RAMAIAH
Institute of Technology

USN | 1 | M | S | | | | | | |

EXAMINATIONS SEPTEMBER /OCTOBER 2021
SUPPLEMENTARY SEMESTER / GRADE IMPROVEMENT/ RE –REGISTERED CANDIDATES

Program	: **B.E. : Computer Science and Engineering**	**Semester** : **VI**
Course Name	: **Unix System Programming and Web Technologies**	**Max. Marks** : **100**
Course Code	: **CS62/CS63(O)**	**Duration** : **3 Hrs**

Instructions to the Candidates:
- Answer any five full questions.

1.	a)	With a correct syntax and examples, explain the following APIs: (i) open (ii) umask (iii) chown	CO1	(06)
	b)	With the help of a C program, explain the working of access system call.	CO1	(04)
	c)	What is the use of Canvas Element in HTML5? Give an example of Canvas element how it can be used to draw rectangle.	CO4	(06)
	d)	Illustrate the following: i) How do I have links of different colors on the same page? ii) How to display a link without underline and display underline when mouseover on the link using CSS?	CO4	(04)
2.	a)	Differentiate between file descriptor and inode. Discuss the various file types in UNIX system.	CO1	(05)
	b)	Write a C program that takes a directory name from command line and list all files whose filename end with ".out" extension.	CO1	(05)
	c)	Create a Java Script function called verbing. It should take a single argument, a string. If its length is at least 3, it should add 'ing' to its end, unless it already ends in 'ing', in which case it should add 'ly' instead. If the string length is less than 3, it should leave it unchanged. For example: verbing('swim'): 'swimming' verbing('swimming'): 'swimmingly' verbing('go'): 'go'	CO4	(05)
	d)	Cite different types of CSS.	CO4	(05)
3.	a)	With a neat diagram, explain the memory layout of a C program.	CO2	(06)
	b)	Explain the different fields of flock structure used in fcntl APIs during locking of a file.	CO2	(04)
	c)	What is difference between these two snippets of code and why it is needed? function Student () { this.name=" CSE";	CO4	(04)

```
this. setName=function(name) {
this.name=name;}}
function Student () {
this.name=" CSE" ;}  student.prototype.setName=function(name){
this.name=name;}
```

d) Explain hoisting of functions and variables in java script with an example and show the contents of lexical environment in each step . CO4 (06)

4. a) Differentiate between exit and _exit functions. Also, explain how user defined exit handlers get executed at the time of process termination with an example program. CO2 (07)
   b) Write a C program to demonstrate the usage of command line arguments. CO2 (03)
   c) What is output of the following code? Is output is as excepted if not write the correct code to print every name in the rankings array together with its index. CO4 (04)

```javascript
// Asynchronous code
var rankings = ['alice', 'bob', 'eve'];
for (var i = 0, len = rankings.length; i < len; i++) {
  setTimeout(function() {
    console.log(i, rankings[i]);
  }, i * 10000);
}
```

   d) Explain the difference between nested function and closure with an example CO4 (06)

5. a) Explain any three forms of exec function with a "syntax". CO2 (06)
   b) Write a note on Process Groups highlighting the Unix system calls involved in managing process groups. CO2 (04)
   c) What does it mean "non-blocking" in node.js. CO4 (04)
   d) Explain the following with an example: CO4 (06)
      i)   module.exports
      ii)   How to create Http server in node.

6. a) Write a C program to demonstrate the working of wait function by considering any two ways of process termination. CO2 (05)
   b) Briefly explain about the processes involved in terminal login. CO2 (05)
   c) Write an npm script to check whether the number is prime or not. Also specify the contents of package JSON. CO4 (06)
   d) What are the key features of NPM? CO4 (04)

7. a) Explain the working of kill and raise functions. CO3 (04)
   b) Write a note on error logging by daemons. CO3 (06)
   c) What is Express Validator? Write a node.js program using Express framework accept car information viz Registration Number, Model, color, year of purchase. Validate Reg. Number should not empty and year should be an integer. (Note: Use Express Validator) CO5 (10)

8. a) Define a signal. Give the syntax of signal function and explain about signal masks. CO3 (04)
   b) Write a C program highlighting the steps to create a daemon process. CO3 (06)
   c) Explain the Following with an example: CO5 (10)
      ● How to create server by using express (note use, both get and post method)
      ● Routing

9. a) What is JSX? Explain how React uses JSX to make HTML elements with an example. How does it differ from HTML?   CO5   (08)

    b) Distinguish between class component and functional component. Also, create a React app using class component to implement a Counter. The app should have two buttons to increment and decrement a state value and the display the state in blue div with yellow text. Use inline styles to style the elements.   CO5   (12)

10. a) What is the virtual DOM? How does React use the virtual DOM to render the UI? Explain the same with a diagram where the events and updates are shown with and without a virtual DOM.   CO4   (06)

    b) What is React.createClass? Explain.   CO4   (04)

    c) What are Hooks? Explain the various types of hooks highlighting their syntax and related class component method.   CO5   (10)

****