

Reg. No.

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B.E./ B. TECH.DEGREE EXAMINATIONS, MAY 2024

Fifth Semester

IT18005 – FREE AND OPEN SOURCE SOFTWARE*(Information Technology)***(Regulation 2018 /2018A)****TIME:3 HOURS****MAX. MARKS: 100**

COURSE OUTCOMES	STATEMENT	RBT LEVEL
CO 1	Compare and contrast the context and operation of free and open source software (FOSS) and its applications.	4
CO 2	Assess the functionalities of Linux operating system and its development tools.	5
CO 3	Build real-time applications using Python.	6
CO 4	Develop web applications using PERL Scripting.	6
CO 5	Design data interchange applications using JSON.	6

PART- A(10x2=20Marks)

(Answer all Questions)

	CO	RBT LEVEL
1. Describe the benefits of free and open source software.	1	3
2. Identify the actions carried out to promote free software movement.	1	3
3. Explain the uses of strace in Linux environment.	2	4
4. Categorize the different identifiers assigned to a process in Linux operating system.	2	4
5. Write the Python code snippet to access the inner list element 'x' of the tuple ('a', 'b', ['x','y'], 3) using negative indexing.	3	4
6. Write a simple code in python to display the command line arguments which were entered by user.	3	4
7. Write the Perl program to convert a hash to array.	4	4
8. Construct a Perl program to add two numbers using shift function.	4	4
9. Create an object in JavaScript using JSON for car which has name, color, year of manufacturing, brand as attributes. Display the details of car in HTML code.	4	5
10. Illustrate the use of JSON schema.	4	3

PART- B (5x 14=70Marks)

	Marks	CO	RBT LEVEL
11. (a) (i) Compare and contrast between free software philosophy and open source software philosophy with suitable example.	(7)	1	3

- (ii) Explain in detail about criticism and controversy faced by free software movement and Identify the suitable actions to overcome the issues. (7) 1 3

(OR)

- (b) (i) Summarize the open source software used in different domains. (7) 1 2
(ii) Interpret in detail about distribution terms of open source software. (7) 1 3

12. (a) (i) Explain the different GNU products used for the development of applications in Linux operating system. (7) 2 4
(ii) Organize the different functions used for Linux kernel operations. (7) 2 4

(OR)

- (b) Illustrate in detail about the need of signals and signal management in Linux environment. Categorize the different signals based on its usages. (14) 2 4

13. (a) (i) Strontio numbers are those four digits numbers when multiplied by 2 give the same digit at the hundreds and tens place. Hence 1386 is a Strontio number [1386*2 = 2772]. Construct a Python program to print all the Strontio number in the given range. (7) 3 3

- (ii) Given an integer value, return a string with the equivalent English text of each digit. For example, an input of 89 results in "eight-nine" being returned. Write a Python program to perform the above task. (7) 3 3

(OR)

- (b) Akshai is developing a Python application to manipulate data. He needs to read the data from a file a.txt and to write the data in b.txt which is located in another directory. After completed the writing task, rename the file b.txt into output.txt. Implement the application using Python. (14) 3 3

14. (a) (i) With suitable code snippet to explain Perl parsing rules. (7) 4 3
(ii) Construct a Perl package which name is "Employee". Get the employee details and salary components such as Basic pay, Dearness Allowance, House Rent Allowance and Provident Fund as input and calculate the gross and net salary. (7) 4 3

(OR)

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|----------------|---|------------|----------|----------|
| (b) | (i) Write a Perl program to remove the trailing and leading white spaces in the string entered by user. | (7) | 4 | 3 |
| | (ii) Develop a Perl code to get n different numbers and find the minimum and maximum of the given numbers using subroutines. | (7) | 4 | 3 |
| 15. (a) | (i) With suitable code snippet, explain different data types supported by JSON format. | (7) | 5 | 3 |
| | (ii) Write a HTML code to get JSON string array and arrange the strings in alphabetical order. | (7) | 5 | 3 |
| (OR) | | | | |
| (b) | (i) Illustrate in detail about the functions used to convert one form to another while exchanging data between web servers with suitable code snippet. | (7) | 5 | 3 |
| | (ii) Write a JSON snippet that handles the request coming from different domain with an example. | (7) | 5 | 3 |

PART- C(1x 10=10Marks)

(Q.No.16 is compulsory)

- | | | Marks | CO | RBT
LEVEL |
|------------|---|--------------|-----------|----------------------|
| 16. | ABC firm has several branches worldwide. The organization is developing a project to collect book details of different domains and wants to perform analysis. Each branch is collecting information and it has to be consolidated in the headquarters. They wanted to easily interchange the data and to store it in the central database. Recommend a suitable interchange format and database. Justify your answer by performing CRUD operations. | (10) | 5 | 5 |
