the above

Question 14

When faced with a conflict of interest, an engineer or computer scientist must

- ☒ (a) Promptly, voluntarily and completely disclose the nature of the conflict to all interested parties
- (b) Proceed as if there is no conflict and use their best, unbiased judgment
- (c) Quit
- (d) Report conflict of interest to PEO
- (e) None of the above

Question 15

Which section of the Engineer's code of ethics pertains to moonlighting?

- (a) 77.3
- (b) 77.4
- ☒ (c) 77.5
- (d) 77.6
- (e) None of the above

Question 16

According to the Engineer's code of ethics as well as the CIPS and IEEE/ACM codes of ethics, what is the paramount duty of an engineer or computer scientist?

- (a) Protect the interests of their employer
- (b) Protect the interests of their employer's clients
- ☒ (c) Protect the safety and welfare of the public
- (d) All of the above
- (e) None of the above

Question 17

Sealing and signing a design document that has not been thoroughly checked by the practitioner

- (a) Shows that practitioner is confident in the abilities of her employees
- (b) Is professional misconduct
- (c) Can lead to liability for negligence
- (d) None of the above
- ☒ (e) Both (b) and (c)

Question 18

On a school computer, Adam knows how to copy programs. A classmate asked him to copy one for his own use. The best ethical answer should be one of the following:

- (a) I'll copy it, but don't tell anybody
- ☒ (b) I can't copy it because it will violate copyright law
- (c) I will copy it for you, but you can't copy it for others
- (d) I don't know how to copy the program
- (e) None of the above

Question 19

In an organization, the group most likely to be behind a security breach is

- ☒ (a) Employees
- (b) Hackers
- (c) Competitors
- (d) Crackers
- (e) None of the above

Questions 20-25 Pertain to Legislation, Licensing and Certification

Question 20

In Canada

- ☒ (a) Provincial laws or acts empower engineering associations to regulate the profession of Engineering
- (b) Engineers Canada regulates the profession of engineering
- (c) The profession of engineering is not regulated
- (d) The Canadian Information Processing Society regulates software engineers
- (e) None of the above

Question 21

The Canadian Engineering Accreditation Board accredits

- (a) Universities
- (b) Engineering Faculties in Universities
- ☒ (c) Engineering programs
- (d) Graduates
- (e) All of the above

Question 22

CSAC stands for

- (a) Canadian Standards Authority Council
- (b) Council of Science Academics Canada
- (c) Computer Science Academic Council
- ☒ (d) Computer Science Accreditation Council
- (e) None of the above

Question 23

Which of the following are required to obtain an Engineering License from PEO?

- (a) Satisfy academic requirements such as having a degree from accredited undergraduate Engineering program in Canada
- (b) 4 years' work experience with at least one year in a Canadian jurisdiction
- (c) Age of majority
- (d) Be of good character
- ☒ (e) All of the above

Question 24

Who of the following should apply for a limited license?

- (a) Those who satisfy all requirements for licensure except the year of Canadian experience
- ☒ (b) Someone who has gained competence in a certain area of professional engineering by having at least eight years of experience
- (c) Someone who is licensed in another province and is coming to Ontario on a temporary basis
- (d) All of the above
- (e) None of the above

Question 25

For what is a certificate of authorization needed?

- (a) To allow engineers from other jurisdictions to practice engineering in Ontario
- (b) To authorize an engineer to change employers
- (c) To authorize an engineer to moonlight
- (d) To allow an engineer to serve as a character reference for a licensee applicant
- ☒ (e) To offer engineering services directly to the public.

Questions 26-28 Pertain to Engineering Design

Question 26

What type of design involves making improvements to existing products?

- (a) Reverse engineering
- ☒ (b) Evolutionary design
- (c) Innovation
- (d) Entrepreneurial design
- (e) None of the above

Question 27

Which of the following is NOT a step in the basic design process?

- (a) Needs analysis
- (b) Solution generation
- (c) Feasibility analysis
- ☒ (d) Search for problems
- (e) Generate design criteria

Question 28

What is the basic principle of Agile design?

- (a) That software engineers and computer scientist know what their clients need better than they do.
- (b) That the design requirements form part of the contract and cannot be changed
- (c) That software design is similar to designing large mechanical systems
- (d) That software usability has to be accessible
- ☒ (e) The requirements change or evolve during the design process

Questions 29-30 Pertain to Design Safety

Question 29

What is Bill C-45?

- (a) Legislation that mandates that all manufacturing plants require an engineer to be employed as safety manager
- ☒ (b) Legislation that impose criminal liability on employers that fail to take reasonable measures to ensure the safety of employees and the public
- (c) Legislation that defines an engineer's paramount duty.
- (d) All of the above
- (e) None of the above

Question 30

Which type of sign indicates a greater risk of injury or death?

- (a) Warning
- (b) Advisory
- (c) Caution
- ☒ (d) Danger
- (e) All indicate an equal risk of injury or death