

BOLLSOM

First Sem – 20/10/2025

BCA

Subject: Maths

Duration: 2

Max. Marks: 20

General Instructions:

1. All questions are compulsory unless stated otherwise.
2. The question paper consists of 4 section(s).
3. Figures to the right indicate full marks for each question.
4. Read all questions carefully before answering.

MULTIPLE CHOICE QUESTIONS (MCQ)

[1 mark each]

Multiple Choice Questions (MCQ) | Bloom's Level: Remembering

1. What is the primary purpose of a Redux action?
(A) To store data (B) To describe an event [1]
(C) To modify component props (D) To render UI
2. Which of the following best describes the shape of a Redux action object?
(A) {type: string, payload: any} (B) {state: object, reducer: function} [1]
(C) {dispatch: function, subscribe: function} (D) {store: object, getState: function}
3. In Redux, the reducer function must be pure. Which statement correctly characterizes a pure function?
(A) It can have side effects (B) It always returns a new object [1]
(C) It must not depend on external state (D) It can modify its arguments
4. Which Redux middleware is commonly used to handle asynchronous actions?
(A) Redux Logger (B) Redux Thunk [1]
(C) Redux Persist (D) Redux DevTools
5. In a Redux store, which method is used to subscribe to state changes?
(A) dispatch (B) subscribe [1]
(C) getState (D) replaceReducer

OBJECTIVE TYPE

[1 mark each]

Objective Type | Bloom's Level: Remembering

6. The Redux store holds the _____ (state) of the application. [1]
7. Redux actions must always contain a payload field. [1]
8. What is the name of the function that creates a Redux slice? [1]
9. Which of the following is NOT a builtin Redux middleware? [1]

10. The Redux DevTools extension provides which of the following features?

[1]

SHORT ANSWER

[1 mark each]

Short Answer | Bloom's Level: Remembering, Applying, Analyzing, Understanding

11. Explain the role of the reducer function in Redux.

[1]

12. Given a Redux store with initial state {count: 0} and a reducer that handles actions 'INCREMENT' and 'DECREMENT', what will be the state after dispatching actions INCREMENT, DECREMENT, INCREMENT?

[1]

13. Differentiate between mapStateToProps and useSelector in React Redux.

[1]

14. Justify why immutability is important in Redux reducers.

[1]

15. Analyze how Redux Toolkit's createSlice simplifies reducer logic compared to manual reducer definition.

[1]

LONG ANSWER

[1 mark each]

Long Answer | Bloom's Level: Remembering, Understanding, Creating, Applying, Analyzing

16. Design a Redux slice for managing a shopping cart with actions to add, remove, and clear items, and write the reducer logic.

[1]

17. Explain how Redux DevTools enable timetravel debugging and why it is valuable for state management.

[1]

18. Apply the concept of pure functions to a mathematical function that computes the sum of squares of numbers in a state array, and illustrate how it can be used as a selector.

[1]

19. Analyze the tradeoffs between using Redux Toolkit's configureStore and manually setting up a Redux store with combineReducers and middleware.

[1]

20. Critically evaluate the use of Redux in a smallscale React application versus using React's builtin state management.

[1]