USN ☐☐☐☐☐☐☐☐☐☐ Course Code | 2 | 1 | D | T | I | 3 | 9 |

Third Semester B.E. Degree Examinations, April/May 2023
DESIGN THINKING AND INNOVATION

Duration: 2 hr   **Max. Marks: 100**

Note: *1. All questions are compulsory 2. Each question carries 1 mark 3. Use only black ball point pen*
       4. Darkening two circles for the same question marks the answer invalid
       5. Damaging/overwriting using whiteners on the OMR are strictly prohibited.

<u>*Q. No*</u>   <u>*Question*</u>

1. What is the first step in the design thinking process?
   A) Empathy   **B)** Define   **C)** Ideate   **D)** Prototype

2. What is the main goal of the empathy phase in the design thinking process?
   A) understand the user's needs and wants   **B)** create a solution
   C) test the solution   **D)** refine the solution

3. What is the main purpose of the Define phase in the design thinking process?
   A) create a solution   **B)** understand the user's needs and wants
   C) identify the problem   **D)** refine the solution

4. What is the Ideate phase in design thinking?
   A) The phase where the user's needs and wants are understood   **B)** The phase where the problem is defined
   C) The phase where a solution is created   **D)** The phase where the solution is tested

5. What is the Prototype phase in design thinking?
   A) The phase where the solution is tested   **B)** The phase where the solution is refined
   C) The phase where a solution is created   **D)** The phase where the user's needs and wants are understood

6. What is the Test phase in design thinking?
   A) The phase where the solution is refined   **B)** The phase where the solution is tested
   C) The phase where a solution is created   **D)** The phase where the user's needs and wants are understood

7. What is the Refine phase in design thinking?
   A) The phase where the solution is refined   **B)** The phase where the solution is tested
   C) The phase where a solution is created   **D)** The phase where the user's needs and wants are understood

8. What is the main goal of design thinking in theory?
   A) To create innovative solutions to complex   **B)** To make a profit
   C) To follow a set of strict rules and guideline   **D)** To solve problems in a logical and structured way

9. How is design thinking applied in practice?
   A) By following a strict set of rules and guidelines   **B)** By using a user-centered approach to solving problems
   C) By relying solely on existing solutions   **D)** By following a linear process

10. What are some methods used in the Ideate phase to generate ideas?
    A) Brainstorming, mind-mapping, and scenario planning   **B)** Surveys, focus groups, and interviews
    C) Problem statement creation and analysis   **D)** Testing and evaluating

11   Why is it important to generate multiple ideas in the Ideate phase?
      A) It helps to ensure that the best solution is chosen   **B)** It helps to create a solution that meets the user's needs
      C) It provides multiple options for testing and evaluating   **D)** The phase where the solution is tested

12   What is the role of creativity in the Ideate phase of design thinking?
      A) To create a solution that is profitable   **B)** To generate new and innovative ideas
      C) To test the solution   **D)** To understand the user's motivations and

13   What is the main goal of the Prototype phase in design thinking?
      A) To generate ideas for a solution   **B)** To create a physical or visual representation of the solution
      C) To test the solution   **D)** To define the problem

14   Why is the Prototype phase important in design thinking?
      A) It helps to create a solution that meets the user's needs   **B)** It helps to generate ideas for a solution
      C) It helps to test and evaluate the solution   **D)** It helps to understand the user's motivations and behaviours

15   What are some types of prototypes that can be created in the Prototype phase?
      A) Physical prototypes, digital prototypes, and wire frames   **B)** Surveys, focus groups, and interviews
      C) Problem statement creation and analysis   **D)** Testing and evaluating

16   Design thinking principles do not include:
      A) Feasibility   **B)** Viability   **C)** Desirability   **D)** Credibility

17   What is a shared model in team-based design?
      A) A shared understanding of the design process among team members
      B) A shared vision of the final product or solution
      C) A shared set of tools and techniques used by the team
      D) A shared understanding of the design problem and user needs

18   What is the MVP (Minimum Viable Product)?
      A) A fully functional and polished product
      B) A basic version of a product with only the essential features
      C) A product with a complete set of features and functionality
      D) A product with limited functionality and features

19   What is the purpose of creating an MVP?
      A) To gather feedback from users and make improvements   **B)** To quickly launch a fully functional product
      C) To test market demand   **D)** To have a complete product with all features and functionality

20   What are the components of an MVP?
      A) Essential features and functionality   **B)** Complete set of features and functionality
      C) It allows for immediate market release   **D)** Polished design and user interface

21   What are the limitations of an MVP approach?
      A) It may not fully address user needs or solve the problem it was intended to solve
      B) It may not have the design and user interface desired by users
      C) It may not have all the features and functionality desired by users
      D) All of the above

22   What is Fidelity Prototyping in design thinking?
      A) The process of creating a detailed and functional prototype   **B)** The process of creating a basic and rough prototype
      C) The process of testing the prototype   **D)** The process of gathering user feedback on the prototype

23   What are some of the common tools used in Design Thinking?
      A) Mind maps   **B)** User research and surveys   **C)** Prototyping tools   **D)** All of these

24. What is the purpose of using mind maps in Design Thinking?
    A) To gather and organize information
    B) To create detailed and functional prototypes
    C) To validate the viability of the product or solution
    D) To gather user feedback and improve the product

25. What are some of the commonly used prototyping tools in Design Thinking?
    A) Sketch
    B) In Vision
    C) Axure
    D) All of these

26. What are some common methods of capturing user interactions in real-time design interaction
    A) User observation and testing
    B) Surveys and questionnaires
    C) Heat maps and click tracking
    D) All of these

27. What is the purpose of enabling efficient collaboration in digital design spaces?
    A) To improve communication and collaboration among team members
    B) To reduce errors and improve the quality of the final product
    C) To increase productivity and save time
    D) All of the above

28. What are some common tools used for enabling efficient collaboration in digital design spaces?
    A) Project management software
    B) Video conferencing and screen sharing tools
    C) File sharing and version control platforms
    D) All of the above

29. What are some challenges of enabling efficient collaboration in digital design spaces?
    A) Resistance to change and adoption of new tools
    B) Integration with existing systems and processes
    C) Data security and privacy concerns
    D) All of the above

30. What is the primary goal of Design Thinking in Information Technology?
    A) To create aesthetically pleasing products
    B) To solve complex problems in a user-centered way
    C) To create products with the latest technology
    D) To create products with the lowest cost

31. To empathize, one has to
    A) Observe
    B) Engage
    C) Listen
    D) All of these

32. Which of the following is NOT one of the five stages of Design Thinking?
    A) Refine
    B) Ideate
    C) Test
    D) Analyze

33. What is the purpose of prototyping in Design Thinking?
    A) To validate assumptions
    B) To generate ideas
    C) To produce the final product
    D) To conduct market research

34. What is the main benefit of involving users in the Design Thinking process?
    A) To get their feedback on the design
    B) To increase their satisfaction with the product
    C) To reduce the risk of failure
    D) To improve the aesthetic of the product

35. What is the role of iteration in Design Thinking?
    A) To make changes to the design based on feedback
    B) To make the design more complex
    C) To replace user feedback with expert opinions
    D) To make the design more aesthetically pleasing

36. What is the primary benefit of using Design Thinking in Information Technology?
    A) Improved customer satisfaction
    B) Increased profitability
    C) Faster time to market
    D) All of the above

37. What is the primary benefit of using Agile in a virtual collaboration environment?
    A) Improved communication and collaboration among team members
    B) Improved efficiency and productivity
    C) Improved customer satisfaction
    D) All of the above

38. What is the role of prototyping in Design Thinking for Agile Software Development?
    A) To provide a visual representation of the software
    B) To test and validate ideas with users
    C) To generate new ideas and solutions
    D) To track the progress of the software development

39. What is the role of experimentation in Design Thinking for Strategic Innovation?
    A) To test and validate innovative solutions
    B) To prioritize tasks and activities for innovation
    C) To generate new ideas and solutions
    D) To track the progress of innovation

40   What is the role of prototyping in Design Thinking for Strategic Innovation?
A) To provide a visual representation of innovative solutions
B) To test and validate innovative solutions
C) To generate new ideas and solutions   **D)** To track the progress of innovation

41   What is the main advantage of using Design Thinking for Strategic Innovation over traditional approaches?
A) Improved customer satisfaction   **B)** Improved efficiency and productivity
C) Improved innovation outcome   **D)** All of the above

42   What is Growth Design Thinking?
A) A process to help businesses grow and increase profitability
B) A process to design physical products
C) A process for improving customer satisfaction   **D)** A process for maintaining the status quo

43   What is the goal of Growth Design Thinking?
A) To improve efficiency and productivity   **B)** To generate new ideas and solutions
C) To increase revenue and market share   **D)** To maintain the status quo

44   What is the role of data-driven decision making in Growth Design Thinking?
A) To make decisions based on data and insights   **B)** To prioritize tasks and activities for growth
C) To generate new ideas and solutions   **D)** To track the progress of growth

45   What is the main advantage of using Growth Design Thinking over traditional business growth approaches?
A) Improved customer satisfaction   **B)** Improved efficiency and productivity
C) Improved business growth outcomes   **D)** All of the above

46   What is the main goal of using Design Thinking approach for business growth?
A) To generate new ideas and solutions   **B)** To improve business performance and competitiveness
C) To increase customer satisfaction   **D)** To maintain the status quo

47   What is the main advantage of using Design Thinking approach for business growth over traditional business growth approaches?
A) Improved customer satisfaction   **B)** Improved efficiency and productivity
C) Improved business growth outcomes   **D)** All of the above

48   What is the main purpose of storytelling in representation?
A) To provide data and statistics   **B)** To entertain and engage the audience
C) To communicate information and ideas   **D)** To provide technical details

49   What is the main benefit of using change design thinking to solve complex problems?
A) Increased innovation and positive impact   **B)** Improved efficiency and productivity
C) Reduced risk and uncertainty   **D)** All of the above

50   What is the main purpose of change design thinking?
A) To solve complex problems and bring about positive change
B) To create new products and services
C) To increase efficiency and productivity   **D)** To manage risk and uncertainty

51   What is the role of intuition in sense making?
A) Rely on past experiences and gut feelings to make decisions
B) Systematically analyze data an information   **C)** Collaborate with others to generate new ideas
D) Evaluate and select the best option for action

52   What is the purpose of defining the design challenge?
A)To evaluate and select the best solution   **B)** To identify and understand the problem to be solved
C) To implement the chosen solution   **D)** To monitor and adjust the solution

53   What is the first step in defining the design challenge?
A) Conduct research to gather information   **B)** Define the problem statement
C) Brainstorm potential solutions   **D)** Evaluate and select the best solution

54   What is the role of empathy in defining the design challenge?
A) To monitor and adjust the solution   **B)**To evaluate and select the best solution
C) To implement the chosen solution
D) To understand the needs, desires, and perspectives of those affected by the problem

55   What is the role of creativity in defining the design challenge?
A) To generate innovative and unconventional ideas for addressing the problem
B) To evaluate and select the best solution
C) To implement the chosen solution   D) To monitor and adjust the solution

56   What can be included in a mind map design?
A) Text   B) Images   C) Links and notes   D) All of these

57   What is the first step in the design thinking approach for maintaining relevance?
A) Implement the chosen strategy   B) Develop a strategy for responding to market trends
C) Identify the current market trends   D) Monitor and adjust the strategy

58   What is the benefit of using the design thinking approach for maintaining relevance?
A) Improved competitiveness and market positioning   B) Increased customer satisfaction
C) Improved financial performance   D) All of the above

59   What is the primary goal of the design thinking approach for redefining value?
A) To create new value for customers through innovative products or services
B) To reduce costs and improve efficiency
C) To increase profits   D) To maintain relevance in the market

60   What is the first step in the design thinking approach for redefining value?
A) Implementing the chosen strategy   B) Developing a strategy for creating value
C) Identifying customer needs and preferences   D) Monitoring and adjusting the strategy

61   What is the role of empathy in the design thinking approach for redefining value?
A) To gain a deep understanding of customer needs and pain points
B) To evaluate and select the best strategy
C) To implement the chosen strategy   D) To monitor and adjust the strategy

62   What is the role of prototyping in the design thinking approach for redefining value?
A) To evaluate and select the best strategy   B) To test and refine new product or service concepts
C) To implement the chosen strategy   D) To monitor and adjust the strategy

63   What is the role of risk-taking in the design thinking approach for redefining value?
A) To embrace uncertainty and take bold steps to create new value for customers
B) To evaluate and select the best strategy
C) To implement the chosen strategy   D) To monitor and adjust the strategy

64   What is the benefit of using the design thinking approach for redefining value?
A) Increased customer satisfaction and loyalty   B) Improved financial performance
C) Improved competitiveness in the market   D) All of the above

65   What is the primary goal of the design thinking approach for addressing extreme competition?
A) To create a unique value proposition for customers
B) To reduce costs and improve efficiency
C) To increase profits   D) To maintain relevance in the market

66   What is the first step in the design thinking approach for addressing extreme competition?
A) Implementing the chosen strategy   B) Developing a strategy for differentiation
C) Identifying customer needs and preferences   D) Monitoring and adjusting the strategy

67   What is the benefit of using the design thinking approach for addressing extreme competition?
A) Increased customer satisfaction and loyalty   B) Improved financial performance
C) Improved competitiveness in the market   D) All of the above

68   What is the primary goal of the design thinking approach for addressing standardization?
A) To create a unique value proposition for customers
B) To streamline processes and improve efficiency
C) To increase profits   D) To maintain relevance in the market

69   What is the first step in the design thinking approach for addressing standardization?
A) Identifying process inefficiencies and areas for improvement
B) Developing a strategy for standardization
C) Implementing the chosen strategy   D) Monitoring and adjusting the strategy

70 What is the role of prototyping in the design thinking approach for addressing standardization?
A) To evaluate and select the best strategy   B) To test and refine new standardized processes
C) To implement the chosen strategy   D) To monitor and adjust the strategy

71 What is the benefit of using the design thinking approach for addressing standardization?
A) Improved customer satisfaction and loyalty   B) Improved efficiency and cost savings
C) Improved competitiveness in the market   D) All of the above

72 What is the goal of experience design?
A) To create functional products or services
B) To create enjoyable and meaningful experiences for users
C) To increase profits   D) To maintain relevance in the market

73 What is the role of empathy in experience design?
A) To gain a deep understanding of customer needs and preferences
B) To understand the experiences and perspectives of the users
C) To create a functional product or service   D) To increase profits

74 What is the role of experimentation in experience design?
A) To test and validate new ideas for creating user experiences
B) To evaluate and select the best design
C) To implement the chosen design   D) To monitor and adjust the design

75 What is the role of iteration in experience design?
A)To implement the chosen design   B) To evaluate and select the best design
C) To continuously refine and improve the user experiences   D) To monitor and adjust the design

76 What is the role of storytelling in experience design?
A) To create a narrative that connects the user to the product or service
B) To evaluate and select the best design
C) To implement the chosen design   D) To monitor and adjust the design

77 What is the benefit of using the experience design approach?
A) Improved customer satisfaction and loyalty   B) Improved product or service functionality
C) Improved brand recognition and loyalty   D) All of the above

78 What is the role of user research in experience design?
A) To gain insights into the needs, behaviours, and preferences of the users
B) To evaluate and select the best design
C) To implement the chosen design   D) To monitor and adjust the design

79 What is humanization in design?
A) The process of designing products or services that prioritize the needs and well-being of people
B) The process of designing products or services that prioritize profitability
C) The process of designing products or services that prioritize efficiency and functionality
D) The process of designing products or services that prioritize technology

80 What is the benefit of using the humanized design approach?
A) Improved customer satisfaction and loyalty   B) Improved product or service functionality
C) Improved brand recognition and loyalty   D) All of the above

81 What is the role of user research in humanized design?
A) To gain insights into the needs, behaviours, and well-being of people   B) To maximize profits
C) To prioritize efficiency and functionality   D) To prioritize technology

82 Why is a creative culture important for a business?
A) It attracts and retains top talent   B) It leads to improved customer experiences
C) It promotes new ideas and solutions   D) All of the above

83 How does a creative culture impact employee satisfaction and motivation?
A) Leads to increased job satisfaction and motivation
B) It leads to decreased job satisfaction and motivation
C) It has no impact on employee satisfaction and motivation
D) It depends on the individual and the situation

84   What is a key ingredient for a successful creative culture?
      A) Clear communication and expectations   **B)** Collaboration and teamwork
      C) Encouragement and recognition of employee contributions   **D)** All of the above
85   What is the main goal of rapid prototyping in design thinking process?
      A) To validate the final product   **B)** To test the feasibility of the design idea
      C) To develop the final product quickly   **D)** To test the design idea in the market
86   What is the most important aspect of rapid prototyping?
      A) Speed of   **B)** Quality of the   **C)** Cost of production   **D)** Attention to detail
      execution   prototype
87   What is the primary benefit of rapid prototyping?
      A) Low cost solution   **B)** Quick feedback on design ideas
      C) Efficient use of resources   **D)** High accuracy of results
88   Which of the following is NOT a common tool used in rapid prototyping
      A) 3D printing   **B)** Virtual Reality   **C)** User testing   **D)** Radio frequency identification
89   What is the purpose of creating multiple prototypes in rapid prototyping?
      A) To evaluate multiple design solutions   **B)** To reduce the cost of development
      C) To speed up the design process   **D)** To improve the final product quality
90   How does rapid prototyping help in the design thinking process?
      A) By providing quick feedback on design ideas   **B)** By reducing the time to market
      C) By improving the accuracy of results   **D)** All of the above
91   What type of prototypes are typically created in the early stages of rapid prototyping?
      A) Functional prototypes   **B)** High-fidelity prototypes
      C) Low-fidelity prototypes   **D)**Aesthetic prototypes
92   What type of prototypes are typically created in the later stages of rapid prototyping?
      A)Low-fidelity prototypes   **B)** High-fidelity prototypes
      C) Functional prototypes   **D)** Aesthetic prototypes
93   Which of the following is NOT a common method of creating prototypes in rapid prototyping?
      A) Paper prototyping   **B)** Physical prototyping
      C) Virtual prototyping   **D)** Cybernetic prototyping
94   What is the purpose of Business Model design?
      A) To create a unique value proposition   **B)** To optimize operations and processes
      C) To determine the most profitable pricing strategy   **D)** All of the above
95   What are the key components of a business model?
      A) Value Proposition   **B)** Customer Segments   **C)** Channels   **D)** All of these
96   How is a design thinking workshop structured?
      A) As a lecture or presentation   **B)** As a hands-on, experiential learning session
      C) As a discussion or debate   **D)** As a networking event
97   What company is known for using design thinking to create innovative products and services in the
      health care industry?
      A) Apple   **B)** Google   **C)** Idea   **D)** Philips
98   Which company uses design thinking to focus on the customer experience and design products that
      are easy to use and aesthetically pleasing?
      A) IBM   **B)** Nike   **C)** Microsoft   **D)** Apple
99   Which company is known for using design thinking to create innovative products and services in the
      financial industry?
      A) JP Morgan chase   **B)** Goldman Sachs   **C)** Wells Fargo   **D)** Bank of America
100   What company uses design thinking to create innovative products and services in the automotive
      industry?
      A) Toyota   **B)** Ford   **C)** General motors   **D)** Volkswagen

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