**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: CLAT3** **Batch 2 – Set D** **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 | Which step comes after evaluating prototypes and gathering feedback?<br>a) **Finalizing the design**<br>b) Implementing and production<br>c) Monitoring and improving<br>d) Researching and gathering information | 1 | 1 | 4 | 1 |
| 2 | What is the purpose of defining design criteria in the engineering design process?<br>a) To create prototypes<br>b) To brainstorm ideas<br>**c) To establish requirements for the final design**<br>d) To evaluate and refine designs | 1 | 1 | 4 | 1 |
| 3 | What is a key principle of the methodology of engineering?<br>a) Adherence to strict regulations<br>**b) Creativity and innovation**<br>c) Speed of execution<br>d) Profit maximization | 1 | 1 | 4 | 3 |
| 4 | During which phase of the ADDIE model are instructional materials and activities created?<br>a) Analysis<br>b) Design<br>**c) Development**<br>d) Implementation | 1 | 1 | 4 | 4 |
| 5 | What does "scalability" refer to in system architecture?<br>a) The color scheme of the system<br>**b) The ability of handle increased traffic or growth**<br>c) The security of the system<br>d) The deployment process | 1 | 1 | 4 | 1 |
| 6 | Ethics is measured by the concept of _____<br>a) Sustainability<br>b) Diversity<br>c) Equity | 1 | 2 | 5 | 1 |

| | | | | | |
|---|---|---|---|---|---|
| | **d) Social license** | | | | |
| **7** | The _____ is noted for being the worlds largest technical professional organization.<br>a) National Society Professional Engineers<br>**b) IEEE**<br>c) American association engineering societies<br>d) Society of women engineers | **1** | **2** | **5** | **1** |
| **8** | Design as _____ is more affiliated with management of a wide range of fields from business to military and from hospitals to academy.<br>a) Engineering<br>b) Epistemology<br>**c) Planning**<br>d) Activity | **1** | **1** | **5** | **1** |
| **9** | _____ is the most discussed aspect of sustainability.<br>**a) Environment**<br>b) Economic<br>c) Ethical<br>d) Equity | **1** | **2** | **5** | **1** |
| **10** | The core concept of 3Es focusses on<br>a) Technology<br>b) Assets<br>c) Work<br>**d) Equity** | **1** | **2** | **5** | **6** |

**Part – B**
**(1* 10 = 10 Marks)**
**Instructions: Answer any ONE Question**

| Q. No | Question | Marks | BL | CO | PO |
|---|---|---|---|---|---|
| **11** | **Explain in detail on how Addie model is useful for building training support tools.**<br>**Solution**<br>The ADDIE model is the generic process traditionally used by instructional designers and training developers**.**<br>The five phases—Analysis, Design, Development, Implementation, and Evaluation—represent a dynamic, flexible guideline for building effective training and performance support tools. While perhaps the most common design model, there are a number of weaknesses to the ADDIE model which have led to a number of spin-offs or variations. It is an Instructional Systems Design (ISD) model..<br>Analysis > Design > Development > Implementation > Evaluation<br>**Diagram** | **10** | **1** | **4** | **1** |

| | | | | | |
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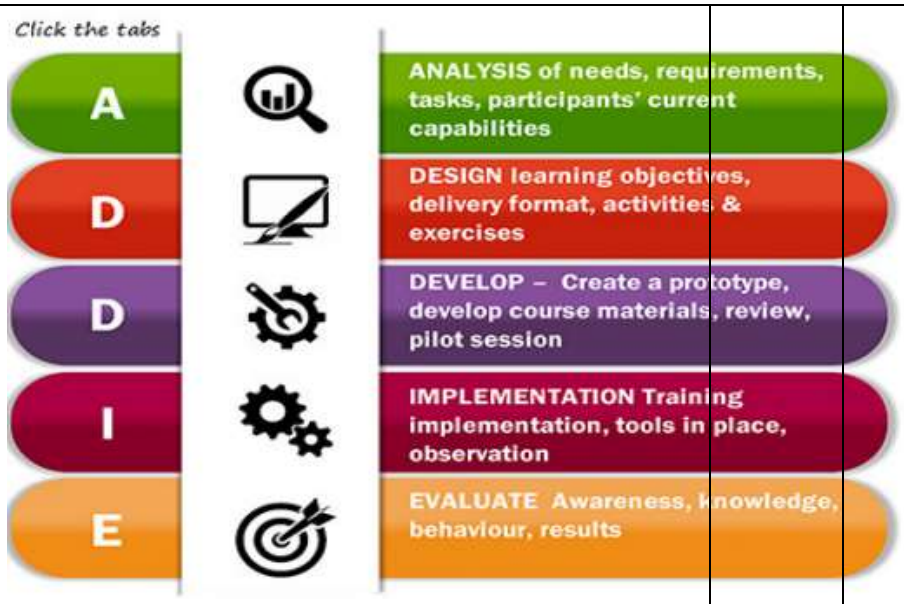
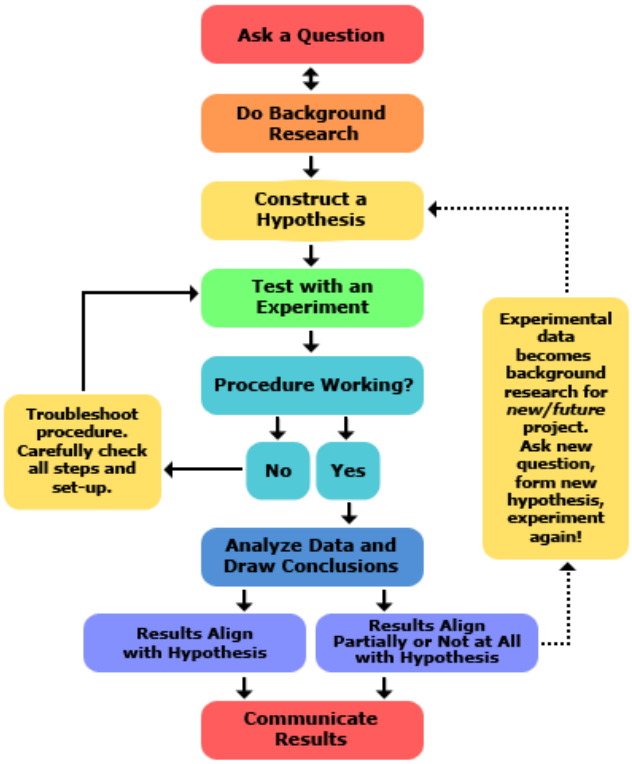
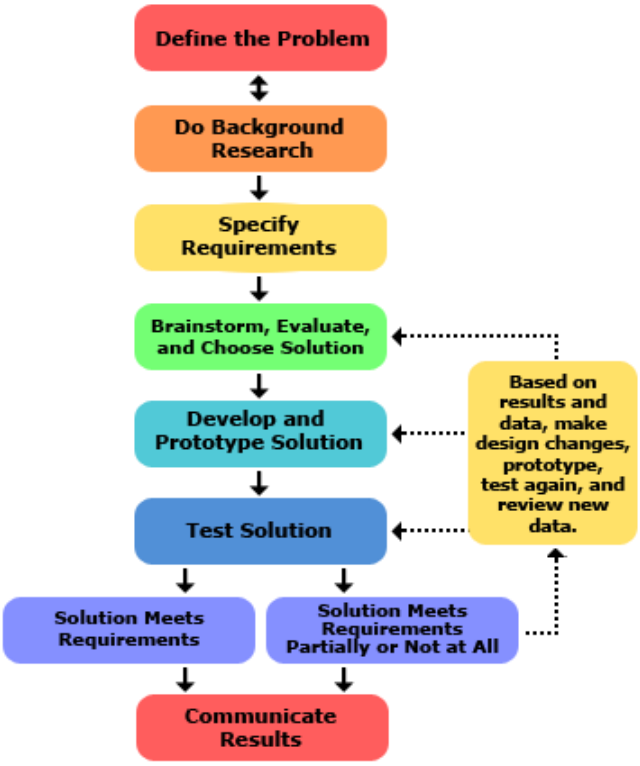
| |  | | | | |
| **12** | **Summarize the various professional organization for engineers.**<br>***PROFESSIONAL ORGANIZATIONS FOR ENGINEERS***<br>Engineering professional organizations provide important support to engineers. These groups work to advocate on behalf of engineers, provide professional development opportunities, publish updates on the latest innovations, and connect engineers to the community. Anyone pursuing a Master of Engineering Management degree would benefit from becoming a member of at least one of these organizations. Below find the top 5 engineering associations, which serve both the general profession of engineering as well as specific industries within the field.<br>• National Society of Professional Engineers<br>• IEEE<br>• American Association of Engineering Societies<br>• Society of Women Engineers<br>• International Engineering Consortium | **10** | **2** | **5** | **1** |
| **Part – C**<br>**(1* 15 = 15 Marks)**<br>**Instructions: Answer any ONE Question** | | | | | |
| **13** | **Explain the key differences between the scientific method and the engineering design process. How do these processes cater to different objectives in the fields of science and engineering?**<br>**DIFFERENCE BETWEEN SCIENTIFIC METHOD AND ENGINEERING DESIGN** | **15** | **2** | **4** | **1** |

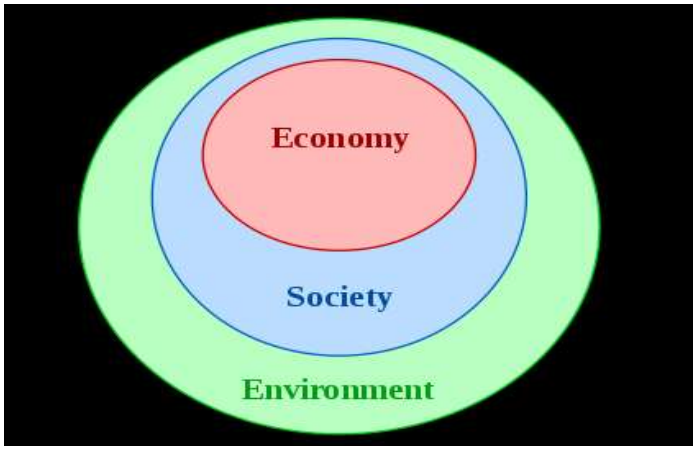
## Scientific Method




## Engineering Method




| The Scientific Method | The Engineering Design Process |
|---|---|
| State your question | Define the problem |
| | |

| | | | | | |
|---|---|---|---|---|---|
| | research | research | | | |
| | Formulate your hypothesis, identify variables | Specify requirements | | | |
| | Design experiment, establish procedure | Create alternative solutions, choose the best one and develop it | | | |
| | Test your hypothesis by doing an experiment | Build a prototype | | | |
| | Analyze your results and draw conclusions | Test and redesign as necessary | | | |
| | Communicate results | Communicate results | | | |
| **14** | **What is the essential engineer role to achieve the sustainable development?**<br>**ENGINEER'S ROLE TO ACHIEVE SUSTAINABLE DEVELOPMENT:**<br>• Recognize that though their activity may be local and immediate, the potential impacts of their work may be global and long-lasting<br>• have an understanding of other relevant social and cultural structures outside their own normal community of practice<br>• understand their important role in the sustainable development of communities<br>• recognize the impacts of an engineering project on communities, global or local, and incorporate the views and concerns of the communities<br>  <br><br>Apply professional and responsible judgment and take a leadership role Engineering is a profession with a strong ethical dimension. Engineers have an important role in providing solutions to the problems | **15** | **1** | **5** | **1** |

| | | | | | |
|---|---|---|---|---|---|
| | such as poverty, under-development and environmental degradation. | | | | |

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