

Instructions:

1. This question paper consists of two sections, **A** and **B** of 50 marks each.
2. All questions are mandatory.
3. The total time to complete is 4.5 hours.
4. For your submission, you are required to create a GitHub repository with question **19** and **20** in its own folder and another document (.docx or .pdf) which will contain your solutions for question **1-18**.

Section-A (50 Marks)**Question 1-10 contains 1 mark each**

1. Which of the following was NOT a newly added element in HTML5?
a. article b. audio c. nav d. frameset
2. Which element may be used within content to represent material that is tangential?
a. aside b. cite c. article d. class
3. In HTML Audio/Video DOM, _____ sets or returns the CORS settings of the audio/video.
a. autoplay b. buffered c. preload d. controller
4. What is the use of “defer” attribute?
a. It defers rendering of HTML page.
b. It defers script execution until the page has been rendered.
c. It defers rendering of CSS attributes
d. It request for the script asynchronously.
5. A _____ is used to define a special state of an element.
a. pseudo-tag b. pseudo-element c. pseudo-class d. pseudo-id
6. Which of the following CSS property can be used to provide the flex-direction and flex-wrap properties?
a. flex b. flex-flow c. flex-wrap d. all of the mentioned
7. As a general rule, properties in CSS inherit from _____ elements
a. child to parent b. parent to child c. grandparents to parents d. None of the above
8. What kind of scoping does JavaScript use?
a. Literal b. Segmental c. Lexical d. Sequential
9. Which function among the following lets to register a function to be invoked once?
a. setTimeout() b. setTotalTime() c. setInterval() d. setIntervalTime()
10. Which property is used to obtain browser vendor and version information?
a. modal b. version c. browser d. navigator

Questions 11-18 contains 5 marks each

11. Consider the two functions below, Will the return the same thing? Why or why not?

```
function foo1()  
{  
  return {  
    bar: "hello"  
  };  
}  
  
function foo2()  
{  
  return  
  {  
    bar: "hello"  
  };  
}
```

12. What is the output of the following code snippet? Also explain the reason behind the result.

```
var number = 0;  
console.log(number++);  
console.log(++number);  
console.log(number);
```

13. Find and explain the output of the following:

```
for (let i = 1; i < 5; i++) {  
  if (i === 3) continue;  
  console.log(i);  
}
```

14. Find and explain the output of the provided code snippet.

```
console.log(typeof typeof 1);
```

15. What is a “closure” in JavaScript? Provide an example.

16. What is “hoisting” in JavaScript? Write the code transformation after the 1st pass of JavaScript for the following code snippet.

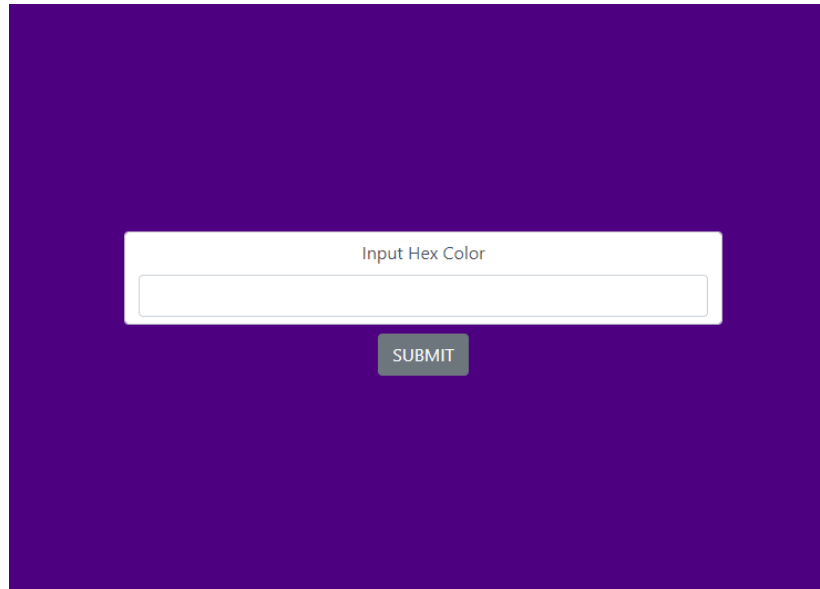
```
var result = concat(first_name, last_name);  
console.log(result);  
  
function concat(x, y) {  
  return x + y;  
}  
  
var first_name = "John";  
var last_name = "Doe";
```

17. Differentiate between callback functions and anonymous function. Give an example of both.

18. What is event bubbling and how to stop an event from bubbling?

Section-B (50 Marks)

19. Design and develop a hex color code visualizer like below (20 marks):



[Click here to view the GIF](#)

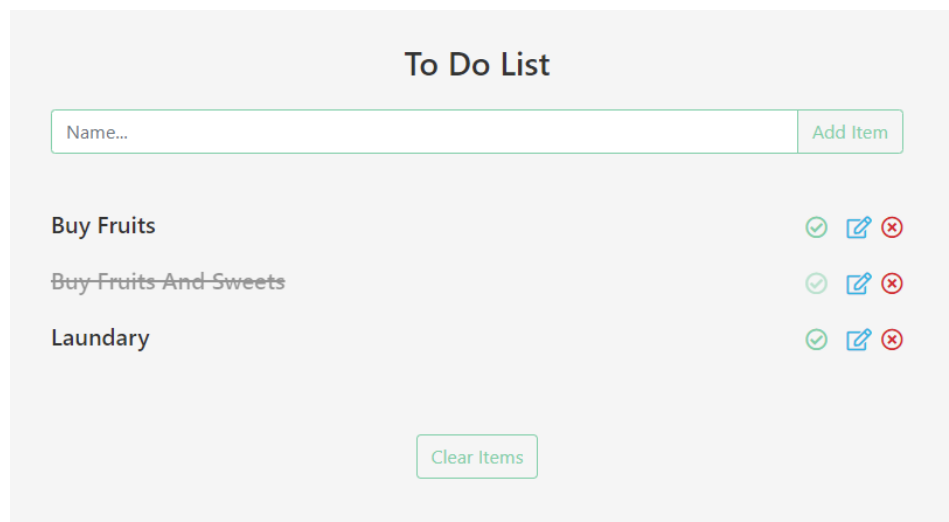
Functionalities/Requirements:

- User should be able to input any valid HEX color code and the background color should change to that color.
- Invalid HEX color code should be invalidated and notified to the user.
- The input and the submit button should be horizontally and vertically centered.
- The background should be full height and width of the browser window.

Notes:

- You are **NOT** allowed to use any 3rd party libraries like Bootstrap etc.
- Try to use as much semantic HTML you can use.
- Use best practices for development.

20. Design and implement a “To Do List” app with the features mentioned below (30 marks).



The screenshot shows a web application titled "To Do List". At the top, there is a text input field with the placeholder "Name..." and an "Add Item" button to its right. Below the input field, there is a list of three items: "Buy Fruits", "Buy Fruits And Sweets", and "Laundry". Each item has three icons to its right: a green checkmark, a blue pencil, and a red 'X'. The item "Buy Fruits And Sweets" is crossed out with a grey line. At the bottom of the list, there is a "Clear Items" button.

[Click here to view GIF](#)

Functionalities/Requirements:

- User should be able to input any text in the input field and create a 'todo' item by clicking 'Add Item' button.
- User should be able to edit any previously added 'todo' item accordingly.
- User should be able to mark a 'todo' item as completed (showing strikethrough) by clicking a button.
- User should be able to delete an individual 'todo' item.
- User should be able to delete all the items at once by clicking a button.
- Everything should be vertically and horizontally centered.

Notes:

- You are **allowed** to use any 3rd party libraries like Bootstrap etc.
- Try to use as much semantic HTML you can use.
- Use best practices for development.