**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 A -Key** **Date: 04.10.2024**

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

**Year & Sem:** I year & 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** | The ability encompasses many of the characteristics are  a) Attention to detail b) Communication Skill  c) Problem Solving **d) Leadership** | **1** | **1** | **1** | **1** | **1.6.1** |
| **2** | The period lies between 1174 to 1200 is called  a) **Middle Era** b) Renaissance Era  b) Ancient Era d) Modern Era | **1** | **1** | **1** | **1** | **1.6.1** |
| **3** | The idea to build by making you into a rounded, capable person who can link all the knowledge together is  a) Logical thinking b) **Skill thinking**  c) Effective thinking d) logical and Effective thinking | **1** | **1** | **1** | **1** | **1.6.1** |
| **4** | The layer which is specific-domain independent is called a) Domain ontology b) Foundational ontology  c) **Reference ontology** d) Application ontology | **1** | **1** | **2** | **2** | **2.5.1** |
| **5** | \_\_ **Reference** \_\_\_ ontology type that attempt to represent deep knowledge of basic science in a principled way that allows them to be re-used in multiple ways | **1** | **1** | **2** | **2** | **2.5.1** |

| **Part - B**  **(2\* 10 = 20 Marks)**  **Instructions: Answer any TWO Questions** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| **Q. No** | **Question** | **Marks** | **BL** | **CO** | **PO** | **PI Code** |
| **6** | Describe the concept in engineering in terms of ancient, middle and modern era.  **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** | **2** | **2.5.1** |
| **7** | What is ABET? List the outcomes of ABET engineering criteria EC2000.  Are post-EC2000 engineering graduates any better prepared to enter the profession than  were their pre-EC2000 counterparts of a decade ago? That question is at the heart of this  three-year study, titled Engineering Change: A Study of the Impact of EC2000.  In 1996, the ABET Board of Directors adopted the  new set of standards, called Engineering Criteria 2000  (EC2000). EC2000 shifted the basis for accreditation  from inputs, such as what is taught, to outputs —  what is learned. The new criteria specify 11 learning  outcomes and require programs to assess and demon-  strate their students’ achievement in each of those  areas. EC2000 retains earlier accreditation standards’  emphases on the development of students’ mathemati-  cal, scientific, and technical knowledge, as well as  standards for program faculty and facilities, but it also  emphasizes developing other professional skills, such  as solving unstructured problems, communicating  effectively, and working in teams. In addition, EC2000  stresses awareness of ethical and contextual considera-  tions in engineering.  In 2002, ABET, Inc., commissioned the Center for  the Study of Higher Education at Pennsylvania State  University to undertake a three-and-a-half-year study  to assess whether the implementation of the new  EC2000 evaluation criteria is having the intended  effects. Engineering Change: A Study of the Impact of  EC2000 was designed to answer two primary questions:  Engineering Change:  A Study of the Impact of EC2000Lisa R. Lattuca, Patrick T. Terenzini, J. Fredricks Volkwein  Center for the Study of Higher Education,  The Pennsylvania State University  Are post-EC2000 engineering graduates any better prepared to enter the profession than  were their pre-EC2000 counterparts of a decade ago? That question is at the heart of this  three-year study, titled Engineering Change: A Study of the Impact of EC2000.  In 1996, the ABET Board of Directors adopted the  new set of standards, called Engineering Criteria 2000  (EC2000). EC2000 shifted the basis for accreditation  from inputs, such as what is taught, to outputs —  what is learned. The new criteria specify 11 learning  outcomes and require programs to assess and demon-  strate their students’ achievement in each of those  areas. EC2000 retains earlier accreditation standards’  emphases on the development of students’ mathemati-  cal, scientific, and technical knowledge, as well as  standards for program faculty and facilities, but it also  emphasizes developing other professional skills, such  as solving unstructured problems, communicating  effectively, and working in teams. In addition, EC2000  stresses awareness of ethical and contextual considera-  tions in engineering.  In 2002, ABET, Inc., commissioned the Center for  the Study of Higher Education at Pennsylvania State  University to undertake a three-and-a-half-year study  to assess whether the implementation of the new  EC2000 evaluation criteria is having the intended  effects. Engineering Change: A Study of the Impact of  EC2000 was designed to answer two primary questions:  What impact, if any, has EC2000 had on stu-  dent learning outcomes in ABET-accredited  programs and institutions?  What impact, if any, has EC2000 had on orga-  nizational and educational policies and prac-  tices that may have led to improved student  learning outcomes? | **10** | **2** | **1** | **2** | **2.5.1** |
| **8** | Explain the Ontological Layers with neat relevant diagram.    **Explain each Ontology** | **10** | **2** | **2** | **2** | **2.5.1** |

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

