

Complex Engineering Problem # 1

Student Name: _____

CMS ID: _____

Batch: _____

Due Date: 22nd March 2022**Problem Description:****Design of a Power Plant for Quetta**

A commercial power plant with a capacity of more than 100-MW located in Quetta city has recently stopped producing power for some undisclosed reasons. Your job is to propose a plant of 100-MW capacity for Quetta city. The selection of technology and resource is part of the task. Your work should answer the following questions.

1. Why this specific technology and resource has been selected?
2. What are the water requirements? Quetta is known to have low water resources.
3. Where exactly would you install this plant and how much land is required?
4. What are the transportation and grid connectivity issues/options?
5. What are the environmental and social impacts?
6. What are the Economical/Financial aspects?

Note: State all your assumptions clearly and provide computer code if any programming is used. The report should be formatted using IEEE template available at;

Word: <https://www.ieee.org/content/dam/ieee-org/ieee/web/org/conferences/conference-template-a4.docx>

LateX: <https://www.overleaf.com/gallery/tagged/ieee-official>

#	Attribute	Unsatisfactory 0 – 0.5	Satisfactory 0.5 – 2	Exceeds Expectations 2 – 2.5	CLO	PLO	Taxonomy Level	Score
1	Problem definition	Incapable of effectively understanding problem statement, its constraints, and deliverables.	Demonstrates the ability to understand the problem statement, its constraints, and deliverables.	Constructs complete problem identification with a thorough discussion on problem constraints and their deliverables.	1	1	C2	
2	Identification and implementation of relevant design methods of power plant	Is not able to identify the relevant design procedure and implement the standard procedure.	Able to identify relevant methods and demonstrates the ability to implement the relevant procedure with minor mistakes	Identifies the relevant methods and tools. Discusses some methods/tools and implements the relevant procedure/method perfectly.	3	2	C3	
3	Considers the environmental/social impacts of the proposed solution	Is not able to identify the relevant social and environmental aspects.	Is able to identify and considers the relevant social and environmental aspects.	Identifies, considers, and provides a detailed discussion on environmental and social causes.	2	7	C2	
4	Analysis/Investigation/Results	Does not follow the standard procedure of analysis and investigation. Does not provide any concrete results.	Analysis and investigations are carried out methodically. Variation in design parameters is not considered while concluding.	Analysis and investigations are carried out methodically. Effective conclusions have been derived from the results with comments on different parameters.	4	2	C4	
					Total (Out of 10)			