



UNIVERSITI
TEKNOLOGI
PETRONAS

FINAL EXAMINATION JANUARY 2025 SEMESTER

COURSE : EEB4073/EFB4073/VDB4053 - ENGINEERS IN
SOCIETY
DATE : 14 APRIL 2025 (MONDAY)
TIME : 9.00 AM - 12.00 NOON (3 HOURS)

INSTRUCTIONS TO CANDIDATES

1. Answer **ALL** questions in the Answer Booklet.
2. Begin **EACH** answer on a new page in the Answer Booklet.
3. Indicate clearly answers that are cancelled, if any.
4. Where applicable, show clearly steps taken in arriving at the solutions and indicate **ALL** assumptions, if any.
5. **DO NOT** open this Question Booklet until instructed.

Note :

- i. There are **FIVE (5)** pages in this Question Booklet including the cover page .
- ii. **DOUBLE-SIDED** Question Booklet.

1. XYZ Poultry Chicken Sdn. Bhd. located in Kampar, Perak discharges treated poultry liquid waste from their processing plant at a rate as required by the Department of Environment (DoE), Malaysia. Mr. Nordin, a new operation engineer is in charge of the waste treatment plant and he reports directly to the plant manager. During the monsoon season, Mr Nordin observes potential overflow of the poultry liquid waste from the treatment ponding system into a river nearby. He immediately reports the problem to the plant manager and proposes a few solutions to overcome the situation. However, the plant manager rejects his proposal with the excuses that it will cost the company's budget and the problem may only occur during heavy rains. Due to that incident, the plant manager later transfers Mr. Nordin to the maintenance section so that he does not have to worry about the problem anymore. He also warned by the plant manager not to disclose the issue to the DoE or he will face unfavourable actions by the management. As an engineer, what should Mr. Nordin do. Justify your answer in terms of engineering ethics.

[25 marks]

2. Timbaktu is a small developing country that is working towards sustainable development. The government has introduced the following initiatives:

Eco-Friendly Farming Program – Encouraging farmers to use organic fertilizers and reduce chemical pesticides.

Clean Energy Project – Building solar and wind energy plants to reduce dependence on fossil fuels.

Community Recycling Initiative – Teaching people how to recycle waste and reduce pollution.

- a. Discuss how these initiatives support sustainable development.
[9 marks]

- b. Why is it important to balance economic growth, social well-being, and environmental protection?
[4 marks]

- c. Elaborate the 3 challenges that might Timbaktu face in implementing these programs and their respective solutions?
[12 marks]

3. The management of a start-up manufacturing company is contemplating to choose between traditional mode of operations and the Just-In-Team (JIT) system. As an operation management consultant to the company:

- a. Explain the differences between the traditional mode of operations and JIT system in terms of inventory, deliveries, lot sizes, vendor, and workers.

[10 marks]

- b. Present a detailed explanation of the push and pull system to the company's management using an appropriate diagram and propose with justification which is more appropriate for an efficient manufacturing process.

[15 marks]

4. Seri Iskandar Ptd. is a company focused on sustainable construction practices, specializing in eco-friendly materials and energy-efficient designs for oil and gas offshore structures. Driven by increasing environmental regulations and oil and gas industry's demand for sustainability, the company has seen its green construction market expanding. The recently secured contract requires the Seri Iskandar Ptd to design and fabricate a state-of-the-art, production platform that reduces energy consumption and promotes sustainability. As a professional engineer, assess business and legal aspects to make the company ready and successful in completing the project.

[25 marks]

-END OF PAPER-

