UPES

End Semester Examination, December 2024

Course: Advanced Web Technologies　　　　　　　　　**Semester　: 3**
Program: BCA　　　　　　　　　　　　　　　　　　　**Time　　: 03 hrs.**
Course Code: CSEG2062　　　　　　　　　　　　　　　**Max. Marks: 100**

Instructions: All questions are compulsory.

SECTION A
(5Qx4M=20Marks)

S. No.		Marks	CO

Q 1	In the following code snippet, what does req.session.userId = username; do? Explain its purpose in the context of session management in a Node.js application using Express.
	//code snippet
	app.post('/login', (req, res) => {
	const { username } = req.body;
	req.session.userId = username;
	});
		4	**CO1**

Q 2	Explain the concept of modules in Node.js and discuss the different types of modules available. Provide examples for each type.	**4**	**CO1**

Q3	Fill in the snippet code.
	
	3.1] Define an event listener for a custom event named 'eventName':
	myEmitter._____(_____, () => { console.log('An event occurred!'); });
	
	3.2] Complete the following code snippets related to the util.inherits() method and custom event handling in Node.js by filling in the blanks.
	const util = require('util');
	const _____ = require('events');
	function streamData()
	{ _____.call(this);
	}
	console.log("Returning util.inherits():",_____(streamData, _____));
	
	3.3] Complete the code:
	const express = require('express'); const session = require('_____');
	const app = express(); app.use(session({ secret: '_____', resave: false, saveUninitialized: true, secure: false }));
		1+2+1	**CO1**

Q4	Explain how the Traditional Web Server Model handles incoming requests compared to the Node.js Process Model. What are the implications of these differences on performance	**4**	**CO1**
Q5	What are the key steps involved in setting up a MongoDB database? List them in order.	**4**	**CO3**
SECTION B **(4Qx10M= 40 Marks)**			
Q6	Write a program to create and destroy the session in Node.js. **Note**: The program should include comments to describe each part of the code properly.	**10**	**CO1**
Q7	Explain the concepts of concurrency control and recovery in distributed databases with example.	**10**	**CO3**
Q8	Discuss the four main principles of object-oriented programming (OOP): Encapsulation, Abstract, Inheritance, and Polymorphism with examples.	**10**	**CO1**
Q9	Examine the differences between client-server distributed database systems and peer-to-peer distributed database systems.	**10**	**CO2**
SECTION-C **(2Qx20M=40 Marks)**			
Q10	Write a program to create an application for a shopping center with all the facilities like add an item, delete an item, update an item detail, stock report, sale etc.	**20**	**CO3**
Q11	Create an application to fetch data from csv file and populate a graph using SVG and D3.	**20**	**CO3**