

Roll No



**PRESIDENCY UNIVERSITY
BENGALURU**

SET B

**SCHOOL OF ENGINEERING
END TERM EXAMINATION - JAN 2024**

Semester : Semester V - 2021

Course Code : CSE2032

Course Name : Introduction to FoG Computing

Program : B.Tech.

Date : 0J-JAN-2024

Time : 9:30AM - 12:30 PM

Max Marks : 100

Weightage : 50%

Instructions:

- (i) Read all questions carefully and answer accordingly.
- (ii) Question paper consists of 3 parts.
- (iii) Scientific and non-programmable calculator are permitted.
- (iv) Do not write any information on the question paper other than Roll Number.

PART A

ANSWER ALL THE QUESTIONS

4 X 5M = 20M

1. Discuss the critical issues arising from resource constraints in Fog Nodes. (CO1) [Knowledge]
2. Provide a comprehensive explanation of the architecture of the IEEE 802.11 standard, supported by suitable diagrams. (CO2) [Knowledge]
3. Explain the process and considerations involved in forming clusters within lightweight edge clouds. (CO3) [Knowledge]
4. Explain the Basic components of IoT Applications and their uses with an example (CO4) [Knowledge]

PART B

ANSWER ALL THE QUESTIONS

5 X 10M = 50M

5. Detail the diverse Fog Computing deployment models, specifically exploring how the hierarchical model organizes fog nodes into layers. Discuss the advantages this organizational structure provides in terms of scalability, management, and optimizing resource utilization. (CO1) [Comprehension]
6. Provide an in-depth explanation of the Hierarchical Fog Computing Architecture Model, accompanied by a relevant diagram. (CO2) [Comprehension]

7. Imagine you are attending a major sporting event, like a football game in a large stadium, where thousands of spectators are in attendance. In such a scenario, different services and applications have varying requirements in terms of network performance and reliability. Design an architecture with Network Slicing.
(CO3) [Comprehension]
8. Provide a comprehensive explanation regarding the necessity of middleware in Fog and Edge Computing.
(CO3) [Comprehension]
9. Explain how fog computing facilitates real-time data processing for big data analytics.
(CO4) [Comprehension]

PART C

ANSWER ALL THE QUESTIONS

2 X 15M = 30M

10. Which device is not a typical edge device?
(CO1) [Knowledge]
11. *Your organization needs to comply with industry-specific regulations and standards. How do you ensure that the edge cloud architecture meets these compliance requirements, and how do you stay abreast of evolving regulations that may impact the security landscape?*
(CO4) [Application]