20/05/2024 *1h 30*

Exam_correction

I: About Engineering

1. Define briefly the words " **Technique** " and " **Profession** " ? …….. **(2)**

- **(1)** ***Technique***: refers to a method or a systematic way of performing a particular task, often involving specialized skills, procedures, or tools to achieve a desired outcome.
- **(1)** ***Profession*****:** is a type of occupation that typically involves specialized training, education, and expertise in a specific field.

2. Name five (**05**) **Branches** of engineering, then Give a **short description** of **one branch** of your choice?
……..…….. **(5)**

- **(2.5) Branches:** * Process Engineering * Hydrocarbons * Public Works
  *Civil Engineering * Hydraulics * Aeronautics
  *Mechanical Engineering * Maritime Engineering * Metallurgy …
- **(2.5) A short description** of **one branch: for example : Hydrocarbons engineering**

Hydrocarbons engineering: deals with the exploration, extraction, processing, and utilization of hydrocarbons (compounds consisting of hydrogen and carbon) such as crude oil and natural gas.

3. Give three (03) **Tasks** of an engineer? ……..…….. **(3)**

Tasks: * Problem Solving * Design and Innovation * Analysis
* Project Management * Collaboration * Communication

II: About your Major

A / Civil Engineering

1. Name you **Major** (**Specialty**) ? …….. **(2)**

Civil engineering

2. Name four (**04**) **Application areas** or **Sub-desciplines** of your specialty? ..…… **(4)**

Structural engineering
Geotechnical engineering
Transportation engineering
Construction engineering
Urban planning and development
Environmental engineering
Water resources management
Coastal and Marine engineering

3. Explain the **Main mission** of an engineer in your field? ……..……. **(4)**

The main mission of a civil engineer is to conceive, plan, design, construct, operate, and maintain buildings, bridges, highways, airports, railways, tunnels, waterways ports and harbors, dams, water supply and wastewater treatment systems. They aim to improve health and safety for people, minimize impact to the environment, consider costs and resources, and promote overall sustainability.

B / Mechanical Engineering

1. Name you **Major** (**Specialty**) ? …….. **(2)**

Mechanical engineering

2. Name four (**04**) **Application areas** or **Sub-desciplines** of your specialty? ..…… **(4)**

Manufacturing and production	Automotive engineering
Aerospace engineering	Materials engineering
Energy systems and renewable energy	Robotics and automation
Biomedical engineering	Environmental engineering

3. Explain the **Main mission** of an engineer in your field? ……..……. **(4)**

The main mission of a mechanical Engineer is to design, build, and test mechanical devices and systems using engineering, physics, and mathematics principles. They are responsible for analyzing problems and designing solutions for mechanical and thermal devices, developing and testing prototypes, overseeing the manufacturing process for mechanical components, equipment, and systems, evaluating and improving their efficiency.

C / Process Engineering

1. Name you **Major** (**Specialty**) ? …….. **(2)**

Process engineering

2. Name four (**04**) **Application areas** or **Sub-desciplines** of your specialty? ..…… **(4)**

Chemical Industry	Oil and Gas Industry
Food and Beverage Industry	Pharmaceutical Industry
Biotechnology	Energy Industry
Materials Processing	Water Treatment
Semiconductor Industry	Environmental Engineering

3. Explain the **Main mission** of an engineer in your field? ……..……. **(4)**

The main mission of a process engineer is studying, sizing, and implementing production units in various sectors, including the oil and gas industry, environment, chemical industry, agri-food, pharmacy,… It is also optimizing production processes, managing resources, designing safe and efficient facilities, and addressing challenges related to transforming raw materials into finished products.

Good Luck S.Aourar