

COMPUTER ENGINEERING

Task 1. Fill in the gaps with the most appropriate words from the box.

• specific	• circuit
• mechanical	• wired
• input/output peripherals	• physical
• data	• digital
• logical	• electrical
• memory	• instructions
• real-time	• arithmetic
• intermediary	• protocols
• software	

1. Hardware Hardware refers to the _____ components of a computer system, including the CPU, memory, and input/output devices. These components interact through _____ and _____ connections

2. Software Software is a collection of machine-readable _____ that control computer hardware. It includes both system and application _____.

3. Microprocessor A microprocessor is an _____ that contains a CPU and performs _____ and _____ operations.

4. Microcontroller A microcontroller is a compact integrated circuit with a processor, _____, and _____ on a single chip, designed to manage _____ tasks.

5. Computer Networks A computer network is a system that connects computers and devices using communication _____ over _____ or wireless channels to share information and resources.

7. Operating Systems

Operating systems are types of _____ that manage hardware and software resources. They serve as an _____ between the user and the hardware.

9. Computer Architecture

Computer architecture includes the CPU, _____ hierarchy, I/O systems, and _____ paths that determine how a computer operates.

NUCLEAR ENGINEERING

Task 2. Read the text about the responsibilities of nuclear engineers.

Depending on your specific role or specialization in the nuclear engineering space, your responsibilities and day-to-day tasks will vary but here are some general responsibilities:

- Nuclear design - design and improve nuclear reactors, with a primary emphasis on safety, efficiency, and reliability. This includes creating reactor cores, cooling systems, and control mechanisms.
- Nuclear safety - assess and ensure the safety of nuclear power stations, facilities and operations. They create emergency response plans and are involved in regulatory compliance.
- Nuclear quality assurance - control the quality of nuclear processes and materials to ensure they meet stringent safety standards.
- Nuclear waste management: work on strategies for managing nuclear waste, including the safe storage, transportation, and disposal of radioactive nuclear materials and spent nuclear fuel.
- Research and Development: Nuclear engineers conduct research to advance nuclear technology, develop new reactor designs, and improve existing ones. They also explore applications of nuclear science in various fields.

Read each situation and decide which type of nuclear engineer is most likely responsible for it.

1. Someone is developing a new process to improve material safety inspections.
2. A government official is reviewing a power station's emergency plan.
3. A group is building a mini reactor for use in space travel.
4. Engineers are testing new ways to safely store used fuel rods deep underground.
5. A team is designing a system to remove heat from a reactor safely and efficiently.

Task 3. Connect the beginnings of sentences (Column A) with the correct endings (Column B):

Column A (Beginnings)	Column B (Endings)
1. A nuclear engineer must always think about safety	a) engineers must test systems and meet safety regulations.
2. If we didn't manage nuclear waste properly	b) by supporting clean energy and advancing medical and technological innovation.
3. One way to improve nuclear energy systems could be	c) it could harm people and the environment for thousands of years.
4. Before a nuclear plant can operate	d) because even a small mistake can have serious consequences.
5. Research in nuclear engineering helps the world	e) to design better cooling systems and improve safety features.

ENVIRONMENTAL ENGINEERING

Task 4. Solve to crossword.

Word Bank

- Flora
- Fauna
- Mitigation measures
- Hazardous compounds
- Sewage treatment facility
- Conservation
- Animal species
- Impact assessment

Environmental Engineering Crossword Clues

Across

3. Dangerous chemicals that may harm humans or the environment (2 words)
5. The animal life in a particular region
6. Measures taken to reduce negative environmental effects (2 words)
7. A facility that processes wastewater before releasing it into nature (3 words)

Down

1. A study that examines how a project might affect nature (2 words)
2. The plant life in a specific ecosystem
3. The act of protecting natural resources
4. A group of animals that can reproduce and share common characteristics (2 words)

Task 5. Read the text and choose the correct answer.

Environmental engineers play a vital role in protecting **flora** and **fauna**. Their work often includes conducting an **impact assessment** before a construction project begins. This helps determine how the project may affect local ecosystems, including **animal species** that may be endangered.

One of their major tasks is designing **sewage treatment facilities**, which clean wastewater before it is returned to the environment. Engineers also deal with **hazardous compounds**, ensuring they are safely handled and do not pollute soil or water.

To reduce negative effects, engineers recommend **mitigation measures**, such as planting trees or building wildlife crossings. They also promote **conservation** strategies to preserve natural habitats and protect biodiversity.

1. Why is an impact assessment important before building a new factory?

- A) To design the factory's aesthetic appearance to fit the neighborhood
- B) To estimate the factory's potential profits and market share
- C) To predict and minimize harmful effects on local ecosystems and communities

2. Which of the following best describes a sewage treatment facility?

- A) A facility that processes wastewater to remove pollutants before releasing it into the environment
- B) A place where sewage is stored indefinitely without treatment
- C) An industrial plant that manufactures fertilizers

3. Hazardous compounds are dangerous because they:

- A) Can accumulate in the environment, causing long-term damage to wildlife and humans
- B) Naturally break down quickly and improve soil quality
- C) Are essential nutrients for plant growth

4. Mitigation measures in environmental projects typically include:

- A) Ignoring environmental damage to save time and money
- B) Strategies to reduce or eliminate negative environmental impacts before they occur
- C) Relocating local wildlife without assessing habitat suitability

5. Conservation efforts primarily focus on:

- A) Introducing non-native species to increase ecosystem diversity
- B) Expanding urban areas by clearing natural land
- C) Protecting biodiversity by preserving natural habitats and endangered species

6. Which of these best defines “fauna”?

- A) The minerals and rocks found underground
- B) The plant life in an area, including trees and grasses
- C) The community of animal species living naturally in a specific region

7. Protecting animal species is important because:

- A) They maintain ecological balance and support ecosystem services humans rely on
- B) They often cause problems and need to be controlled
- C) They are primarily decorative and have little ecological value

8. Which of the following tasks would an environmental engineer be least likely to perform?

- A) Designing a system to reduce industrial emissions
- B) Developing educational software about wildlife
- C) Planning the layout of a sewage treatment plant

9. In environmental engineering, studying digital logic helps:

- A) Understand animal behavior patterns
- B) Design embedded systems and sensors that monitor environmental conditions in real time
- C) Create artistic representations of natural landscapes

10. Which of the following are examples of embedded systems used in environmental engineering?

- A) A sensor network that continuously monitors river water quality and reports changes instantly
- B) A spreadsheet program used to manually input environmental data
- C) An automated irrigation system that adjusts water delivery based on soil moisture sensors