



M.TECH DEGREE EXAMINATIONS: DEC 2022

(Regulation 2018)

First Semester

MASTERS OF TECHNOLOGY MANAGEMENT

P18TME0034: Applied Design Thinking

COURSE OUTCOMES

- CO1:** Apply a scientific method to define & test various hypotheses to mitigate the inherent risks in product innovations.
- CO2:** Demonstrate the learning to identify different beneficiaries & market segments, define the early adopters and choose the target user/buyer from the selected market.
- CO3:** Design the solution [MUP] concept based on the proposed value defined for the target customer exploring various alternate solutions to achieve value-price fit.
- CO4:** Develop skills in empathizing, critical thinking, analyzing, storytelling & pitching.

Time: Three Hours

Maximum Marks: 100

Answer all the Questions: -

PART A (10 x 1 = 10 Marks)

1. What are the steps of the Design Thinking Process? CO1 [K₂]
- a) Understand > Draw > Ideate > Create > Test b) Empathize > Define > Ideate > Prototype > Test
- c) Empathize > Design > Implement > Produce > Test d) Understand > Define > Ideate > Produce > Try
2. Types of Adoption Barriers include CO2 [K₂]
- a) Time consumption b) Accessibility
- c) Skills/Expertise d) All the above
3. Which of the following is TRUE? CO1 [K₂]
- a) By empathizing, one can define a problem well, and conceive creative solutions resulting in breakthrough innovations b) Empathy makes you a better person, but innovation requires a lot of box thinking and not empathy
- c) Inventions are sudden eureka moments and not really a part of research or exploration d) None of the above
4. If you are an innovator, and if you come across any problem, the first step is to _____ CO2 [K₂]
- a) Ideate a solution b) Build Prototype
- c) Understand the problem thoroughly d) None of the above

5. What is the first step in the Design Thinking Process? CO1 [K₂]
 a) Define b) empathize
 c) Ideate d) Prototype
6. Which is NOT a good practice for preparing a presentation CO4 [K₂]
 a) Visualize your content b) Keep it simple
 c) Use big paragraphs as content d) Bullet/Highlight your key points
7. Process innovation refers to _____ CO3 [K₂]
 a) The development of a new service b) The development of a new product
 c) The implementation of a new or improved production method d) The development of new products or services
8. How do you conduct customer discovery? CO2 [K₂]
 a) E-Mail b) Phone Call
 c) Interview d) All the above
9. Aravind Eye Care System (AECS), an Indian eye care provider for millions of low-income people has been using design thinking in its approach for a long time. Which of the below statements are examples of design thinking at AECS? CO3 [K₂]
 a) AECS provides buses from remote locations to the AEC centre to provide transportation to its users, the poor people as they can't afford these b) AECS has developed a manufacturing facility which enables providing lenses at a fraction of the cost than the market price
 c) AECS has been using telemedicine trucks to enable expert advice of doctors at hospital d) All the above
10. Design Thinking is: CO1 [K₂]
 a) Thinking about design b) Designing ways in which people think
 c) Asking users to solve problems d) Defining, framing and solving problems from users' perspectives

PART B (10 x 2 = 20 Marks)

11. What are the stages of the design thinking process? CO1 [K₂]
12. What is human-centric design thinking? CO1 [K₂]
13. What kind of risk is associated with product innovations in the early stage that design thinking helps to mitigate? CO2 [K₂]
14. Explain the importance of problem validation CO3 [K₂]

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| 15. | What is an MUP & Why do you build it? | CO3 | [K ₂] |
| 16. | Why is design thinking more a science than an art? | CO1 | [K ₂] |
| 17. | What's the difference between a user and a customer | CO2 | [K ₂] |
| 18. | Problem Validation & Customer Discovery canvas helps in which stage of design thinking? | CO2 | [K ₄] |
| 19. | List the five factors of the Product innovation rubric. | CO1 | [K ₂] |
| 20. | What is the importance of the Value Proposition? | CO3 | [K ₂] |

PART C (6 x 5 = 30 Marks)

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| 21. | Explain the different risks in Product Innovation. | CO1 | [K ₂] |
| 22. | Describe customer-centric innovation with an example. | CO1 | [K ₂] |
| 23. | Explain the best practices for preparing the pitch for the investors | CO4 | [K ₂] |
| 24. | Explain the various metrics of challenge brief canvas with an example | CO3 | [K ₂] |
| 25. | Describe the concept generation process in building an MUP | CO3 | [K ₂] |
| 26. | Summarize the importance of storytelling during presentation | CO4 | [K ₂] |

Answer any FOUR Questions

PART D (4 x 10 = 40 Marks)

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| 27. | Explain all stages of the design thinking used for product innovation with target customers | CO1 | [K ₂] |
| 28. | Describe the process involved in problem validation and customer discovery | CO2 | [K ₂] |
| 29. | Hull cleaning is an integral part of any moored or berthed vessels maintenance program to prevent the vessel from slowing down with growth and increasing fuel costs. Due to the effect of barnacles and other biofouling processes in the ship's hull, the drag of the ship increases thereby causing an extra fuel consumption expense of 40%. Currently, there is no other mechanism followed other than deploying manual labour for the inspection of the ship hull – Describe the value proposition for the problem statement. | CO3 | [K ₄] |
| 30. | Explain the MUP concept assessment technique with a suitable problem statement of your own | CO3 | [K ₅] |
| 31. | Summarize the Do's and Don'ts in preparing a presentation using the 3Min Pitch Canvas | CO4 | [K ₂] |
