**SRM Institute of Science and Technology** 

**College of Engineering and Technology School of Computing**

**DEPARTMENT OF COMPUTING TECHNOLOGIES**

Mode of Exam **OFFLINE**

SRM Nagar, Kattankulathur – 603203, Chengalpattu District, Tamil Nadu **Academic Year: 2024 - 2025 - Odd Semester**

**Test: CLAT2 Batch 1 – SET A Date: 22.11.2024 Course Code & Title: 21GNH101J Philosophy of Engineering Duration: 75 min Year & Sem: I year & I Sem Max. Marks: 35 Registration Number:**

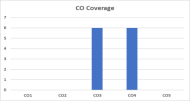
| **Part – A**  **(10 \* 1 = 10 Marks)**  **Instructions: Answer all the Questions** | | | | | |
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| **Q.**  **No** | **Question** | **Marks** | **BL** | **CO** | **PO** |
| **1** | \_\_\_\_\_\_\_\_\_\_ is the study of natural world as it is a) Engineering  b) Social  **c) Science**  d) Technology | **1** | **1** | **3** | **1** |
| **2** | The sum of all engineered tools, devices and process available is defined as  a) products  **b) technology**  c) science  d) epistemology | **1** | **1** | **3** | **1** |
| **3** | Which philosophical question pertains to the worth and value of engineering knowledge in the context of epistemology?  a) Ontological question  b) Epistemological question  c) Methodological question  **d) Axiological question** | **1** | **1** | **3** | **1** |
| **4** | \_\_\_\_\_\_\_\_\_\_ is organized under “Art vs Technique” or “Form vs Function”  a) Design as product  **b) Design as activity**  c) Design as planning  d) Design as epistemology | **1** | **1** | **3** | **1** |
| **5** | How the students should be motivated to get success in life?  **a) Intensive study**  b) Learning by recitation  c) Incidental study  d) Selected study | **1** | **2** | **3** | **1** |
| **6** | The \_\_\_\_\_\_ test your hypothesis by doing an experiment  **a) Scientific Method**  b) Addie Method  c) Holland Code  d) Engineering Method | **1** | **1** | **4** | **1** |

| **7** | The person who works to develop products by means of integrating technologies is refereed as  a) Testers  **b) Programmers**  c) Facilitators  a) Managers | **1** | **1** | **4** | **1** |
| --- | --- | --- | --- | --- | --- |
| **8** | 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** |
| **9** | \_\_\_\_\_\_\_\_\_\_ allows you to see where any improvements are needed.  a) Refine the design  b) Communicate the results  c) Create the solution  **d) Testing and evaluation** | **1** | **1** | **4** | **1** |
| **10** | The \_\_\_\_\_\_ of the data the system operates on is of the highest consideration when designing a reliable and fault tolerant architecture.  a) Security  **b) Integrity**  c) Consistency  d) Reliability | **1** | **2** | **4** | **1** |
| **Part –B**  **(1\* 10 = 10 Marks)**  **Instructions: Answer any ONE Question** | | | | | |
| **11** | **“Engineer as a professional who combines, in variable proportions, the qualities of a scientist, a sociologist, a designer, and a doer” – Elaborate this statement in the context of engineering dimension.**  **Solution** | **10** | **2** | **3** | **1** |

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| **12** | **What do you mean by CDIO engineers in industry? Explain in Detail.**  **Solution**  **CDIO ENGINEERS IN INDUSTRY**    Conceive:  • Defining Customer needs  • Considering technology  • Enterprise Strategy and regulations  • Developing Concepts, techniques and  • Business Plan  Design:  • Creating the design | **10** | **2** | **4** | **1** |

|  | • 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 |  |  |  |  |
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| **Part - C**  **(1\* 15 = 15 Marks)**  **Instructions: Answer any ONE Question** | | | | | |
| **13** | **Explain in detail about four questions of philosophy of engineering?**  **The four questions of Philosophy of Knowledge** 1. Ontological Question - a question that asks about the nature of reality, existence, or what is real.  What reality can we known?  2. Epistemological question - questions about knowledge, including how we know things, how we distinguish between knowledge and opinion, and how we justify beliefs  what is knowledge?  what knowledge can we get?  3. Methodological question -  how can we build that knowledge?  4. Axiological question  what is the value of knowledge we build? | **15** | **2** | **3** | **1** |
| **14** | **Explain in detail about the Operational factors in system design.**  **OPERATIONAL FACTORS IN SYSTEM DESIGN**  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** | **15** | **2** | **4** | **1** |

|  | **3. Deployment Strategy**  **4. Security**  **5. User Experience and Inclusivity**  **6. Recovery and Planning**  **7. Unit Testing**  **8. Application Performance Monitoring** |  |  |  |  |
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**Course Outcome (CO) and Bloom’s level (BL) Coverage in Questions  **