Test: CLA-T1   **Date: 24.09.2024**

Course Code & Title: 21GNH101J Philosophy of Engineering   **Duration:** 1 Hour

Year & Sem: I Year / I Sem   **Max. Marks:** 35

Course Articulation Matrix: *(to be placed)*

S.No.	Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1	**CO1**	L	-	-	H	-	L	-	L	H	H	-	H
2	**CO2**	H	-	-	H	H	-	-	-	H	H	-	H

| Part – A (10 x 1 = 10 Marks) Instructions: Answer ALL Questions					
Q. No	**Question**	**Marks**	**BL**	**CO**	**PO**
1	Which of the following civilizations is credited with constructing the first known aqueduct system, demonstrating early advancements in civil engineering? a. Ancient Egypt b. Ancient Greece c. **Ancient Rome** d. Mesopotamia	1	L2	1	1
2	Which of the following statements best describes the relationship between Arts, Mathematics, Science, Technology, and Engineering? a. Engineering uses mathematics and science to solve practical problems, but it does not have any influence from the arts. b. Science and technology are the same discipline, and mathematics is used only in science c. **Engineering integrates mathematics and science to design solutions, with arts contributing to creativity and aesthetics in design.** d. Mathematics drives all engineering decisions, and arts have no relevance to technological advancements.	1	L1	1	1
3	Which of the following best describes the purpose of the STEAM Pyramid in the philosophy of engineering? a. A framework for hierarchical decision-making in engineering processes. b. **A model that integrates science, technology, engineering, arts, and mathematics for holistic learning** c. A structure for organizing ethical considerations in engineering projects d. A strategy for prioritizing sustainability in engineering design	1	L1	1	1
4	Which of the following is NOT considered a desired attribute of an engineer? a. Strong analytical and problem-solving skills b. Effective communication and teamwork C. **Inflexibility in adapting to new technologies** d. Ethical responsibility and integrity	1	L1	1	1
5	Which of the following best represents an example of "Adapting" as an Engineering Habit of Mind? a. Identifying a problem in a design and proposing a new solution b. Collaborating with a team to brainstorm new design ideas. c. **Making changes to a system when external conditions change**	1	L1	1	1

	d. Analyzing the performance of a design using simulation tools				
6	Which of the following best differentiates a Reference Ontology from an Application Ontology? a. A Reference Ontology is specific to an application domain, while an Application Ontology is general and abstract b. **A Reference Ontology provides general and abstract concepts, while an Application Ontology is tailored to a specific domain or purpose.** c. Both Reference and Application Ontologies are designed to be domain-specific and interchangeable. d. Reference Ontologies are created only for software engineering, while Application Ontologies are used across various engineering fields.	1	L1	2	1
7	Which of the following best describes a key advantage of using suites of ontology modules in engineering applications? a. They ensure that all modules are merged into a single, large ontology. b. **They provide flexibility and scalability for ontology reuse and maintenance..** c. They guarantee error-free reasoning across different ontologies. d. They eliminate the need for domain-specific ontological concepts.	1	L1	2	1
8	Which of the following best describes the capability of a technological system in the philosophy of engineering? a. The intended function of the system as designed by the engineer. b. **he ability of the system to achieve multiple purposes, including unforeseen ones.** c. The blueprint that outlines the construction of the system. d. The mechanical process used to assemble the system.	1	L1	2	1
9	Which of the following stages in the Product Life Cycle (PLC) typically involves the highest marketing cost due to heavy promotion efforts to build awareness? a. **Introduction** b. Growth c. Maturity. d. Decline	1	L1	2	1
10	Which of the following best differentiates between commodities, services, and infrastructure in the context of engineering? a. **Commodities are physical items, services are intangible, and infrastructure is a combination of both.** b. Commodities are intangible products, services involve physical items, and infrastructure refers only to buildings. c. Commodities include roads and bridges, services are tangible products, and infrastructure is intangible. d. Commodities are intangible products, services include physical objects, and infrastructure consists of intangible concepts.	1	L1	2	1
	Part – B **(1 x 10 = 10 Marks)** **Instructions: Answer ALL Questions**				
11	Discuss the history of engineering development, highlighting key milestones from ancient to modern times.	10	L2	1	1
.	(OR)				
12	Describe the functions and capabilities of ontology in engineering applications. How does ontology improve data integration and knowledge representation?	10	L2	2	4
	Part – C **(1 x 15 = 15 Marks)** **Instructions: Answer ALL Questions**				
13	You are an engineer tasked with designing a sustainable housing project in a rural area prone to floods. The project must integrate Science, Technology, Engineering, Arts, and Mathematics (STEAM) principles. a) How would you apply each element of STEAM to develop a functional and aesthetically pleasing housing solution? b) Do you think incorporating Arts in engineering design is	15	L2	1	1

	necessary for this project? Justify your answer.				
.	(OR)				
14	Create a **concept/mind map** showing the ontology of a product's life cycle, covering commodities, services, and infrastructure. Discuss how ontology supports product lifecycle management and decision-making.	15	L3	2	4

*Program Indicators are available separately for Computer Science and Engineering in AICTE examination reforms policy.

Course Outcome (CO) and Bloom's level (BL) Coverage in Questions
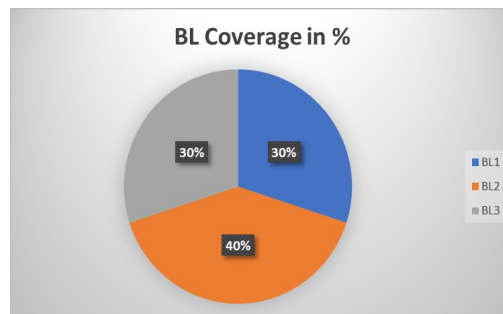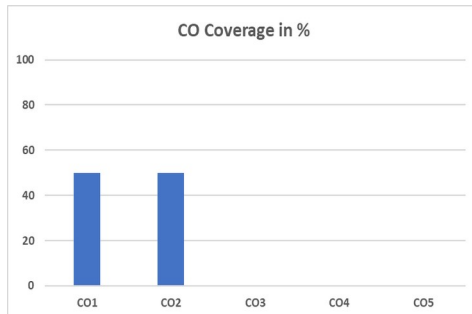
Approved by the Audit Professor/Course Coordinator