**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 1 – Set B** **-Key** **Date: 04.10.2024**

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

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

Registration Number:

| **Part - A**  **(5 \* 1 = 5 Marks)**  **Instructions: Answer all the Questions** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| **Q. No** | **Question** | **Marks** | **BL** | **CO** | **PO** | **PI Code** |
| **1** | “Engine” is derived from the word  a) **ingenium** b) Invention  c) Energizer d) Enginium | **1** | **1** | **1** | **6** | **6.4.1** |
| **2** | Which of the following is the attributes of Engineers  a) Analytical ability b) Mathematical ability  c) Leadership d**) all of the above** | **1** | **1** | **1** | **1** | **1.6.1** |
| **3** | NGSS released in the year  a) 2019 b) **2013**  c) 2018 d)2014 | **1** | **1** | **1** | **1** | **1.6.1** |
| **4** | PLC refers to  a) Process Life Cycle  b) Provisional Life Cycle  c) **Product Life Cycle**  d) Product Life Chart | **1** | **1** | **2** | **4** | **4.5.1** |
| **5** | **\_\_\_\_ K-12** \_\_\_standards is the centering of engineering literacy for all students on the process of design | **1** | **1** | **2** | **4** | **4.5.1** |

| **Part - B**  **(2\* 10 = 20 Marks)**  **Instructions: Answer any TWO Questions** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| **Q. No** | **Question** | **Marks** | **BL** | **CO** | **PO** | **PI Code** |
| **6** | What are the different stages of engineering history? Explain the historical development of engineering with required diagrams.  **Ancient era**  The Acropolis andthe Parthenon in Greece, the Roman aqueducts, Via Appia and  the Colosseum, the Hanging Gardens of Babylon, the Pharos of Alexandria,  the pyramids in Egypt, Teotihuacán and the cities and pyramids of  the Mayan, Inca and Aztec Empires, the Great Wall of China, among many others, stand  as a testament to the ingenuity and skill of the ancient civil and military engineers.  The earliest civil engineer known by name is Imhotep. As one of the officials of  the Pharaoh, Djosèr, he probably designed and supervised the construction of  the Pyramid of Djoser (the Step Pyramid) at Saqqara in Egypt around 2630-2611 BC. He  may also have been responsible for the first known use of columns in architecture.  \***Middle era**  An Iraqi by the name of al-Jazari helped influence the design of today&#39;s modern  machines when sometime in between 1174 and 1200 he built five machines to pump  water for the kings of the Turkish Artuqid dynasty and their palaces. The double-acting  reciprocating piston pump was instrumental in the later development of engineering in  general because it was the first machine to incorporate both the connecting rod and the  crankshaft, thus, converting rotational motion to reciprocating motion.  **\* Modern era**  Electrical Engineering can trace its origins in the experiments of Alessandro  Volta in the 1800s, the experiments of Michael Faraday, Georg Ohm and others and the  invention of the electric motor in 1872. The work of James Maxwell and Heinrich  Hertz in the late 19th century gave rise to the field of Electronics. The later inventions of  the vacuum tube and the transistor further accelerated the development of Electronics  to such an extent that electrical and electronics engineers currently outnumber their  colleagues of any other Engineering specialty. | **10** | **2** | **1** | **12** | **12.4.1** |
| **7** | Engineers are the modern world’s creators, designers, analysts and constructors. Outline the skillsets that an engineer must possess.  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** | Define Ontology. Differentiate the reference ontology and application ontology.  Ontology is the branch of philosophy that studies concepts such as existence, being, becoming, and reality   | **Reference Ontology** | **Application Ontology** | | --- | --- | | theoretical Focus on representing | theoretical Focus on representing | | establishes consensus about meaning of terms | offers terminological services for semantic access, checking constraints between terms | | maximal coverage | provides a minimal terminological structure | | Fits the needs of a large community | fits the needs of a specific community | | Fits the needs of a large community | lightweight ontologies | | Can’t be derived from application ontology | can be derived from Reference ontology | | broad and deep | broad and deep | | designed according to strict ontological principles | designed according to the viewpoint of an end-user in a particular domain | | **10** | **2** | **2** | **12** | **12.4.1** |

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

