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# B.M.S. College of Engineering, Bengaluru-560019

**Autonomous Institute Affiliated to VTU**

## January / February 2025 Semester End Main Examinations

**Programme: B.E.** **Semester: V**
**Branch: Information Science and Engineering** **Duration: 3 hrs.**
**Course Code: 22IS5PCCLC** **Max Marks: 100**
**Course: Cloud Computing**

**Instructions**: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

**Important Note:** Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

| | | | UNIT - I | *CO* | *PO* | Marks |
|---|---|---|---|---|---|---|
| 1 | a) | | Identify the driving forces or key motivations behind the emergence of cloud computing. | *CO2* | *PO1* | **10** |
| | b) | | Despite the initial success and popularity of the cloud computing paradigm and the extensive availability of providers and tools, a significant number of challenges and risks are inherent to cloud computing. Identify the challenges and risks associated with cloud. | *CO2* | *PO1* | **10** |
| | | | **OR** | | | |
| 2 | a) | | Users working in traditional datacenters decide to move on to cloud. Explain the various steps involved in migration to cloud. | *CO2* | *PO1* | **10** |
| | b) | | Explain the basic and advanced features that are usually available in Virtual Infrastructure Manger [VIM]. | *CO1* | | **10** |
| | | | **UNIT - II** | | | |
| 3 | a) | | Differentiate between live migration and cold migration with example. Identify the reasons for migration. | *CO2* | *PO1* | **10** |
| | b) | | Identify the core components of Xen system. How domain zero of Xen is used for control and input/output? Depict with necessary architectural diagram. | *CO2* | *PO1* | **10** |
| | | | **OR** | | | |
| 4 | a) | | Apply live migration's mechanism and illustrate how memory and virtual machine states are being transferred, through the network, from one host A to another host B on Xen Hypervisor. | *CO2* | *PO1* | **10** |
| | b) | | A user as a requirement of running a task in a machine. How Virtual Machine is provisioned to the user for completing the task? Justify your answer. | *CO2* | *PO1* | **10** |

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| | | | **UNIT - III** | | | |
| | 5 | a) | Identify the key principles of microservices architecture. | ***CO3*** | ***PO2*** | **04** |
| | | b) | Illustrate the Microservices approach for a shopping application. | ***CO3*** | ***PO2*** | **08** |
| | | c) | With a neat diagram, analyze the monolithic application with all the functions needed to support online shopping built into a single program. | ***CO3*** | ***PO2*** | **08** |
| | | | **OR** | | | |
| | 6 | a) | Illustrate the gRPC approach with a neat diagram. Why is it considered as most popular? | ***CO2*** | ***PO1*** | **10** |
| | | b) | "Microservices is widely used in cloud computing". Give reasons for the same. | ***CO3*** | ***PO2*** | **6** |
| | | c) | Identify the disadvantages of Microservices with respect to cascading errors and Management complexity. | ***CO2*** | ***PO1*** | **4** |
| | | | **UNIT - IV** | | | |
| | 7 | a) | Explain the principles of the Zero Trust security model and how it addresses modern security challenges. | ***CO3*** | ***PO2*** | **10** |
| | | b) | Discuss the potential risks associated with unmanaged privileged accounts and how Privileged Access Management [PAM] addresses these risks. | ***CO3*** | ***PO2*** | **10** |
| | | | **OR** | | | |
| | 8 | a) | Differentiate between Single sign on and Zero Trust Security model with example. | ***CO1*** | | **8** |
| | | b) | Identify the security threats with respect to AI Technologies. | ***CO2*** | ***PO1*** | **6** |
| | | c) | A file is shared among the employees belonging to different roles. How do you give permissions to handle the shared file among them? | ***CO3*** | ***PO2*** | **6** |
| | | | **UNIT - V** | | | |
| | 9 | a) | Explain how network latency and data transfer times contribute to overall latency in cloud environments. | ***CO3*** | ***PO2*** | **10** |
| | | b) | How does extending Edge computing to a Fog hierarchy further enhance performance and reduce latency? | ***CO3*** | ***PO2*** | **10** |
| | | | **OR** | | | |
| | 10 | a) | Elucidate the aspects of connected vehicle systems lend themselves to the edge computing in an automotive industry. | ***CO1*** | | **6** |
| | | b) | Distinguish the characteristics of an IIOT applications from consumer IOT applications with an automated assembly line example. | ***CO2*** | ***PO1*** | **10** |
| | | c) | How Edge computing eliminates the drawbacks of cloud computing? | ***CO3*** | ***PO1*** | **4** |



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