**SRM Institute of Science and Technology**

**College of Engineering and Technology**

**School of Computing**

**DEPARTMENT OF COMPUTING TECHNOLOGIES**

SRM Nagar, Kattankulathur – 603203, Chengalpattu District, Tamil Nadu

**Academic Year: 2024 - 2025 - Odd Semester**

**Test: CLAT 1** **Batch 2 – Set D -Key** **Date: 04.10.2024**

**Course Code & Title:** 21GNH101J Philosophy of Engineering  **Duration:** 50 minutes

**Year & Sem:** I Year & I Sem **Max. Marks:** 25

**Registration Number:**

| **Part - A**  **(5 \* 1 = 5 Marks)**  **Instructions: Answer all the Questions** | | | | | | | | | | | | | |
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| **Q. No** | **Question** | | | **Marks** | | **BL** | | **CO** | | **PO** | | **PI Code** | |
| **1** | The stage at which the distribution increases, demand increases and competition also increases.  a) Product Decline b) Product Maturity  c) **Product Growth** d) Product Development | | | **1** | | **1** | | **1** | | **6** | | **6.4.1** | |
| **2** | The first electrical engineer is considered to be\_\_\_, with his 1600 publication of De Magnete, who was originator of the term "electricity".  a) Savery b) **William Gilbert** c) Faraday d) Watt | | | **1** | | **1** | | **1** | | **1** | | **1.6.1** | |
| **3** | The first characteristic of \_\_\_\_\_\_is their theoretical focus on representation.  a) Ontology b) Application Ontology  c)**Reference Ontology** d) PLC | | | **1** | | **1** | | **2** | | **4** | | **4.5.1** | |
| **4** | \_\_\_\_\_is a basic good used in commerce that is interchangeable with other goods of the same type.  a) **Commodity** b) Livestock c) Investor d) Market | | | **1** | | **1** | | **2** | | **4** | | **4.5.1** | |
| **5** | \_\_\_\_\_ **Application** \_\_\_\_\_\_\_designed according to the viewpoint of an end-user in a particular domain | | | **1** | | **1** | | **1** | | **1** | | **1.5.1** | |
| **Part - B**  **(2\* 10 = 20 Marks)**  **Instructions: Answer any TWO Questions** | | | | | | | | | | | | | |
| **Q. No** | | **Question** | **Marks** | | **BL** | | **CO** | | **PO** | | **PI Code** | | |
| **6** | | Describe in detail about STEAM Pyramid educational model structure applied in teaching and learning to improve competitiveness in Science and Technology.  STEM education was introduced in order to improve competitiveness in Science and Technology in the United States in 2003. STEM teaches science, technology, engineering, mathematics in an integrated way. In 2007 George yakman has announced STEAM in addition art to the STEM. Yakman said by the STEAM education we can increase their relevance to real life and interests. Many education scholars into a unified art in STEM education, said be STEAM. The STEAM pyramid was built to help educators and students see the subjects involved in STEAM and the learning approaches practiced at each level. Understanding the framework is important for teachers to provide appropriate teaching plans and activities for their students. According to past studies, there are many benefits we derive from STEAM education. Among the benefits of STEAM education are: STEAM can attract students in science subjects. STEAM education can increase students' interest in science subjects in primary schools. The value of collaboration is the value of art that is the ability to collaborate and interact in groups. Therefore, STEAM is important in ensuring that creative students can be born In STEAM education, one of the key features is to encourage collaborative teaching.  STEAM can help improve social relationships among students through active learning through questioning and discussion activities. Transdiscipline through STEAM can help solve problems in society. Various inventions such as technological and scientific innovations can ease the burden of society while doing work. STEAM with the arts can help strengthen the foundation of science. Pupils use a variety of ways to produce their products based on science concepts. | **10** | | **2** | | **1** | | **12** | | **12.4.1** | | |
| **7** | | Discuss about various attributes required for engineers in order to recognize and solve the problems in detail.  Desired Attributes of an Engineer 1. Teamwork 2. Continuous learning 3. Creativity 4. Problem solving 5. Analytical ability 6. Communication skills 7. Logical thinking 8. Attention to detail 9. Mathematical ability 10. Leadership | **10** | | **2** | | **1** | | **12** | | **12.4.1** | | |
| **8** | | Explain in detail about product life cycle and discuss about the various stages in PLC  PLC is an assumption that every product goes through that involves the same pattern of introduction into the market, growth, maturity, and decline. As the product spends more time in the market and it makes its way through the cycle, its sales increase.  Stage 1: Product Development: The new product is introduced; this is when all of the research and development happens.  Stage 2: Product Growth: The product is more than an idea or a prototype. At this stage, the product is manufactured, marketed, and released.  Stage 3: Product Maturity: During this stage, the product is widely available, and there are many competitors in the marketplace.  Stage 4: Product Decline: The product is losing market share, or becoming obsolete.  Description: https://www.smartsheet.com/sites/default/files/IC-PLC_graph.jpg | **10** | | **2** | | **2** | | **12** | | **12.4.1** | | |

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

