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## CCIE Service Provider Lab Exam Version 3.0

**Exam Description:** The Cisco CCIE® Service Provider Lab Exam version 3.0 is an 8-hour test that will validate that professionals have the expertise to implement, optimize, and troubleshoot complex service provider networks.

The following topics are general guidelines for the content likely to be included on the exam. However, other related topics may also appear on any specific delivery of the exam. In order to better reflect the contents of the exam and for clarity purposes, the guidelines below may change at any time without notice.

- 50%**    **1.0**    **Implement, Optimize and Troubleshoot Core IP Technologies**
  - 1.1    Implement, optimize, and troubleshoot packet over SONET
  - 1.2    Implement, optimize, and troubleshoot GE/10GE in the core
  - 1.3    Implement, optimize, and troubleshoot IGP routing
  - 1.4    Implement, optimize, and troubleshoot MPLS and LDP
  - 1.5    Implement, optimize, and troubleshoot MPLS traffic engineering
  - 1.6    Implement, optimize, and troubleshoot BGP
  - 1.7    Implement, optimize, and troubleshoot multicast
  - 1.8    Implement, optimize, and troubleshoot high availability
  - 1.9    Implement, optimize, and troubleshoot convergence
  - 1.10    Implement, optimize, and troubleshoot SP QoS
  - 1.11    Implement, optimize, and troubleshoot security in the core
  
- 3%**    **2.0**    **Implement, Optimize and Troubleshoot Access and Edge Connection Technologies**
  - 2.1    Implement, optimize, and troubleshoot FE/GE and ethernet trunk connections
  - 2.2    Implement, optimize, and troubleshoot frame relay connections
  - 2.3    Implement, optimize, and troubleshoot PPP connections
  
- 35%**    **3.0**    **Implement, Optimize and Troubleshoot L3VPN Technologies**
  - 3.1    Implement, optimize, and troubleshoot Intra-AS L3VPN
  - 3.2    Implement, optimize, and troubleshoot Inter-AS L3VPN
  - 3.3    Implement, optimize, and troubleshoot CSC
  - 3.4    Implement, optimize, and troubleshoot VPN extranet and Internet access
  - 3.5    Implement, optimize, and troubleshoot VRF service
  - 3.6    Implement, optimize, and troubleshoot multicast VPN
  - 3.7    Implement, optimize, and troubleshoot GRE L3VPN
  
- 12%**    **4.0**    **Implement, Optimize and Troubleshoot L2VPN Technologies**
  - 4.1    Implement, optimize, and troubleshoot AToM
  - 4.2    Implement, optimize, and troubleshoot VPLS and carrier ethernet
  - 4.3    Implement, optimize, and troubleshoot L2TPv3 for L2 VPN
  - 4.4    Implement, optimize, and troubleshoot GRE L2VPN