SRM Institute of Science and Technology
College of Engineering and Technology
School of Computing

Mode of Exam
OFFLINE

DEPARTMENT OF COMPUTING TECHNOLOGIES
SRM Nagar, Kattankulathur – 603203, Chengalpattu District, Tamil Nadu
Academic Year: 2024 - 2025 - Odd Semester

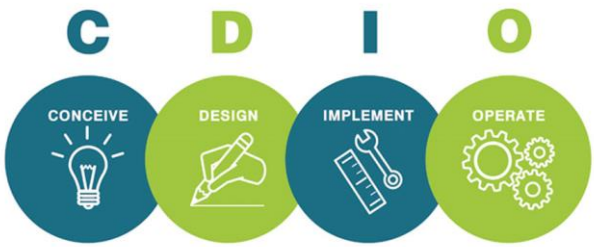
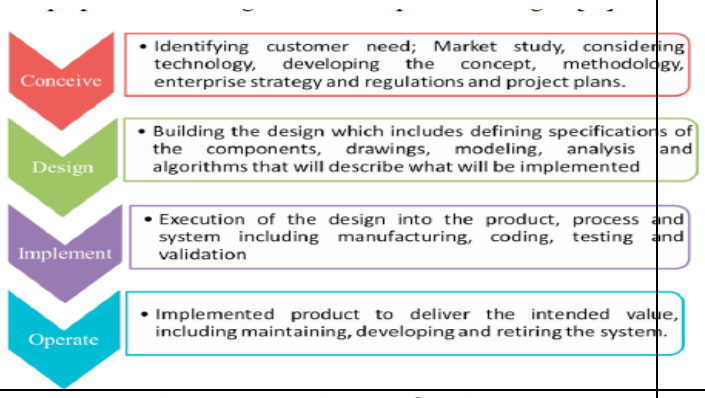
Test: CLAT 3 **Batch 2 – Set C** **Date: 11.12.2024**
Course Code & Title: 21GNH101J Philosophy of Engineering **Duration: 60 Min**
Year & Sem: I Year & I Sem **Max. Marks: 35**
Registration Number:

Part – A
(10 * 1 = 10 Marks)
Instructions: Answer all the Questions

Q. No	Question	Marks	BL	CO	PO
1	The evaluation phase consists of _____ number of parts. **a) 2** b) 4 c) 6 d) 8	1	1	4	1
2	_____ follow the creativity-based engineering design process. a) Scientists **b) Engineers** c) Team leaders d) Project manager	1	1	4	4
3	The _____ test your hypothesis by doing an experiment **a) Scientific Method** b) Addie Method c) Holland Code d) Engineering Method	1	1	4	1
4	The person who works to develop products by means of integrating technologies is refereed as a) Testers **b) Programmers** c) Facilitators d) Managers	1	1	4	1
5	What is the first step in the engineering design process? a) Create a prototype b) Establish criteria and constraints **c) Define the problem** d) Test and evaluate	1	1	4	1
6	The National Society of professional engineers was established in _____ a) 1940 **b) 1934** c) 1945 d) 1950	1	2	5	2

7	Sustainability is concerned about our _____ **a) Environment** b) Companies c) Resources d) Society	**1**	**1**	**5**	**1**
8	Design _____ is distinct from analytic methodologies, which is crucial to develop scientific initiatives. a) Developers b) Testers c) Thinkers **d) Epistemology**	**1**	**2**	**5**	**1**
9	The American Association of Engineering Societies was established in _____ a) 1997 **b) 1979** c) 1897 d) 1889	**1**	**2**	**5**	**1**
10	Ethics is a factor used in measuring the concept of **a) Social license** b) Social impacts c) Cultural collaborations d) Organization communication	**1**	**2**	**5**	**2**
Part – B (1* 10 = 10 Marks) Instructions: Answer any ONE Question					
11	**Explain in detail about the Operational factors in system design.** **<u>OPERATIONAL FACTORS IN SYSTEM DESIGN</u>** The key concepts outlined here are valuable in designing an efficient, scalable, accessible, secure, and cost-friendly architecture. **1. Integrity and Consistency** **2. Performance and Scalability** **3. Deployment Strategy** **4. Security** **5. User Experience and Inclusivity** **6. Recovery and Planning** **7. Unit Testing** **8. Application Performance Monitoring**	**10**	**1**	**4**	**1**
12	**Identify the various ethical codes that engineers shall hold paramount the safety, health, and welfare of the public.** **<u>ENGINEERS CODE OF ETHICS</u>** **I. Fundamental Canons** Engineers, in the fulfillment of their professional duties, shall: 1. Hold paramount the safety, health, and welfare of the public. 2. Perform services only in areas of their competence. 3. Issue public statements only in an objective	**10**	**2**	**5**	**1**

	and truthful manner. 4. Act for each employer or client as faithful agents or trustees. 5. Avoid deceptive acts. 6. Conduct themselves honorably, responsibly, ethically, and lawfully so as to enhance the honor, reputation, and usefulness of the profession. **II. Rules of Practice** 1. Engineers shall hold paramount the safety, health, and welfare of the public. 2. Engineers shall perform services only in the areas of their competence. 3. Engineers shall undertake assignments only when qualified by education or experience in the specific technical fields involved. 4. Engineers shall issue public statements only in an objective and truthful manner. 5. Engineers shall be objective and truthful in professional reports, statements, or testimony. They shall include all relevant and pertinent information in such reports, statements, or testimony, which should bear the date indicating when it was current. 6. Engineers shall act for each employer or client as faithful agents or trustees. 7. Engineers shall disclose all known or potential conflicts of interest that could influence or appear to influence their judgment or the quality of their services. 8. Engineers shall avoid deceptive acts. 9. Engineers shall not falsify their qualifications or permit misrepresentation of their or their associates' qualifications. They shall not misrepresent or exaggerate their responsibility in or for the subject matter of prior assignments. Brochures or other presentations incident to the solicitation of employment shall not misrepresent pertinent facts concerning employers, employees, associates, joint venturers, or past accomplishments.				
Part – C **(1* 15 = 15 Marks)** **Instructions: Answer any ONE Question**					
13	**Discuss in role of CDIO engineers in industry perspective.** **<u>CDIO ENGINEERS IN INDUSTRY</u>**	**15**	**1**	**4**	**1**

	 Conceive: • Defining Customer needs • Considering technology • Enterprise Strategy and regulations • Developing Concepts, techniques and • Business Plan Design: • Creating the design • The plans, drawings and algorithms that describe what will be implemented Implement: • The transformation of design into the product, including manufacturing, coding , testing and validation Operate: • Using the implemented product to deliver the intended values, including maintaining, evolving and retiring the system 				
14	**How can the principles of the 3Es - environmental, economic, and ethical considerations - be integrated into the engineering design and development process to ensure sustainability and social responsibility throughout its lifecycle?"** **Figure (3)**	**15**	**2**	**5**	**1**

Environment (4)

- Equity and inclusion helps create equitable and inclusive processes.
- Inclusive leaders possess higher cultural intelligence and skills to manage diversity.
- Diversity helps build better strategies.
- Diverse teams are more innovative and better prepared to take bold actions.

Ethics (4)

- Promoting Equity in the company, ensures that everyone has access to the same opportunities and treatment.
- Inclusion leads to conscious decision making.
- Inclusive workplaces have better psychological safety.
- Diversity and Inclusion help the company reach a wider audience and avoid discriminatory pitfalls.

Economics (4)

- Diversity with inclusion is profitable for the business.
- Inclusive organizations promote transparency.
- Teams with higher empathy are better equipped to deal with conflict of interests and confrontations.

Diverse and inclusive teams promote a trustworthy brand image.

Course Outcome (CO) and Bloom's level (BL) Coverage in Questions