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RAMAIAH
Institute of Technology

(Autonomous Institute, Affiliated to VTU)
(Approved by AICTE, New Delhi & Govt. of Karnataka)
Accredited by NBA & NAAC with 'A+' Grade

MAKE UP EXAMINATIONS – JULY 2023

Program : B.E. – Common to ECE / EEE / EIE /ETE / MLE / ME / IEM / CH   **Semester** : **I**

Course Name : **Design Thinking**   **Max. Marks** : **100**

Course Code : **AECC17**   **Duration** : **3 Hrs**

Instructions to the Candidates:
- Answer one full question from each unit

UNIT – I

1.	a)	Define mindset. Explain how 'culture of prototyping' is important.	CO1	(08)
	b)	Explain Design thinking for business with examples from GE, IBM or IDEO.	CO1	(08)
	c)	What are some effective educational approaches for integrating design thinking with STEM education?	CO1	(04)
2.	a)	Explain: (i) Learn from failure, (ii) Creative courage mindsets.	CO1	(08)
	b)	What is radical collaboration? Why is it necessary?	CO1	(08)
	c)	Elaborate on the statement: 'Design thinking = method, not magic'.	CO1	(04)

UNIT- II

3.	a)	What does empathize stage deal with in design thinking? Identify two ways in which one can gain empathy while designing.	CO2	(06)
	b)	Assume you with your two friends intend to come up with a new unisex fragrance for college going students. Create and fill an empathy map for the proposed fragrance brand.	CO2	(08)
	c)	Scenario :An adult person who lives in the city… needs access to a shared car 1-4 times for 10-60 minutes per week … because he would rather share a car with more people as this is cheaper, more environmentally friendly, however, it should still be easy for more people to share. Write your suggestive HMW statement for the given above scenario.	CO2	(06)
4.	a)	What does define phase deal with in design thinking and what to expect at the end of the design thinking define stage.	CO2	(06)
	b)	Assume you with your two friends intend to come up with a new app booking flight tickets online. Create and fill an empathy map for the proposed app.	CO2	(08)
	c)	Scenario :A group of university Students aimed at solving the problem of neonatal hypothermia, which costs the lives of thousands of infants in developing countries every year. Faced with the situation where hospital incubators were too expensive as well as physically inaccessible to villagers who lived in rural settings, a team of students engaged in some Empathy research, which led them to formulate the HMW statement. Write your suggestive HMW statement for the given above scenario.	CO2	(06)

UNIT- III

5.	a)	What is done in Ideate Phase of design thinking? Write about the myths associated with creativity, innovation and originality.	CO3	(06)
	b)	What are the critical goals of building a prototype? Why designers should not get too attached to their prototypes?	CO3	(06)

c) Imagine your team is getting stuck while designing a stroller for babies. You are working on the following HMW question: How might we stop the moving stroller during emergency?
What strategies will you adopt to get unstuck from the above situation. Give justification for your answers.   CO3   (08)

6. a) What is rapid prototyping? State the advantages of using it prototype phase of design thinking?   CO3   (06)

b) Bring out the differences between convergent and divergent thinking by giving suitable examples.   CO3   (06)

c) Imagine your team is ideating on how to make your locality cycle friendly. Three team members have given the following suggestions: CO3   (08)
   i) Provide segregated and wider bike lanes
   ii) Install Traffic light signals that prioritizes pedestrians and cyclists
   iii) Build bike hire infrastructure
Build two ideas for each of the above by plussing.

UNIT- IV

7. a) Define value and Value Engineering. Discuss about the various types of values associated with a product.   CO4   (06)

b) What is iteration? How this process helps designers in creating better prototypes?   CO4   (06)
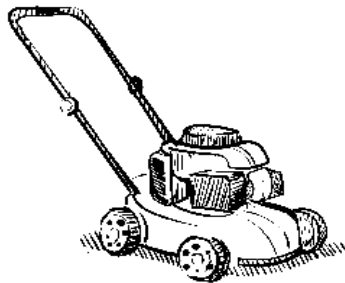
c)   CO4   (08)

Fig. 7(c)

Your team has designed and created a prototype of a lawn mower shown in Fig. 7(c). Suggest two tests for testing with end users and two tests without end users. Give justification for your answers.

8. a) Is testing phase mandatory in design thinking? Substantiate your answer with suitable reasoning.   CO4   (06)

b) Give any three circumstances each for testing a protype with end users and without end users.   CO4   (06)

c) What are the various stages of a product life cycle? Explain with an example.   CO4   (08)

UNIT-V

9. a) One significant strategy by Asian Paints adapted is "Simplifying Digital 'Colour Selection' Process for Interiors". Critically analyse the strategy.   CO5   (10)

b) How do you create a good design thinking project? Explain.   CO5   (10)

10. a) What are some of the tips for idea generation and synthesis with large groups?   CO5   (10)

b) Dyson a well known manufacturers in vacuum cleaners were able to constantly reinvent itself to be successful in keeping their product in market. Identify one such strategy adopted and critically analyse it.   CO5   (10)

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