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| **Pokhara University** | |
|  | Year: 2023 |
|  | Full Marks: 100 |
| Course: Cloud Computing | Pass Marks: 45 |
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| Candidates must give their answers in their own words as far as practicable.  The figures in the margin indicate full marks.  **Attempts all the questions** | |

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| 1 | a | Why could cloud computing be successful when other paradigms have failed? What are the characteristics of cloud computing? | 3+4 |
|  | b | What is Platform-as-a-Service (PaaS)? Explain the backend architecture of cloud computing. | 3+5 |
| 2 | a | What are the infrastructural constraints in cloud computing? Explain Multiple-instruction multiple-data (MIMD) systems. | 3+4 |
|  | b | What is a hypervisor? How can microservices eliminate the problem of monolith architecture? | 3+5 |
| 3 | a | How can attackers attack the hypervisors? | 7 |
|  | b | What is horizontal scaling? How can IT resource over-utilization be avoided? | 3+5 |
| 4 | a | What is threat agent? Explain Map reduce algorithm. | 3+5 |
|  | b | What is cloud computing open architecture? Explain Jericho cloud cube model. | 3+4 |
| 5 | a | Explain Service-level agreement (SLA) with its types. | 8 |
|  | b | One cloud consumer has it set up so that whenever resource usage exceeds 80% of a virtual server’s capacity for 60 consecutive seconds, the automated scaling listener triggers the scaling-up process by sending the virtual infrastructure manager (VIM) platform a scale-up command. Conversely, the automated scaling listener also commands the VIM to scale down whenever resource usage dips 15% below capacity for 60 consecutive seconds. Optimize the cloud resources using an automated scaling listener. | 7 |
| 6 | a | What is containerization? A company wants to lunch a ride-sharing application. As a software developer create the service-oriented architectures (SOA) for the ride-sharing application. | 3+5 |
|  | b | Explain different types of cloud security threats. | 7 |
| 7 | Write short notes on **(Any two)** | | 2x5 |
|  | a | Public cloud |  |
|  | b | Identity and access management (IAM) |  |
|  | c | Redundancy |  |