

Reg. No.:

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

**BANNARI AMMAN INSTITUTE OF TECHNOLOGY**

(An Autonomous Institution Affiliated to Anna University, Chennai)

SATHYAMANGALAM – 636 401

PERIODICAL TEST I - APRIL 2024

IV Semester

**22CS008/22IT008/22CT008/22AI002& UI AND UX DESIGN**

Degree &amp; Branch: B.E. / B.Tech. &amp; CS,IT,CT,AI

Time: 1:30Hrs.

Maximum: 50 Marks

**Instructions:**

1. Students should not mark/write anything on the Question Paper other than the register number.
2. Section A and B of the Question Paper contains questions for 20 Marks each. Section C contains questions for 15 Marks.
3. Students can attempt answering any two out of three subsections in each section. Maximum mark is limited to 20 in section A & B, and 10 in section C.

Q.No	Questions
SECTION A	COURSE OUTCOME 1
	MAXIMUM: 20 MARKS
A1	<p>Consider the following HTML output</p> <p style="text-align: center;"><b>Enter the details</b></p> <p>User Name <input type="text" value="UIUX"/></p> <p>Password <input type="password" value="*****"/></p> <p>Gender <input checked="" type="radio"/> Male <input type="radio"/> Female <input type="radio"/> Other</p> <p><input type="button" value="Submit"/></p> <p style="text-align: center;">Figure A1. 1 Registration page</p>
(i)	<p>Complete the remaining code to get output as shown in figure A1.1</p> <pre>&lt;!DOCTYPE html&gt; &lt;html&gt; &lt;body&gt; &lt;h4&gt; Enter the details &lt;/h4&gt;&lt;br&gt;</pre>

**ANSWER**

```

<!DOCTYPE html>
<html>
<body>
<h4> Enter the details </h4><br>
<label for="uname"> User Name</label>
<input type="text" name="uname" id="uname"/><br><br>
<label for="pass"> Password</label>
<input type="password" name="pass" id="pass"/><br><br>
<label for="gender"> Gender</label>
<input type="radio" value="male">Male</input>
<input type="radio" value="female">Female</input>
<input type="radio" value="other">Other</input><br><br>
<input type="Submit" value="Submit"></input>
</body>
</html>

```

- (ii) From the result obtained in A1(i). Write the code to create a table as shown below

Semester IV Elective		
Subject Code	Subject Name	Course Type
22CS008	UI AND UX DESIGN	ELECTIVE 1
22CS009	WEB Frameworks	ELECTIVE 1
22CS010	Full Stack Development	ELECTIVE 3

(4 Marks – [U/C,2])

**Answer:**

```

<table style="border: 1px solid black">
<tr>
<td colspan="3"><div align="center">Semester IV Elective</div></td>
<tr>
<td style="border: 1px solid black">Subject Code</td>
<td style="border: 1px solid black">Subject Name</td>
<td style="border: 1px solid black">Course Type</td>
</tr>
<tr>
<td style="border: 1px solid black">22CS008</td>
<td style="border: 1px solid black">UI AND UX DESIGN</td>
<td style="border: 1px solid black">ELECTIVE 1</td>
</tr>
<tr>
<td style="border: 1px solid black">22CS009</td>
<td style="border: 1px solid black">WEB Frameworks</td>
<td style="border: 1px solid black">ELECTIVE 1</td>
</tr>
<tr>
<td style="border: 1px solid black">22CS010</td>
<td style="border: 1px solid black">Full Stack Development</td>
<td style="border: 1px solid black">ELECTIVE 3</td>
</tr>
</table>

```

A2

Visual design principles are fundamental concepts that guide the arrangement and presentation of visual elements in design. These principles, including scale, visual hierarchy, balance, contrast, and Gestalt principles, collectively influence the overall aesthetics and functionality of a design.

Visual design principles inform us how design elements go together to create well-rounded and thoughtful visuals. Graphics that take advantage of the principles of good visual design can drive engagement and increase usability.

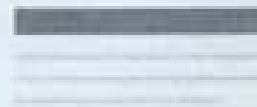
#### SCALE

The principle of scale refers to using relative size to signal importance and size in a composition.



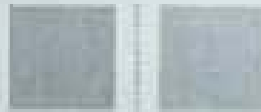
#### VISUAL HIERARCHY

The principle of visual hierarchy refers to guiding the eye on the page so that it attends to design elements in the order of their importance.



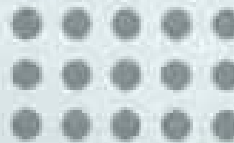
#### BALANCE

Balance occurs when there is an evenly distributed amount of visual weight on both sides of an imaginary axis.



#### CONTRAST

The principle of contrast refers to the juxtaposition of visually dissimilar elements in order to convey the fact that those elements are different.



#### GESTALT PRINCIPLES

Gestalt principles capture our tendency to perceive the whole as opposed to the individual elements.



Figure A2.1 Visual design Principles

- (i) The principle of visual hierarchy refers to guiding the eye on the page so that it attends to different design elements in the order of their importance. Visual hierarchy can be implemented through variations in scale, value, color, spacing, placement, and a variety of other signals.

Design the visual hierarchy for Uber mobile application. How your visual hierarchy improves the overall visual design of the application?




(3 Marks – [Ap/C,2])

#### ANSWERS

The screen is split in half between the map and input form (bottom half of screen), which enforces the thought that these components are equally important to the user. The eye is immediately drawn to the field because of its gray background, and then to the recent locations below it, which are slightly smaller in font size.



(ii) Match the following visual design principles, its examples and explanation.

A. Visual Design Principle	B. Example	C. Explanation of Example
A1. Scale	B1 	C1. Using relative size to signal importance and rank in a composition.
A2. Contrast	B2 	C2. Guiding the eye on the page so that it attends to different design elements in the order of their importance.
A3. Visual Hierarchy	B3 	C3. The comparison of visually dissimilar elements in order to convey the fact that these elements are different.

A4. Gestalt Principles

B4



C4. Subconsciously arranging the parts into an organized system that creates a whole, rather than interpreting them as a series of disparate elements.

(4 Marks – [U/C,2])

**ANSWERS**

A1-B4-C4

A2-B3-C3

A3-B2-C2

A4-B1-C1

(iii)

The balance design principle makes a satisfying arrangement or proportion of design elements. Balance occurs when there is an equally distributed amount of visual signal on both sides of an imaginary axis going through the middle of the screen. The balance principle is classified into three types, Symmetrical, Asymmetrical and Radial.

Identify the balance principle used in the below images



(i)



(ii)



(iii)

(3 Marks – [Ap/C,2])



**ANSWERS**

- i. Radial
- ii. Asymmetrical
- iii. Symmetrical

A3

'Hero' Task Flows illustrate the motivations and primary steps that a user takes to complete a task or accomplish a goal that will be helpful to visualize.



	<p>represent different user types, their goals, needs, behaviors, and demographics. (3 Marks-[An/C,1])</p> <p><b>Answer:</b> True</p> <p><b>Justification:</b> This is a common practice in UX design and product development personas help teams empathize with and design for their target users by understanding their motivations, preferences and pain points. They are based on real data and research to ensure they accurately reflect the characteristics of the target user groups.</p>
<p><b>SECTION 8</b> <b>COURSE OUTCOME 2</b> <b>MAXIMUM : 20 MARKS</b></p>	
B1	<p>Consider an application designed with two various design that makes the same performance</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Figure B1.1 Material design</p> </div> <div style="text-align: center;">  <p>Figure B1.2 Human Interface design</p> </div> </div> <p>(i) The patterns of transition includes shared axis, Container Transform, fade and Fade through. Classify the correct transition that will be applicable for the below statements.</p> <ol style="list-style-type: none"> <li>When a UI element enters and exits the screen the process of transition is best suited for this situation.</li> <li>If the relationship between objects is insignificant or isn't present, uses the transition with best suited situation.</li> <li>Shapes the represent contents in the form of buttons, lists, cards</li> <li>If there is a spatial relationship emphasis such as object in a horizontal or vertical layout</li> </ol> <p style="text-align: right;">(4 Marks -{An/C,2})</p> <p><b>Answer :</b></p> <ol style="list-style-type: none"> <li>Shared Axis</li> <li>Fade</li> <li>Fade through</li> <li>container</li> </ol> <p>(ii) Based on the Scenario, identify the patterns of transition for the below performance: "When a card transforms into a detail page, the user's focus will be directed to identify the detail page is an expanded version of the card".</p> <p><b>Answer:</b> Container transfer</p> <p style="text-align: right;">(2 Marks- {U/C,2})</p> <p>(iii) With reference to the figure B1.1 and B1.2, illustrate the different design themes that help ios.</p> <p style="text-align: right;">(4 Marks-{U/C,2})</p>

	<p><b>Answer:</b></p> <ul style="list-style-type: none"> <li>○ Deference</li> <li>○ Clarity</li> <li>○ Depth</li> </ul>
82	<p>Introducing Mark, a busy professional who relies on messaging apps to communicate with colleagues and clients. Here's how he interacts with a messaging platform:</p> <ul style="list-style-type: none"> <li>● Mark opens the messaging app on his Smartphone and is greeted with a list of recent conversations and contacts.</li> <li>● He selects a conversation with his project team to discuss upcoming deadlines and project updates. The messaging interface is user-friendly, with options for sending text messages, images, and files.</li> <li>● During the conversation, Mark receives a notification about a new message from a client. He switches to the client chat seamlessly, maintaining multiple conversations without any hassle.</li> <li>● Mark utilizes the platform's group chat feature to create a dedicated chat group for his project team, facilitating efficient communication and collaboration.</li> <li>● At the end of the day, Mark archives completed conversations and sets notifications for important chats to ensure he stays organized and responsive.</li> </ul> <p>(i) Consider if Mark wants to get into group communication. Below are some incomplete initial steps to initiate the group chat. Complete the below steps for Mark to get into group communication.</p> <p>Step1: Open Message App</p> <p>Step2: Navigate to Group chat option</p> <p>Step3: <input type="text"/></p> <p>Step4: <input type="text"/></p> <p>Step5: <input type="text"/></p> <p>Step6: <input type="text"/></p> <p>Step7: Group chat for Project team created successfully.</p> <p style="text-align: right;">(4 Marks-[Ap/P,2])</p> <p><b>Answer:</b>  Step3: Select "Create New Group"  Step4: Add project team members  Step5: Name the group  Step6: Confirm creation of group</p> <p>(ii) Sketch the simple representation of user interface of the message application as Mark see it when he opens it on his smartphone</p> <p style="text-align: right;">(3 Marks- [An/C,2])</p> <p><b>Answer:</b></p>

		<div> <div>Messaging App</div> <div> <div>[Recent Conversation]</div> <div>Project team1</div> <div>Customer2</div> </div> <div> <div>[Contacts]</div> <div>Customer1</div> <div>Supplier</div> <div>Manager</div> </div> <div> <div>[Compose] [Search] [Menu] [Settings]</div> </div> </div>
	(iii)	<p>Identify the sequence of actions that Mark see when sharing an image within the message application.</p> <p>(3 Marks-[U/C,2])</p> <p><b>Answer:</b></p> <ol style="list-style-type: none"> <li>1. Open message App</li> <li>2. Select conversation</li> <li>3. Tap attach icon</li> <li>4. Choose image option</li> <li>5. Select image from gallery</li> <li>6. Tap send button</li> </ol>
B3		<p>Consider the development process for a mobile banking application for iOS device. The process involves gathering requirements, Designing a user-friendly interface adhering to apple's guideline, implementing secure authentication and transaction, thorough testing to ensure functionality and security and finally deploying the application to the app store for users to download on their iOS device.</p>
	(i)	<p>iOS is different from Android irrespective of the model pattern. As a designer, show the themes that help Apple to stand out from Android.</p> <p>(3 Marks-[An/C,2])</p> <p><b>Answer:</b> Deference Clarity Depth</p>
	(ii)	<p>State whether the given statement is correct or incorrect in terms of Human Interface Design (HID) –iOS and Justify your answer</p> <p>Statement 1: Clarity can be platform-specific and doesn't depends on what the user familiar with</p> <p>Statement 2: Apple promoted gradients and blurred design, while google gives importance to drop shadows</p> <p>(4 Marks-[U/C,2])</p> <p><b>Answer:</b> Statement 1: incorrect Justification: Clarity is depends on what the user familiar with. Ex: Android users may not recognize the iOS icon instantly. Statement 2: correct Justification: Apple promoted gradients and blurred design for sleek and immersive experience while google gives importance to drop shadows to create depth and hierarchy within its Material design.</p>
	(iii)	<p>Conclude the below assertion and reasoning</p> <p>Assertion: Material Design priorities user action and interactions through intuitive targets</p>



Reason: Clear and accessible targets reduce user frustration and improve usability

1. A is true but R is false
2. A is false but R is true
3. Both A and R are false
4. Both A and R are true

Answer:  
Both A and R are true

(3 Marks-{U/C,2})

### SECTION C

### COURSE OUTCOME 3

MAXIMUM: 10 MARKS

- C1 User Interface (UI) and User Experience (UX) design are integral aspects of creating digital products that prioritize user satisfaction. UI design focuses on the look and feel of a product, including visual elements, interactive components, and overall aesthetics. On the other hand, UX design concentrates on the overall user experience, ensuring seamless navigation, usability, and user satisfaction throughout the interaction with the product.



Figure C1.1 Phases of UI/UX

- (i) Identify the missing phases of UI/UX from the above Figure C1.1

(3 Marks-{U/C,2})

#### Answer

1. Product Definition
3. Analysis
4. Validation

- (ii) Designers consider their options, and then proceed to work out the details, thus making UX design a two-step process. Find which step suits the following statements.
- a) In the initial step, multiple ideas are generated, but since they cannot be fully shaped, it is not uncommon for some of elements to be incomplete or missing.
  - b) Step by step, you settle on a few promising variants and proceed to work out the specifics, thus rendering some ideas unsuitable

(2 Marks-{U/C,2})

#### Answer

- a- Idea Generation
- b- Adding details and Refinement

22. UI/UX designer is designing a unique Website and also a Mobile App for a Gaming company which incorporate more attractive and user comfort design features. The designer uses Figma software to design the UI/UX web page. Wireframes and Wire flows are used for more user experience feature. Wireframes are used for creating the interface and the Wire flows are used to create the interaction link between the webpages or navigation screens.

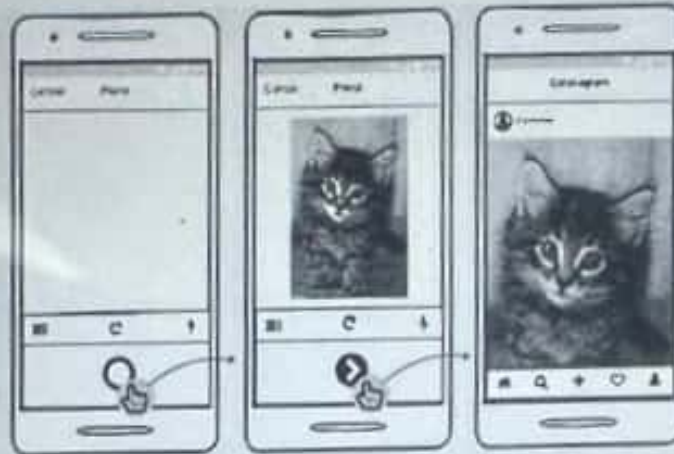


Figure C2.1. Wireframes and Wire flows

- (i) Wireframes are broadly classified into three types as Low fidelity, Mid fidelity and High fidelity based on the number of details they contain.

Match the following:

S.No.	Type of Wireframe (A)	Detailing's (B)	Example (c)
1	Low fidelity	pixel-specific layout, actual featured images and relevant written content	
2	Mid fidelity	simplistic images, block shapes, and basic elements	
3	High fidelity	images or typography, Varying text weights	

(3 Marks-{U/C,2})

Answer:  
A1 – B2 – C3

		<p>A2 – B3 – C1</p> <p>A3 – B1 – C2</p>
	(ii)	<p>Are there any key differences in UI/UX designing process while developing a Website and a Mobile App? Justify your answer.</p> <p style="text-align: right;">(2 Marks-[U/C,2])</p> <p>Answer: Yes.</p> <p><b>Screen Size and Resolution:</b> Mobile devices typically have smaller screens and lower resolutions compared to desktop monitors. This requires designers to prioritize content and functionality differently to ensure a good user experience on smaller screens.</p>
C3		<p>An Online Shopping company wants to develop an E-Commerce Website. In these UI/UX designers plays a vital role in designing the webpages with more user-friendly options in order to attract more customers to view and search the products. To make this the designer uses Digital Wireframes, which is for representing static interfaces. Acting as visual roadmaps, wireframes depict the positioning of buttons, navigation, and content, aiding in a comprehensive grasp of the designs fundamental framework.</p>
	(i)	<p>Rearrange the below steps for designing the webpage UI/UX designer needs to know.</p> <ol style="list-style-type: none"> <li>1. Refine requirements and Prioritize Features.</li> <li>2. Map the User Flow.</li> <li>3. Do your UX research.</li> <li>4. Review and Iterate.</li> <li>5. Sketch the Layout and Features.</li> </ol> <p style="text-align: right;">(5 Marks-[An/C,2])</p> <p>Answer:</p> <ol style="list-style-type: none"> <li>1. Do your UX research.</li> <li>2. Refine requirements and Prioritize Features</li> <li>3. Map the User Flow</li> <li>4. Sketch the Layout and Features</li> <li>5. Review and Iterate.</li> </ol>

\*\*\*End of Question Paper\*\*\*