

NAGARJUNA COLLEGE OF ENGINEERING AND TECHNOLOGY

Department of Mechanical Engineering

Even Semester 2023-24
Internal Assessment Test – I

Course Name: Innovation and Design Thinking	Course Code: 23IDT28	Semester: II
Date: 30-04-2024	Time: 1.00 PM to 2.00 PM	Max. Marks: 25

INSTRUCTIONS TO CANDIDATES

- ❖ Answer all the given questions
- ❖ Use only BLACK BALL POINT PEN for writing / darkening circles
- ❖ For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet
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Sl. No	QUESTIONS	COs	RBT Levels	Marks
1.	We would interview people to gain an understanding of how they feel during the _____ stage of Design Thinking. a. Define b. Empatize c. Ideate d. Prototype	CO1	L1	01
2.	How do you get the solution for a simple problem in thinking process. a. Judicial approach c. Synthetic approach b. Analytical approach d. General approach	CO1	L1	01
3.	MVP stands for a. Minimum viable product c. Maximum variation product b. Minimum variation product d. Minimum viable product	CO1	L1	01
4.	Choose option: why design thinking fails a. Expectation b. Good thinking c. Lack of patience d. None	CO1	L1	01
5.	An example of a product that shows someone how it works or what it looks like is called a. An idea b. A MVP c. An experiment d. A design	CO1	L1	01
6.	A prototype on the prototype stage should include all of these characteristics except which? a. Scaled-down b. Quickly assembled c. Low cost d. Final version	CO1	L1	01
7.	The process of creating evidence-based, interaction designs between human users and products or websites is called a. User experienced design c. Engineering design b. Process design d. None of these	CO1	L1	01
8.	The purpose of MVP is NOT a. Be able to test a product hypothesis with maximum resources b. Accelerate learning	CO1	L1	01

- c. Reduce wasted engineering hours
d. Get the product early to customers as soon as possible
9. During which stage would we Start looking for an alternative way of viewing the problem? CO1 L1 01
a. Define b. Empathize c. Prototype d. Test
10. Choose correct feature of design thinking CO1 L1 01
a. Finding simplicity in complexity c. Develop feasible solutions
b. Good looking and attractive product d. All the above
11. A good approach to empathy should not have the following CO2 L1 01
a. Judgement of other's opinion c. Curiosity
b. Optimism d. Respect for other's opinion
12. What should we do during empathy, engage? CO2 L1 01
a. Introduce yourself and make user feel comfortable.
b. Talk to the users at the same time to maximize our time
c. Simply the interview questions to "yes" and "no" types to ease the user's understanding
d. None of the above
13. _____ refers to any activity that takes information beyond text and numbers and into images, maps and stories. CO2 L1 01
a. Visualisation c. Journey Mapping
b. Value chain Analysis d. Rapid Concept Development
14. _____ offers ways to create better value for customers along the chain and uncovers important clues about partners' capabilities and intentions. CO2 L1 01
a. Visualisation c. Journey Mapping
b. Value chain Analysis d. Rapid Concept Development
15. At a deeper level, _____ is about seeing with our mind's eye: conjuring up mental images, vivid depictions of our ideas and insights about customers and their experiences, in a way that makes them human and compelling. CO2 L1 01
a. Journey Mapping c. Visualisation
b. Value chain Analysis d. Rapid Concept Development
16. _____ is an ethnographic research method that focuses on tracing the customer's "journey" as he or she interacts with an organization while in the process of receiving a service, with special attention to emotional highs and lows. CO2 L1 01
a. Journey Mapping c. Visualisation
b. Value chain Analysis d. Rapid Concept Development
17. _____ are used to generate, visualize, structure, and classify ideas to look for patterns and insights that provide key design criteria. CO2 L1 01
a. Visualisation b. Thinking c. Discussing d. Mind maps

18. When people hear the term "innovation process," concept development may be the only thing they think of, and they often equate it with _____.
 a. Assumption testing c. Visualisation
 b. Brain storming d. Discussing CO2 L1 01
19. _____ approach acknowledges that any new business concept is actually a hypothesis a well-informed guess about what customers desire and what they will value.
 a. Visualisation c. Prototyping
 b. Discussing d. Assumption testing CO2 L1 01
20. _____ is based on the belief that the users' presence is essential in the creative process, as the users provide insight into what is valuable to them.
 a. Brain storming b. Thinking c. Co-creation d. Visualize CO2 L1 01
21. BPM is the new method followed by most of the organisation in recent time
 a. Agree b. Disagree CO3 L1 01
22. Way of dividing business processes into their basic components: functions and performed for the business is called,
 a. Building Product Management c. Business Product Management
 b. Business Process Modelling d. Basic Product Management CO3 L1 01
23. Scope of strategic innovation is based on the _____ dimensions
 a. One b. Two c. Five d. Seven CO3 L1 01
24. _____ happens when a new technology completely disrupts existing business or economy and creates a new business model
 a. Radical innovation c. Sustaining innovation
 b. Incremental innovation d. Disruptive innovation CO3 L1 01
25. Task planning is a simple utility tool that gives clear interpretation of tasks to be completed.
 a. True b. False CO3 L1 01



Course Name: Innovation and Design Thinking	Course Code: 23IDT28	Semester: II
Date: 14-06-2024	Time: 1.00 PM to 2.30 PM	Max. Marks: 25

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Sl. No	QUESTIONS	COs	RBT Levels	Ma
1.	Which of the following sequences in correct for waterfall methodology? a. Define- Design- Develop- Test- Deploy b. Define- Develop- Design- Test- Deploy c. Define- Design- Develop- Deploy- Test d. Design- Define- Develop- Test- Deploy	CO3	L1	0
2.	Agile methods are popular in, a. Software industry b. Manufacturing industry c. Textile industry d. Cement industry	CO3	L1	01
3.	Software Industry uses agile methods to counter the problem raised in coding. a. True b. False	CO3	L1	01
4.	Textile Industry uses agile methods to counter the problem raised in productions. a. True b. False	CO3	L1	01
5.	Medical Industry uses agile methods to counter the problem raised during emergencies. a. True b. False	CO3	L1	01
6.	Design thinking for business problem Extreme Competition, a. Prototyping b. Experience Design c. Humanization d. Business Model Design	CO4	L1	01
7.	Design thinking solution for business problem Standardization a. Prototyping b. Experience Design c. Humanization d. Business Model Design	CO4	L1	01
8.	Design thinking solution for business problem creative culture a. Prototyping c. Humanization	CO4	L1	01

- b. Experience Design
d. Business Model Design
9. Design thinking solution for business problem strategy and organisation, CO4 L1 01
a. Prototyping
b. Experience Design
c. Humanization
d. Business Model Design
10. Match the following business problems and corresponding solutions. CO4 L1 01
- | Business Problem | | Design thinking Solution | |
|------------------|---------------------------|--------------------------|-----------------------|
| A. | Strategy and organisation | i. | Experienced design |
| B. | Standardization | ii. | Business model design |
| C. | Creative Culture | iii. | Humanization |
| D. | Extreme competition | iv. | Prototyping |
- a. A-1, B-2, C-3, D-4
b. A-2, B-3, C-4, D-1
c. A-4, B-2, C-3, D-1
d. A-3, B-1, C-2, D-4
11. The extent to which the external environment can be influenced and shaped by the actions of companies or industries is called. CO4 L1 01
a. Predictability
b. Malleability
c. Both a and b
d. None of these.
12. The extent to which the future of the external environment can be forecasted, which depends on the degree of complexity and speed of change is called. CO4 L1 01
a. Predictability
b. Malleability
c. Both a and b
d. None of these.
13. _____ is the most important skill in any team or organisation which determines the outcome. CO4 L1 01
a. Communication
b. Fast processing
c. Architectural Building
d. Experience
14. Fast processing plays an important skill in any team which is outcome oriented CO4 L1 01
a. True
b. False
15. Experience plays an important skill in any team which is outcome oriented CO4 L1 01
a. Agree
b. Disagree
16. In Design Thinking, engagement, observations and immersion do which of the following? CO5 L1 01
a. Helps us understand why humans exist
b. Help us understand the pain points of our customers
c. Help us ignore our users
d. Help us make better prototypes
17. Why are we learning Design Thinking & the launch Cycle? CO5 L1 01
a. It helps us to learn to ask better questions
b. It helps us to do better in school in general
c. It helps us learn how to collaborate as a team
d. It helps build creativity and innovation skills that we will need for future careers.

18. Whose point of view will you take up in Empathize? CO5 L1 01
- User of a product/service
 - Customer who pays for a product/ service
 - Customer who doesn't pay for a product/ service
 - Manufacturer or service provider
19. What are the characteristics that one needs to keep track of while creating a persona? CO5 L1 01
- Gender, Location and age
 - Just Occupation
 - Occupation and People
 - Occupation and Company
20. TRIZ is the theory of CO5 L1 01
- The evolution of technical and non-technical systems
 - Problem-solving Thinking
 - Inventiveness
 - Critical
- Which of the statements given above is/are correct?
- i and ii only
 - i,ii and iii only
 - ii and iii only
 - i,ii,iii and iv
21. Why is TRIZ methodology used in Design Thinking? CO5 L1 01
- To systematically solve problems
 - To trigger an idea to solve the problem
 - To grant a patent for an Invention
 - To license a technology
- Which of the statements given above is/are correct?
- i-ii
 - ii-iii
 - iii-iv
 - iv-i
22. What is the best way of learning about customers' condition? CO5 L1 01
- Send an easy to access and easy to understand survey/questionnaire
 - Send a survey in the language that the customers are comfortable with
 - Ask the customers' neighbours or friends about their usage of the product/service
 - Visit the customers and observe them using the product/service
23. Asking the customers' neighbors or friends about their usage of the product/service is the best way of learning about customers' condition. CO5 L1 01
- Agree
 - Disagree
24. After completing the solve phase, what should be the next immediate step? CO5 L1 01
- Verify whether the solution is desirable
 - Verify whether the Solution addresses the conflict identified
 - Verify whether the solution is feasible
 - Verify if the solution is capital intensive
25. Visiting the customers and observe them using the product/service is the best way of learning about customers' condition. CO5 L1 01
- Agree
 - Disagree

INSTRUCTIONS TO CANDIDATES

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1. In the design-thinking process, what is the first question to answer? COs
CO1
 - a. What do people need?
 - b. Will this idea make money?
 - c. Is this idea feasible?
 - d. How can this be implemented?
2. During which stage would we Start looking for an alternative way of viewing the problem? CO1
 - a. Define
 - b. Empathize
 - c. Prototype
 - d. Test
3. During which stage would we analyze observations and data collected in order to identify the core problem CO1
 - a. Define
 - b. Empathize
 - c. Ideate
 - d. Test
4. The purpose of MVP is NOT CO1
 - a. Be able to test a product hypothesis with maximum resources
 - b. Reduce wasted engineering hours
 - c. Accelerate learning
 - d. Get the product early to customers as soon as possible
5. The goal of the prototype phase is? CO1
 - a. To understand what component of your idea didn't work
 - b. To understand what component of your idea work
 - c. Both of them
 - d. None of them
6. When do we create a 3D model of the design CO1
 - a. Ideate
 - b. Design thinking
 - c. Test
 - d. Prototype
7. Choose correct feature of design thinking CO1
 - a. Finding simplicity in complexity
 - b. Develop feasible solutions
 - c. Good looking and attractive product
 - d. All the above
8. The MVP offers the possibility to find out potential users' opinions, and what they want to see in the final product. CO1
 - a. True
 - b. False
9. Choose why startups fail CO1
 - a. Run out of cash
 - b. Poor Product
 - c. Get out competed
 - d. All of the above
10. The goal of the prototype phase is CO1
 - a. To understand what component of your idea worked
 - b. To understand what component of your idea didn't work
 - c. Both of them "a" and "b"
 - d. None of These
11. _____ is an ethnographic research method that focuses on tracing the customer's "journey" as he or she interacts with an organization while in the process of receiving a service, with special attention to emotional highs and lows. CO2

- a. Journey Mapping
- b. Value chain Analysis

- c. Visualisation
- d. Rapid Concept Development

12. _____ is used with the objective of identifying needs that customers are often unable to articulate. CO2
 a. Visualisation b. Value Chain Analysis c. Journey Mapping d. Rapid Concept Development
13. Experience mapping is also known as _____. CO2
 a. Visualisation b. Value chain Analysis c. Journey Mapping d. Rapid Concept Development
14. _____ examines how an organization interacts with their partners to produce, market, and distribute new offerings. CO2
 a. Visualisation b. Value chain Analysis c. Journey Mapping d. Rapid Concept Development
15. _____ is used to represent how ideas or other items are linked to a central idea and to each other. CO2
 a. Mind Mapping b. Experience Mapping c. Visualisation d. Rapid Concept Development
16. _____ are used to generate, visualize, structure, and classify ideas to look for patterns and insights that provide key design criteria. CO2
 a. Visualisation b. Discussing c. Thinking d. Mind maps
17. Thinking is used to generate, visualize, structure, and classify ideas to look for patterns and insights that provide key design criteria. CO2
 a. Agree b. Disagree
18. _____ is a tool for using the insights and design criteria we have generated to develop new business opportunities. CO2
 a. Mind Mapping b. Experience Mapping c. Visualisation d. Rapid Concept Development
19. Experience Mapping is a tool for using the insights and design criteria we have generated to develop new business opportunities. CO2
 a. True b. False
20. When people hear the term "innovation process," concept development may be the only thing they think of, and they often equate it with _____. CO2
 a. Assumption testing b. Brain Storming c. Visualisation d. Discussing
21. BPM stands for Business Product Management CO3
 a. True b. False
22. Allow openness means _____. CO3
 a. As a company or leader create a transparent environment
 b. Enterprise resource planning
 c. Call for improvement within the team or organisation
 d. Generate the tests and improve skills
23. Advantages of Business Process Modelling CO3
 a. Align operations with business strategy c. Increase control and consistency
 b. Improves process communication and operational efficiencies d. All of these
24. BPM replaced the organization's previous effective packages, CO3
 a. TMS b. TQM c. Both a and b d. None of above

25. Agile goal of the organisation drives continuous
a. Negotiations b. Development c. Running d. Working CO3
26. Task planning is a simple utility tool that gives clear interpretation of tasks to be completed.
a. True b. False CO3
27. _____ is an iterative and incremental method of managing development and design.
a. Waterfall Model b. Cyclic Methodology c. Agile Methodology d. All of the above CO3
28. Waterfall model methodology is an iterative and incremental method of managing development and design.
a. True b. False CO3
29. Which of the following sequences is correct for waterfall methodology?
a. Define- Design- Develop- Test- Deploy c. Define- Develop- Design- Test- Deploy
b. Define- Design- Develop- Deploy- Test d. Design- Define- Develop- Test- Deploy CO3
30. Agile methods are popular in,
a. Software industry b. Textile industry c. Manufacturing industry d. Cement industry CO3
31. Design thinking solution for business problem growth is
a. Strategic Foresight b. Experience Design c. Sensing d. Story telling CO4
32. Strategic innovation provides deeper understanding of the customers' needs and demands and provide innovative strategic for the growth of the market approach is called as
a. Managed innovation b. Strategic Alignment c. Customer Insight d. Industry Foresight CO4
33. In _____ innovations, one or more components of a product is changed while the overall design stays the same.
a. Disruptive b. Modular c. Sustaining d. Architectural CO4
34. In disruptive innovations, one or more components of a product is changed while the overall design stays the same.
a. Agree b. Disagree CO4
35. Growth needs a strategy, and every strategy needs,
a. An idea b. A story c. A friend d. A well-wisher CO4
36. Stories add this to the business logic
a. Sense b. Redefine the value c. Emotional dimension d. None of these CO4
37. How to tell a great story that will inspire senior executives and employees alike? Make it,
a. Collaborative b. Tangible and fun c. Informative d. All of these CO4
38. The extent to which the external environment can be influenced and shaped by the actions of companies or industries is called.
a. Predictability b. Malleability c. Both a and b d. None of these CO4
39. The extent to which the future of the external environment can be forecasted, which depends on the degree of complexity and speed of change is called.
a. Predictability b. Malleability c. Both a and b d. None of these CO4
40. The goal of business strategy is about finding the _____ between predictability and CO4

malleability.

a. Imbalance

b. Balance

41. Why is TRIZ methodology used in Design Thinking?

CO

i. To systematically solve problems

iii. To trigger an idea to solve the problem

ii. To grant a patent for an Invention

iv. To license a technology

Which of the statements given above is/are correct?

a. i-ii

b. ii-iii

c. iii-iv

d. iv-i

42. The number of levels for the Multi-Why analysis of a specific problem depends on factors such as:

CO5

i. Scope of domain expertise within the team

iii. Weekend Lockdowns

ii. Limits due to natural phenomena

iv. Administrative Limitations

Which of the statements given above is/are correct?

a. i-ii-iii

b. i-iii-iv

c. ii-iii-iv

d. i-ii-iv

43. While analyzing our motive is to land on the solution to the problem identified.

CO5

a. True

b. False

44. What is the best way of learning about customers' condition?

CO5

a. Send an easy to access and easy to understand survey/questionnaire

b. Send a survey in the language that the customers are comfortable with

c. Ask the customers' neighbors or friends about their usage of the product/service

d. Visit the customers and observe them using the product/service

45. Models provide a more legitimate result as

CO5

a. Gap between design and engineering is narrowed

c. Team has the courage to take action

b. Find the re-engineering plans

d. Leading to agile excellence

46. Total quality management (TQM) and Time and Movement (TMS) packages are very well versed and far better than Business Process Modelling.

CO5

a. True

b. False

47. Select the example for scenario-based prototyping

CO5

a. Redesigning the look and feel of an e-commerce site

c. Redesigning the book cover

b. Defining the process of updating a software

d. Releasing the examination results

48. Which of the following qualifies as a conflict?

CO5

a. Getting married to the person of choice and not having to pay dowry

b. Traveling to college with friends in a shared vehicle - saving time, and money while keeping the company of choice

c. Using pulp for making juice while upcycling the peels for making manure

d. Hiring a consultant to make strategies to save money while paying the consultant exorbitantly

49. Redesigning the look and feel of an e-commerce site is an example for scenario-based prototyping

CO5

a. True

b. False

50. Occupation, position and companies in which they are working are the characteristics that one needs to keep track of while creating a persona?

CO5

a. True

b. False