

C-7599

Sub. Code

82723

B.Sc. DEGREE EXAMINATION, APRIL 2026

Second Semester

UI Design and Development

UI DEVELOPMENT I

(2023 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 1 = 10)

Answer **all** questions.

1. Which of the following is a server-side scripting language?
 - (a) JavaScript
 - (b) PHP
 - (c) HTML
 - (d) CSS
2. What is the correct term for the ability to use the same function name with different arguments?
 - (a) Inheritance
 - (b) Overriding
 - (c) Overloading
 - (d) Recursion

3. What does DOM stand for in JavaScript?
 - (a) Document Object Model
 - (b) Data Object Method
 - (c) Digital Output Method
 - (d) Document Output Module

4. Which method is used to send form data securely to the server?
 - (a) GET
 - (b) POST
 - (c) PUT
 - (d) FETCH

5. What is the purpose of the jQuery `.fadeOut()` function?
 - (a) Make text bold
 - (b) Hide elements with fade effect
 - (c) Animate rotation
 - (d) Validate forms

6. Which format is commonly used for structured data exchange in jQuery?
 - (a) PDF
 - (b) JSON
 - (c) DOCX
 - (d) TXT

7. What does the term “mobile-first design” refer to?
- (a) Designing only for mobile
 - (b) Designing for mobile before scaling up to desktop
 - (c) Creating mobile apps
 - (d) Ignoring desktop layout
8. What unit is commonly used in responsive grid stems?
- (a) Pixels
 - (b) Inches
 - (c) Percentages
 - (d) Points
9. Which class in Bootstrap creates a responsive grid layout?
- (a) `.layout`
 - (b) `.container`
 - (c) `.grid-system`
 - (d) `.row`
10. Which Bootstrap element is used to create responsive forms?
- (a) `.form-group`
 - (b) `.form-block`
 - (c) `.form-box`
 - (d) `.input-area`

Part B

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Explain the difference between call by value and call by reference with examples.

Or

- (b) Describe any four unary and binary operators used in scripting.

12. (a) What is form validation? How is it implemented using JavaScript?

Or

- (b) Describe keyboard and mouse events in JavaScript with examples.

13. (a) Explain how jQuery is used to create dynamic effects on a web page.

Or

- (b) What is the purpose of JSON parsing and how is it handled in JavaScript.

14. (a) Define media queries. How are they used to build responsive websites?

Or

- (b) Explain the concept of viewport and its role in responsive design.

15. (a) Write a short note on Bootstrap grid system and layout types.

Or

- (b) How are images handled responsively using Bootstrap?

Part C

(5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Write a detailed note on object-oriented programming features in scripting languages with examples.

Or

- (b) Describe different types of statements and functions in scripting languages with code samples.

17. (a) Explain the DOM structure and how JavaScript manipulates HTML elements through DOM.

Or

- (b) Discuss form handling in JavaScript using GET and POST methods with validation.

18. (a) Describe jQuery functions used to build interactive components such as sliders and quizzes.

Or

- (b) Explain the process of importing and exporting data using file handling in JavaScript.

19. (a) Explain how responsive design principles are applied in grid-based layouts using media queries.

Or

- (b) Discuss the importance of breakpoints and responsive images in mobile-first design.

20. (a) Describe Bootstrap forms and their components with proper class usage and layout examples.

Or

- (b) Write a detailed note on Bootstrap tables, buttons, and navigation bar elements.
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C-7600

Sub. Code

82725

B.Sc. DEGREE EXAMINATION, APRIL 2026

Second Semester

UI Design and Development

UX DESIGN I

(2023 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 1 = 10)

Answer **all** questions.

1. Which of the following is a golden rule of UX Design?
 - (a) Maximize complexity
 - (b) Focus on code logic
 - (c) Keep the interface consistent
 - (d) Increase data load

2. What does the principle of “affordance” relate to in UX Design?
 - (a) Emotional branding
 - (b) Device response time
 - (c) Visual clues for usability
 - (d) Code readability

3. Which research method includes observing users in their natural environment?
 - (a) Survey
 - (b) Ethnography
 - (c) A/B Testing
 - (d) Card Sorting

4. What is the purpose of an empathy map in user research?
 - (a) To estimate budget
 - (b) To structure a business plan
 - (c) To understand user thoughts and feelings
 - (d) To plan visual layout

5. What is a problem statement used for in UX research?
 - (a) Listing survey participants
 - (b) Defining the research objective
 - (c) Budgeting design work
 - (d) Designing buttons

6. What is a persona in UX Design?
 - (a) A color palette
 - (b) A logo element
 - (c) A fictional user profile
 - (d) A UI layout

7. What does “project discovery” typically include?
 - (a) Payment plan
 - (b) Stakeholder meetings
 - (c) Final UI draft
 - (d) Server-side code

8. Which factor is considered a critical success factor (CSF) in UXD ecosystem planning?
 - (a) Font size
 - (b) Target load time
 - (c) Project deadline
 - (d) All of the above

9. What does CMS stand for in content strategy?
 - (a) Central Marketing Survey
 - (b) Content Management System
 - (c) Creative Mapping Studio
 - (d) Core Metrics Standard

10. Which aspect of UX content strategy ensures adaptation to different devices?
 - (a) Flexibility
 - (b) Typography
 - (c) Color schemes
 - (d) Local storage

Part B

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Explain the principles of unity and variety in visual design.

Or

- (b) Write a short note on how psychology influences good UX design.

12. (a) What is the importance of user interviews and contextual inquiry in UX research?

Or

- (b) Explain the role of empathy mapping in understanding user behavior.

13. (a) Describe the method of user observation and its connection to ethnography.

Or

- (b) Define persona creation and explain its importance in user analysis.

14. (a) How do stakeholder interviews contribute to project discovery in the UXD ecosystem?

Or

- (b) Explain competitor analysis and market segmentation in UX design.

15. (a) What are the live W s and one H in UX content strategy?

Or

- (b) How does content personalization enhance user experience?

Part C

(5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Describe the key UX design principles including focal point, balance, affordance, and interaction.

Or

- (b) Discuss the concept of responsive design and its impact on flow and motion in UX.

17. (a) Explain the process and value of heuristic review, surveys, and focus groups in user research.

Or

- (b) Compare and contrast quantitative and qualitative research methods in UX

18. (a) Explain in detail the anthropological approaches in data gathering and their relevance to user profiling.

Or

- (b) Write about the creation of personas from ethnographic observation with suitable examples

19. (a) Describe how the UXD ecosystem incorporates business goals, content sourcing, and usability criteria.

Or

- (b) Explain the stages of proposal development in UX projects, including executive summary and stakeholder input.

20. (a) Discuss flexible content strategies and their implementation across apps and devices.

Or

- (b) Explain the structure and role of CMS in content creation and distribution.

C-7601

Sub. Code

82733

B.Sc. DEGREE EXAMINATION, APRIL 2026.

Third Semester

UI Design and Development

UI VISUAL DESIGN

(2023 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 1 = 10)

Answer **all** questions.

1. _____ color scheme is created using colors that are opposite each other on the color wheel.
 - (a) Monochromatic
 - (b) Analogous
 - (c) Complementary
 - (d) Triadic

2. A defining feature of a “soft button’ in UI design is _____
 - (a) It has sharp edges and high contrast
 - (b) It mimics physical buttons with realistic textures
 - (c) It has rounded edges and subtle gradients
 - (d) It uses flat design principles

3. The main purpose of using a grid layout in design is _____
- (a) To add decorative elements to the design
 - (b) To structure content and maintain visual alignment
 - (c) To randomly position elements for creative freedom
 - (d) To replace text with images
4. The Rasterization refers to the process of
- (a) Converting raster images into vector graphics
 - (b) Scaling images without losing quality
 - (c) Adding animations to digital images
 - (d) Converting vector graphics into pixel-based images
5. _____ is a characteristic of vector graphics.
- (a) Made up of pixels and lose quality when scaled
 - (b) Ideal for photographs and complex Shading
 - (c) Resolution-independent and defined by mathematical equations
 - (d) Created exclusively for raster-based designs
6. _____ design principle is emphasized in Android UI design.
- (a) Following the Material Design guidelines
 - (b) Avoiding the use of standard navigation patterns
 - (c) Designing exclusively high-end devices
 - (d) Ignoring platform-specific gestures

7. _____ is NOT a key principle of responsive design.
- (a) Flexible grid-based layout
 - (b) Scalable images and assets
 - (c) Media queries for different screen sizes
 - (d) Fixed pixel widths for containers
8. _____ mobile design pattern is best suited for handling large data sets.
- (a) Infinite scrolling with lazy loading
 - (b) Navigation drawer
 - (c) Fixed-width tables
 - (d) Hamburger menu
9. One-page or single-page designs are best suited for _____
- (a) Applications with extensive data entry requirements
 - (b) Websites that require a lot of navigation between multiple sections
 - (c) Portfolios, promotional websites, or simple storytelling projects
 - (d) Large-scale e-commerce platforms
10. When exporting designs for mobile, web, and print, what is the most important factor to consider is
- (a) Exporting all assets in one universal resolution
 - (b) Avoiding the use of compression for all exported files
 - (c) Using the same file format for all platforms
 - (d) Optimizing assets for specific output formats and resolutions

Part B

(5 × 5 = 25)

Answer **all** the questions, choosing either (a) or (b).

11. (a) Analyze the role of lights and shadows in UI design.

Or

- (b) Discuss the significance of typography in web design.

12. (a) Analyze the role of balance and visual hierarchy in layout design.

Or

- (b) Describe the importance of responsive grids for web design.

13. (a) Explain the importance of mobile GUI guidelines.

Or

- (b) Discuss the key features of iOS UI design.

14. (a) Outline the importance of fonts, and style guides in web and mobile design.

Or

- (b) Explain the challenges of designing for cross-platform compatibility in mobile applications.

15. (a) Describe the differences between web mock-ups and mobile mock-ups.

Or

- (b) Compare and contrast one-page design and single-page design.

Part C

(5 × 8 = 40)

Answer **all** the questions, choosing either (a) or (b).

16. (a) Explain the concepts of emphasis and blending in visual design.

Or

- (b) Summarize the process of choosing an effective color scheme for a website.

17. (a) Outline the principles of poster design, focusing on typography, contrast, and the use of negative space.

Or

- (b) Explain the concept of grid layout design in graphic and web design.

18. (a) Compare Android's Material Design and Apple's Human Interface Guidelines in terms of layout and interaction.

Or

- (b) Explain vector-based UI animations and their scalability, performance, and impact on cross-platform compatibility.

19. (a) Define responsive design and describe the key components and techniques involved in creating a responsive website.

Or

- (b) Analyze the role of mobile design patterns such as navigation, forms, tables, and search in enhancing usability.

20. (a) Explain the process of exporting assets for web, mobile, and print platforms.

Or

- (b) Write a detailed explanation of how to create a responsive mock-up for a web application.
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C-7602

Sub. Code

82734

B.Sc. DEGREE EXAMINATION, APRIL 2026

Third Semester

UI Design and Development

UI DEVELOPMENT – II

(2023 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 1 = 10)

Answer **all** questions.

1. In Bootstrap, which class is used to create a badge?
(a) .label (b) .badge
(c) .tag (d) .alert
2. What is the purpose of the Jumbotron component in Bootstrap?
(a) To display alerts
(b) To create responsive image sliders
(c) To paginate content
(d) To highlight a section with a large header and additional content

3. In AngularJS, how is data binding implemented?
 - (a) One-way binding
 - (b) Two-way binding
 - (c) No binding is supported
 - (d) Only template binding

4. How can you handle file operations in Node.js?
 - (a) Using the os module
 - (b) Using the file module
 - (c) Using the fs module
 - (d) Using the stream module

5. What is the primary purpose of AngularJS?
 - (a) Server-side development
 - (b) Styling web pages
 - (c) Database management
 - (d) Client-side web application development

6. What is the purpose of the ng-repeat directive in AngularJS?
 - (a) To define routing configurations
 - (b) To iterate over an array or object in a template
 - (c) To validate form inputs
 - (d) To bind data to input fields

7. Which middleware is used in Express.js for error handling?
 - (a) `app.error()`
 - (b) `errorHandler()`
 - (c) A middleware with four arguments: (err, req, res, next)
 - (d) `express.debug()`

8. What is the purpose of sessions in Express.js?
- (a) To handle database queries
 - (b) To store user data temporarily on the client-side
 - (c) To maintain user data across multiple requests
 - (d) To serve static files.
9. What is a valid JSON-like structure used to insert data into MongoDB called?
- (a) Table
 - (b) Schema
 - (c) Document
 - (d) Index
10. What does the MongoDB Charts tool provide?
- (a) A command-line interface for database management
 - (b) A visual representation of MongoDB data
 - (c) A tool for schema design
 - (d) A plugin for indexing data

Part B

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Explain the key features of advanced Bootstrap that make it a powerful framework for building responsive web applications.

Or

- (b) Describe the structure of a Bootstrap navbar. How can you customize it to create a responsive navigation menu with dropdowns and other elements?

12. (a) Explain the key features of Node.js and how it differs from traditional server-side technologies.

Or

- (b) Discuss how to verify a Node.js installation and explain the significance of the `node` and `npm` commands.
13. (a) Discuss the difference between build-in directives and custom directives in AngularJS.

Or

- (b) Discuss the potential performance issues with two-way data binding in AngularJS.
14. (a) What is Express.js, and how does it simplify the development of server-side web applications?

Or

- (b) Explain the routing mechanism in Express.js.
15. (a) What is MongoDB and how does it differ from traditional relational databases? Discuss its advantages and use cases.

Or

- (b) Discuss the best practices for managing MongoDB instances in a production environment.

Part C

(5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Evaluate the role of a Jumbotron in highlighting key content on a webpage. How does it contribute to user engagement?

Or

- (b) Discuss the role of Javascript in enabling Bootstrap plugins. How do these plugins enhance the functionality of a website?
17. (a) Explain the role of the HTTP protocol in node.js and how it enables server-client communication.

Or

- (b) Explain the different types of streams in Node.js and provide examples of practical use cases for each.
18. (a) Explain the role of expressions in dynamically updating the user interface in AngularJS applications.

Or

- (b) Describe the use of the ng-repeat directive in AngularJS. How can it be used to display and manipulate lists of data?
19. (a) Explain the concept of scaffolding in Express.js. How do tools like express-generator help in rapidly building application structures?

Or

- (b) What is a RESTful API, and how does Express.js facilitate the development of such APIs? Discuss the significance of statelessness and proper HTTP status codes.
20. (a) Discuss the process of creating a new database and collections in MongoDB.

Or

- (b) What is the aggregation framework in MongoDB? Discuss its stages and how it can be used for advanced data processing and analysis.
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C-7603

Sub. Code

82736

B.Sc. DEGREE EXAMINATION, APRIL 2026.

Third Semester

UI Design and Development

UX DESIGN – II

(2023 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 1 = 10)

Answer **all** questions.

1. What principle emphasizes the need for elements in a design to stand out from one another?
 - (a) Repetition
 - (b) Alignment
 - (c) Contrast
 - (d) Proximity

2. What is the main focus of the principle of proximity in visual design?
 - (a) Grouping related elements together
 - (b) Creating visual variety through contrast
 - (c) Ensuring precise alignment of elements
 - (d) Establishing a consistent color scheme

3. Which method is used to identify terms or phrases that resonate with users for labeling or navigation purposes?
 - (a) Tree testing
 - (b) Trigger word elicitation
 - (c) Function familiarity test
 - (d) Task modeling

4. What is a web board primarily used for in information architecture?
 - (a) Designing wireframes
 - (b) Conducting usability tests
 - (c) Facilitating collaboration and idea sharing
 - (d) Managing project timelines

5. Which tool is commonly used for wireframing?
 - (a) Photoshop
 - (b) Figma
 - (c) Blender
 - (d) Canva

6. Why is stepping back important in wireframing?
 - (a) To focus on finalizing the color scheme
 - (b) To refine the visual design elements
 - (c) To evaluate the structure and usability of the design
 - (d) To ensure the wireframe matches the marketing goals

7. Which component is essential in the anatomy of a funnel diagram?
 - (a) Conversion rates at each stage
 - (b) High-resolution images
 - (c) Detailed animations
 - (d) User personas

8. What is typically communicated through a funnel diagram?
- (a) The timeline of a project
 - (b) The aesthetics of the design
 - (c) User behaviour, conversion rates and drop-off points
 - (d) Feedback from stakeholders
9. What is the primary focus of Mobile UX design?
- (a) To optimize content for desktop screens
 - (b) To create complex interactions
 - (c) To prioritize aesthetics over usability
 - (d) To provide an intuitive and seamless user experience on mobile devices
10. Which technology is most critical to mobile UX design?
- (a) Cloud computing
 - (b) Artificial intelligence
 - (c) Mobile web technologies like HTML5, CSS3 and JavaScript
 - (d) Blockchain

Part B

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Explain the role of contrast in visual design and provide examples of how it can enhance usability and user engagement in a digital product.

Or

- (b) Discuss the significance of repetition in creating visual harmony and consistency. How does it influence user recognition and understanding?

12. (a) Explain the process of card sorting in information architecture.

Or

- (b) Compare and contrast exploratory card sorting and tree testing.

13. (a) What is wireframing and why is it a crucial step in the design process?

Or

- (b) Discuss the essentials of annotating wireframes.

14. (a) Define the purpose of a usability test report and explain its role in the design and development process.

Or

- (b) What are the key characteristics of a good usability test report?

15. (a) Explain the role of technology in shaping Mobile UX.

Or

- (b) Discuss the importance of understanding user behaviour and expectations when designing for mobile platforms.

Part C

(5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Explain the importance of adding interactivity to paper prototypes and how this approach benefits user testing and feedback collection.

Or

- (b) Evaluate the importance of using user-friendly language in design documentation and communication.
17. (a) Explain the steps involved in creating a task model using PowerPoint.

Or

- (b) How can designers create an effective user journey map? Discuss the steps involved and the role of user research in this process.
18. (a) Discuss the role of wireframing tools in modern design workflows.

Or

- (b) Discuss methods for indicating animations, transitions, and dynamic elements in a static wireframe.
19. (a) Explain the role of actionable recommendations in a usability test report.

Or

- (b) Compare and contrast the usability test report with other types of design documentation.

20. (a) Discuss the key differences between mobile and desktop prototyping.

Or

- (b) Explore how layout and design choices can affect the adoption of a mobile app.
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C-7604

Sub. Code

82743

B.Sc. DEGREE EXAMINATION, APRIL 2026.

Fourth Semester

UI Design and Development

WEB APPLICATION DEVELOPMENT

(2023 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 1 = 10)

Answer **all** questions.

1. Which PHP functions is used to handle form data sent via POST method?
 - (a) \$_GET
 - (b) \$_POST
 - (c) \$_FORM
 - (d) \$_REQUEST
2. Which function in PHP is used to upload a file?
 - (a) move_uploaded_file()
 - (b) upload_file()
 - (c) store_file()
 - (d) save_file()
3. What is the purpose of a namespace in PHP OOP?
 - (a) Manage sessions
 - (b) Define URL structure
 - (c) Avoid name conflicts in large applications
 - (d) Encrypt database connections

4. Which of the following is used for state management in PHP?
 - (a) MVC
 - (b) Sessions
 - (c) Classes
 - (d) Functions

5. Which SQL command is used to create a new table in a database?
 - (a) INSERT
 - (b) SELECT
 - (c) CREATE
 - (d) JOIN

6. What does the SQL “JOIN” clause do?
 - (a) Merges duplicate records
 - (b) Sorts the table
 - (c) Combines rows from two or more tables
 - (d) Deletes tables

7. Which SQL.. clause is used to group rows with the same values?
 - (a) ORDER BY
 - (b) GROUP BY
 - (c) LIMIT
 - (d) UNION

8. What is the purpose of normalization in databases?
 - (a) To encrypt data
 - (b) To increase redundancy
 - (c) To reduce data redundancy and improve data integrity
 - (d) To delete duplicates

9. Which of the following is a type of web service?
 - (a) FTP
 - (b) SOAP
 - (c) HTTP
 - (d) SQL

10. What is AJAX used or?
- (a) Server hosting
 - (b) Asynchronous data exchange between client and server
 - (c) Compressing images
 - (d) Encrypting user data

Part B

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Write a short note on handling HTML forms with PHP using `$_POST`.
- Or
- (b) Explain any three PHP string functions with examples.
12. (a) Describe the concept of classes and inheritance in PHP OOP.
- Or
- (b) What is MVC architecture? Explain with a simple diagram.
13. (a) List and explain different types of SQL JOINS with examples.
- Or
- (b) Explain how DDL and DML operations are performed in MySQL.
14. (a) What is normalization? Discuss the advantages of normalization with an example.
- Or
- (b) Explain the different methods of connecting PHP to MySQL.

15. (a) What are the advantages of using AJAX In web development?

Or

- (b) How does AJAX interact with databases? Illustrate with an example.

Part C

(5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Describe the process of handling file uploads using PHP with validation.

Or

- (b) Explain the use of arrays and control structures in PHP with examples.

17. (a) Discuss cookies and sessions with examples. How are they used hr managing user state?

Or

- (b) Explain URL rewriting and its importance in web development.

18. (a) Describe in detail database modeling and writing SQL queries for table creation, insertion and joins.

Or

- (b) Explain the concept of stored procedures and how they are executed in MySQL.

19. (a) Write an essay on database optimization and transaction handling with suitable examples.

Or

- (b) Describe importing and exporting database using MySQL and PHP.

20. (a) Explain the working of AJAX using JavaScript, XML, and JSON with an example.

Or

- (b) Write a detailed note on AJAX panels, identity generation and script manager.

C-7605

Sub. Code

82744

B.Sc. DEGREE EXAMINATION, APRIL 2026

Fourth Semester

UI Design and Development

HUMAN CENTERED DESIGN

(2023 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 1 = 10)

Answer **all** questions.

1. Which design level focuses on the physical look and feel of a product?
 - (a) Reflective design
 - (b) Behavioral design
 - (c) Visceral design
 - (d) Emotional design

2. What type of emotion is evoked by the aesthetic appeal of a product?
 - (a) Functional emotion
 - (b) Reflective emotion
 - (c) Visceral emotion
 - (d) Rational emotion

3. Which term is closely related to shaping user experience through aesthetics?
 - (a) Ergonomics
 - (b) Computation
 - (c) Mechanical Design
 - (d) Interaction Design

4. Interaction design plays a key role in which of the following?
 - (a) Manufacturing
 - (b) Storage optimization
 - (c) User experience and communication
 - (d) Engineering computations

5. What best describes Tangible User Interfaces (TUIs)?
 - (a) interfaces based solely on text
 - (b) Graphical interfaces with icons
 - (c) Physical objects used to interact with digital information
 - (d) Voice-based systems

6. The concept of “tokens and constraints” is associated with:
 - (a) Digital security
 - (b) TUI design
 - (c) Communication theory
 - (d) Traditional GUI

7. What is a key factor in designing for ubiquitous computing?
 - (a) File size management
 - (b) Cultural context and user background
 - (c) Binary data processing
 - (d) Static user roles

8. Designing products for children must account for:
 - (a) Only physical size
 - (b) Context and user behavior
 - (c) Heat tolerance
 - (d) Display brightness

9. Which aspect is addressed by human factor engineering?
 - (a) Profit margins
 - (b) Marketing content
 - (c) Intellectual property
 - (d) Visual and physical comfort

10. Mental workload in user design refers to:
 - (a) Time taken to finish the task
 - (b) Difficulty of physical movement
 - (c) Cognitive strain placed on the user
 - (d) RAM required to execute the software

Part B

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Explain the concept of reflective design with an example.

Or

- (b) Describe the multiple faces of emotion in emotional design.

12. (a) Discuss how interaction design influences business communication.

Or

- (b) Explain how operations in computing relate to user experience design.

13. (a) Define tangible user interface with suitable examples.

Or

- (b) Describe the role of tools and tokens in playful user interfaces.

14. (a) Explain immersive experience design in ubiquitous computing.

Or

- (b) What are the considerations while designing products for kids?

15. (a) What are the visual comfort considerations in control/display design?

Or

- (b) Describe factors contributing to mental workload in user-centered design.

Part C

(5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Explain the three levels of design in emotional design with suitable product examples.

Or

- (b) Discuss the principles involved in designing personality for products.

17. (a) Illustrate the aesthetic shaping in interaction design with examples.

Or

- (b) Write a detailed note on managing complexity in engineering-centric interaction design.

18. (a) Write an essay on metaphors used in tangible user interfaces.

Or

- (b) Explain the role of interactive surfaces in building user experience.

19. (a) Explain cultural theory in designing for ubiquitous computing.

Or

- (b) How do stakeholder interviews help define product goals and usability criteria?

20. (a) Explain the importance of display and control design in workspace comfort.

Or

- (b) Describe physical and mental fatigue in human-centered engineering.
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C-7606

Sub. Code

82746

B.Sc. DEGREE EXAMINATION, APRIL 2026.

Fourth Semester

UI Design and Development

MOBILE APPLICATION DEVELOPMENT

(2023 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 1 = 10)

Answer **all** questions.

1. Which keyword in Java is used to define a blueprint for objects?
(a) class (b) void
(c) static (d) public
2. Which OOP principle in Java is demonstrated by hiding implementation details from the user?
(a) inheritance (b) Encapsulation
(c) Abstraction (d) Polymorphism
3. Which primitive data type in Java is used to store true or false values?
(a) int (b) boolean
(c) char (d) byte
4. A named storage location in Java that holds a value during program execution is called
(a) object (b) method
(c) variable (d) class

Part B

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Explain the basic functions available in Java with examples.

Or

- (b) Describe the principles of OOP programming in Java with suitable examples.

12. (a) Describe how control statements are used for program flow in Java.

Or

- (b) Explain the use of operators in Java with suitable examples.

13. (a) Explain the key issues related to open-source licenses with examples.

Or

- (b) Describe the features and significance of the Mozilla Public License (MPL).

14. (a) Explain the use of selection widgets in Android with examples.

Or

- (b) Describe the use of Web View and WebKit Browser in Android applications.

15. (a) Explain the process and purpose of using multiple activities in Android applications.

Or

- (b) Describe the role of threads in Android and their importance in application responsiveness.

Part C

(5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Explain the concept of abstraction in Java and its importance in program design.
Or
(b) Describe the steps involved in creating and executing your first Java program.
17. (a) Describe how control statements are used for program flow in Java.
Or
(b) Explain the use of selection statements in Java with examples.
18. (a) Explain the characteristics and purpose of the General Public License (GPL).
Or
(b) Describe the LGPL license and its use cases in open-source projects.
19. (a) Explain the use of Alert Dialog and Toast for displaying messages in Android.
Or
(b) Explain the process of storing and retrieving data using SQLite in Android.
20. (a) Explain how messages are passed between threads in Android with examples.
Or
(b) Describe the use and role of handlers in managing thread communication in Android.
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C-7611

Sub. Code

82761

B.Sc. DEGREE EXAMINATION, APRIL 2026

Sixth Semester

UI Design and Development

WEB DEVELOPMENT USING REACT

(2023 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 1 = 10)

Answer **all** questions.

1. React.js is primarily used for building which part of web applications?
(a) Backend (b) Database
(c) Frontend (d) Server
2. React.js was developed by which company?
(a) Google (b) Microsoft
(c) Facebook (d) Apple
3. In React, reusable pieces of UI are called
(a) Widgets (b) Components
(c) Templates (d) Modules
4. Which hook in React is commonly used to manage state in functional components?
(a) useProps (b) useRender
(c) useState (d) useClass

5. Which library is commonly used for client-side routing in React applications?
- (a) Redux (b) ReactRouter
(c) Axios (d) Firebase
6. The component used to define routing rules in React Router is
- (a) Route
(b) Switch
(c) BrowserRouter
(d) Link
7. Which library is commonly used for managing complex state in React applications?
- (a) Axios (b) Redux
(c) Firebase (d) Router
8. In Redux, the data store is
- (a) Mutable (b) Asynchronous
(c) Immutable (d) Temporary
9. Which tool is commonly used for testing React components?
- (a) Mocha (b) Jest
(c) Selenium (d) Puppeteer
10. Which hook can be used to optimize expensive calculations in React?
- (a) useEffect (b) useState
(c) useMemo (d) useContext

Part B

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Explain the key features and benefits of using React.js in web development.

Or

- (b) Describe the steps involved in setting up the development environment for React.js.

12. (a) Explain the process of building reusable React components with suitable examples.

Or

- (b) Describe the React component lifecycle and its stages with practical use cases.

13. (a) Explain the process of implementing client-side routing using React Router.

Or

- (b) Describe the steps involved in creating navigation menus and links in React applications.

14. (a) Describe the steps to connect React components with the Redux store.

Or

- (b) Explain the process of managing complex state in React applications using Redux.

15. (a) Explain the importance of testing React components in application development.

Or

- (b) Describe the process of testing React components using Jest or Enzyme.

Part C

(5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Explain the syntax and purpose of JSX in React.js with examples.

Or

- (b) Describe the process of creating React components and rendering them to the DOM.

17. (a) Explain the purpose and use of hooks in React functional components.

Or

- (b) Describe how user events and interactions are handled in React applications.

18. (a) Explain the concept of dynamic routing in React Router with examples.

Or

- (b) Describe the use of route parameters in React Router for passing data.

19. (a) Explain the use of Axios for making API requests in React applications.

Or

- (b) Describe how to use the Fetch API for handling API requests in React.

20. (a) Explain various performance optimization techniques in React applications.

Or

- (b) Describe the significance of code-splitting in React performance optimization.

C-7612

Sub. Code

82762

B.Sc. DEGREE EXAMINATION, APRIL 2026

Sixth Semester

UI Design and Development

ADVANCED FRAMEWORK – TAILWIND

(2023 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 1 = 10)

Answer **all** questions.

1. The Tailwind CSS, which configuration file is commonly used?
(a) tailwind.json (b) tailwind.config.js
(c) config.tailwind.js (d) tailwindcss.config
2. Which keyword in Tailwind CSS configuration helps remove unused CSS in production?
(a) clean (b) trim
(c) remove (d) purge
3. Tailwind CSS theming allows developers to define custom _____.
(a) layouts (b) themes
(c) color palettes (d) grid systems
4. A collection of reusable components styled using Tailwind CSS can be referred to as a
(a) framework (b) boilerplate
(c) template (d) UI kit

5. In Tailwind CSS, responsive design is built using a _____ first approach.
- (a) desktop (b) tablet
(c) print (d) mobile
6. Which utility in Tailwind CSS is commonly used to define grid columns?
- (a) flex (b) col-span
(c) container (d) hidden
7. Version control in projects is commonly managed using
- (a) FTP (b) SSH
(c) Git (d) NPM
8. Optimizing CSS for production helps in reducing _____ usage on client devices.
- (a) CPU (b) memory
(c) bandwidth (d) color
9. Which process removes unnecessary CSS to reduce file size before production?
- (a) compressing (b) purging
(c) bundling (d) hashing
10. Tailwind CSS is often used with which JavaScript framework for building complex UIs?
- (a) Django (b) Flask
(c) React (d) Laravel

Part B

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Illustrate how to configure the tailwind.config.js file to customize a Tailwind project.
- Or
- (b) Analyze the role of Tailwind CSS documentation in learning and implementing the framework effectively.

12. (a) Describe the steps involved in designing a custom UI kit using Tailwind CSS.

Or

- (b) Discuss how extending the theme configuration helps in maintaining design consistency.

13. (a) Discuss how building mobile-first interfaces can improve user experience across devices.

Or

- (b) Explain how to utilize Tailwind CSS utilities for implementing responsive grid layouts.

14. (a) Design a responsive layout using an advanced grid system for a simple landing page.

Or

- (b) List common breakpoints used in responsive design for different device categories.

15. (a) Evaluate the role of accessibility considerations in modern web application development using Tailwind CSS.

Or

- (b) Create a checklist for deploying and maintaining a Tailwind CSS project in production.

Part C

(5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Explain how responsible breakpoints are handled in tailwind CSS with practical example.

Or

- (b) Discuss techniques for optimizing CSS file size when deploying a Tailwind CSS project to production.

17. (a) Explain the role of the plugins section in Tailwind CSS configuration for adding custom utilities.

Or

- (b) Write about the process of creating reusable components while designing a custom UI kit with Tailwind CSS.

18. (a) Write about the role of breakpoints in creating adaptive and flexible layouts.

Or

- (b) Describe practical exercises that can help in mastering responsive design techniques.

19. (a) Discuss the role of media queries in creating adaptable layouts for various screen sizes.

Or

- (b) Illustrate with an example how you would convert a non-responsive layout into a mobile-first interface.

20. (a) Describe the relationship between Just-in-Time (JIT) mode in Tailwind and performance optimization.

Or

- (b) Explain how you would apply purge CSS techniques to optimize Tailwind CSS in a project before deployment.