

Register No: Name:



**SAINTGITS COLLEGE OF ENGINEERING
KOTTAYAM, KERALA**

(AN AUTONOMOUS COLLEGE AFFILIATED TO
APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

**FIRST SEMESTER M.TECH. DEGREE EXAMINATION(R), MARCH 2021
COMPUTER SCIENCE AND SYSTEMS ENGINEERING**

Course Code: 20CSSET107

Course Name: DISTRIBUTED SYSTEMS AND ADVANCED COMPUTING

Max. Marks: 60

Duration: 3 Hours

PART A

(Answer all questions. Each question carries 3 marks)

1. Write a note on different Distributed Computing Paradigms.
2. Distinguish between HADOOP and Database Management System.
3. Highlight the difference between Input Split and Block in MapReduce.
4. What are the different components of a Hadoop Node.
5. Demonstrate the use of single physical interfaces for preparing networks in DevStack.
6. Consider an online shopping site whose transaction workload increases during festive seasons like Christmas. For this specific period of time, the resources need spike up. As soon as the season goes out, the deployed resources should be requested for withdrawal. Identify the type of service that one should opt for in order to handle this situation.
7. Write short note on Image management in OpenStack
8. Justify the need of Swift in OpenStack.

PART B

(Answer one full question from each module, each question carries 6 marks)

MODULE I

9. Compare various Distributed systems which can be used to implement networks in Enterprises. (6)

OR

10. Describe different Client-Centric Consistency models in detail. (6)

MODULE II

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11. The team of doctors in a Geriatric home are dealing with medical data from sensors as a part of their research. But collecting and storing these data is expensive and cost prohibitive. How can they effectively use and store the data without being plunged periodically. Design and suggest an architecture along with components that can be used by them to effectively handle this crisis. (6)

OR

12. Determine the number of blocks, and the size of each block, where a file of size 812 MB is stored in HDFS (Hadoop Version 1.0 and 2.x). Assume default replication factor and default block configuration. (6)

MODULE III

13. Illustrate the working of Map reduce Algorithm by finding the word count in the following sentences. Your Answer must be supplemented with proper labelled diagrams and explanations wherever necessary. (6)

Hello I am a Doctor
Hello I am an Intern

Here is a Doctor and an Intern

OR

14. Explain the working principle of Hadoop. (6)

MODULE IV

15. Write a detailed note on various Input and output Formats used to create Input records to mapper. (6)

OR

16. Describe with the help of examples the various deployment models of cloud computing with examples. (6)

MODULE V

17. List the steps for deploying DevStack in sandbox environment. (6)

OR

18. Analyze the merits and demerits of Platform as a Service and Software as a Service. (6)

MODULE VI

19. Demonstrate the creation of various networks with neutron (6)

OR

20. Explain user management with keystone in OpenStack. (6)
