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End Semester Examination, December 2024

Open Elective – IIIrd Semester

CRITICAL THINKING AND PROBLEM SOLVING ESSENTIALS (OEC035)

Time: 2.5 hrs.

Max Marks: **50**

Note: **Part-A:** Attempt any 5 questions

Part-B: All Questions are compulsory. There is an internal choice in each question.

Marks are indicated against each question.

PART-A

- Q.1 (a) Identify and describe two common barriers to critical thinking and ways to overcome them. [CO-1] [L-2] **2**
(b) Explain the term "logical fallacies" with an example. [CO-1] [L-2] **2**
(c) Describe the process of framing a problem in problem-solving. [CO-1] [L-2] **2**
(d) What are the characteristics of effective communication in critical thinking? [CO-1] [L-2] **2**
(e) Explain the process of constructing and evaluating an argument. [CO-1] [L-2] **2**
(f) Explain the concept of creative thinking in problem-solving with an example. [CO-1] [L-2] **2**
(g) Identify how critical thinking is applied in cybersecurity practices. [CO-1] [L-2] **2**
2x5

PART-B

- Q.2 Define critical thinking and discuss its significance in personal and professional contexts. [CO-1] [L-3] **10**
OR
Describe the concept of cognitive bias and discuss its impact on critical thinking. Identify and explain three types of cognitive biases, providing examples for each. How can an individual minimize the effects of these biases to improve decision-making? [CO-1] [L-3] **10**
- Q.3 What is a logical fallacy? Explain any 4 types of logical fallacies with examples. Illustrate how to identify logical fallacies in everyday arguments. [CO-2] [L-3] **10**

OR

Apply a method for constructing a logical argument to support a solution for a real-world problem. Evaluate the strength of your argument by assessing the evidence, reasoning, and counterarguments. [CO-2] [L-3] **10**

- Q.4 Define the five stages of the IDEAL approach and explain how each stage contributes to solving a problem. Provide an example of a real-world problem and walk through how the IDEAL approach can

be applied step-by-step to solve it.
10

[CO-3] [L-4]

OR

Explain the process of defining and framing problems in the context of problem-solving. How does proper problem definition influence the effectiveness of finding solutions? Provide an example of a well-defined problem and a poorly defined problem and explain how the approach to solving them would differ.

[CO-3] [L-4]

10

Q.5 Discuss the role of ethical decision-making in technology, using real-world examples. [CO-4] [L-4]
10

OR

Analyze the implications of data analysis in critical thinking processes.

[CO-4] [L-4]

10