

Huawei ICT Competition Middle East 2021 Exam Outline

– Practice Track

1. Overview

1.1. Practice Track of Huawei ICT Competition Preliminary Stage Overview

Competition Stage	Exam type	Duration	Number of Questions	Question Types	Total Score
Preliminary Stage	Written	90 min	60	True/False Questions, Single-Choice Question and Multiple-Choice Question	1000

1.2. Practice Track of Huawei ICT Competition National Stage Overview

Competition Stage	Exam type	Duration	Number of Questions	Question Types	Total Score
National Stage	Written	90 min	90	True/False Questions, Single-Choice Question and Multiple-Choice Question	1000

1.3. Practice Track of Huawei ICT Competition Regional Stage Overview

Competition Stage	Exam type	Duration	Number of Questions	Question Types	Number of participants	Total Score
Regional Stage	Written	90 min	60	True/False Questions, Single-Choice Question and Multiple-Choice Question	1(Personal)	1000
	Lab	4 Hours	/	/	3(Team)	1000

Remark: The final score= 30% * the average score of the written exam of 3 examinees in the same team + 70% * the score of the lab exam of the team

2. Weighting

2.1. Practice Track of Huawei ICT Competition Preliminary Stage weighting

Competition Stage	Direction	Weight
Preliminary Stage	Datacom	40%
	Security	10%
	WLAN	5%
	5G	20%
	Cloud	10%
	Storage	5%
	AI	10%

2.2. Practice Track of Huawei ICT Competition National Stage weighting

Competition Stage	Direction	Weight
National Stage	Datacom	40%
	Security	10%
	WLAN	5%
	5G	20%
	Cloud	10%
	Storage	5%
	AI	10%

2.3. Practice Track of Huawei ICT Competition Regional Stage weighting

Competition Stage	Direction	Weight
Regional Stage(Written)	5G	30%
	AI	30%
	Cloud	20%
	Storage	20%
Regional Stage(LAB)	Datacom	50%
	Security	35%
	WLAN	15%

3. Scope

3.1. Overview of Exam Contents

The exam contents **include but are not limited to** the knowledge of Cloud, Storage, AI, 5G and Datacom, Security, WLAN. Specific exam contents are as follows: basics and solutions of Huawei Public Cloud; basics and solutions of Huawei Cloud Computing; basics and solutions of Huawei Storage; and basics of AI; basics and solutions of Huawei 5G; basics and solutions of Huawei Datacom, Security, and WLAN; Each direction includes tests on general knowledge of the corresponding industry and tests on Huawei's products, solutions, and services.

3.2. Knowledge to Be Tested

Datacom:

1. Datacom basics, TCP/IP protocol basics.
2. STP, RSTP and MSTP switching behavior, application and configuration.
3. TCP/IP protocol stack basics, principles of WAN (such as PPP) protocols, PPPoE implementation at the customer edge, and application of these protocols to Huawei routers.
4. Principles and application of Ethernet technologies, VLAN, Eth-Trunk, iStack.
5. Principles and application of IPv6 basics, stateless auto-configuration, DHCPv6 and IPv6 transition technology.
6. Principles and application of static route, route-policy, OSPF, OSPFv3, ISIS (IPv4), ISIS (IPv6), BGP, and BGP4+.
7. Principles and configuration of MPLS, MPLS VPN, GRE VPN, L2TP, ACL, VRRP, and BFD.
8. Principles and configuration of Telnet, FTP, DHCP.
9. Principles and configuration of programming automation, the implementation of network automation.
10. Principles and Networking of SDN, such as VXLAN, BGP EVPN, and iMaster NCE application.
11. Principles and configuration of Multicast.
12. Principles and configuration of QoS.

13. Segment Routing Principle, such as SR-MPLS and SRv6.

Security:

1. Security information and security overview, such as information security standards and specifications, basic network concepts and common network devices, common information security threats, and threat defense and information security development trends.
2. Security attack and defense technologies, such as host and OS security, web security, IPS, information collection and network detection, content security filtering technology and data security.
3. Network security basis, such as security zone, security policy, network address translation technology, dual-system hot standby and firewall user management.
4. Application of encryption and decryption, such as encryption and decryption mechanism. PKI certificate system, and application of cryptographic technologies.
5. VPN technology such as L2TP VPN, GRE VPN, IPSec VPN, SSL VPN and L2TP over IPSec.
6. Security operation and analysis such as introduction to security operations, data monitoring and analysis, digital forensics, situation awareness and cybersecurity emergency response.
7. Advanced firewall features and networking, such as firewall intelligent uplink selection, server load balancing, bandwidth management, and virtual system.
8. Network-Layer security protection such as packet filtering, DDoS attack defense, single-packet attack defense, blacklist and whitelist and IP-MAC address binding.
9. Firewall IPv6 technologies.
10. Cloud security technology and network architecture design.

WLAN:

1. WLAN working principles and deployment.
2. WLAN topologies, 802.11 protocol, 802.11 physical layer technology, CAPWAP fundamentals.
3. WLAN configuration, roaming, two-node cluster hot backup, multicast and security configuration.

4. WLAN location technology.
5. WLAN service quality and network optimization.
6. Wi-Fi 6 technologies and products.
7. WLAN networking, planning and design.
8. WLAN IPv6 network, IPv6 basics, network security.
9. WLAN troubleshooting.
10. CloudCampus solution, VXLAN, underlay, fabric, overlay.

5G:

1. Challenges and opportunities in the 5G ICT industry
2. Overview of 5G use cases in industries
3. Requirement analysis, industry as-is and pain points, solutions, and use cases in the IoV/autonomous driving industry
4. Requirement analysis, industry as-is and pain points, solutions, and use cases in the smart healthcare industry
5. Requirement analysis, industry as-is and pain points, solutions, and use cases in the smart grid industry
6. Requirement analysis, industry as-is and pain points, solutions, and use cases in the smart education industry
7. Typical elements of 5G business planning and development

Cloud

1. Cloud Computing related concepts, including definitions, features, modes, benefits, scenarios, and future trends.
2. Cloud Computing technologies, including storage, network, virtualization, and containers.
3. Scenarios of HUAWEI CLOUD products, including cloud services and HCS.
4. HUAWEI CLOUD solutions, including application deployment in cloud and application migration to the cloud.
5. HUAWEI CLOUD computing services, including ECS, IMS and AS.
6. HUAWEI CLOUD storage services, including OBS, EVS, SFS and CBR.
7. HUAWEI CLOUD network services, including VPC, EIP, and ELB.

8. HUAWEI CLOUD Management & Governance services, including CTS, CES, IAM and LTS.
9. HUAWEI CLOUD security services, including HSS and WAF.
10. Huawei database services.
11. HUAWEI CLOUD container services, including CCE and AOS.
12. HUAWEI CLOUD data security service.

Storage

1. Storage product forms, components, working principles and application scenarios.
2. Working principles of traditional RAID (RAID 0, RAID 1, RAID 5, RAID 6, RAID 10) and RAID 2.0+.
3. Concepts, features, technologies, and architectures of DAS, SAN, and NAS.
4. Common storage system protocol, including SCSI, FC, iSCSI, CIFS, NFS, etc.
5. Introduction to Huawei storage products and typical applications.
6. OceanStor Dorado V6 product features, functions, hardware, interfaces, and typical networks.
7. Distributed storage technologies and applications, including Block, Object, HDFS, File service features).
8. Basic storage services configuration. (Creation of storage pools, LUNs, hosts, and mapping; installation of Huawei UltraPath software; configure the host connectivity between Linux/Windows hosts and storage devices for block/file.).
9. Technical principles, configuration process, and typical application scenarios of advanced technologies of Huawei OceanStor Dorado V6 products (Smart series and Hyper series).
10. Backup and Disaster Recovery Technologies.
11. Active-Passive DR Solution.
12. Active-Active DR Solution.
13. Data Migration Solution.
14. Storage system operation and O&M management, including O&M methods and common O&M tools (DeviceManager, CLI, SmartKit, DME, eService, and eSight, etc.).

AI

1. AI overview, including AI development history, technology fields, application areas, and future outlook.
2. Machine Learning, including basic concepts, overall process, and common algorithms.
3. Deep Learning, including Full-Connected Neural Networks, Activation Functions, Gradient Descent and Back Propagation Algorithms, Optimizer, Regularization, Convolutional Neural Networks, Recurrent Neural Networks, and Generative Adversarial Nets.
4. Huawei AI Full-Stack Full-Scenario, including ModelArts, MindSpore, Ascend and Atlas.
5. Ascend inference application development, including Ascend AI processor, Atlas AI computing solution, CANN inference application development workflow.
6. Deep Learning framework, including MindSpore, TensorFlow, Pytorch.
7. Computer Vision, including Digital Image Processing, Deep Learning Convolutional Neural Network, Image Classification, Image Segmentation, and Object Detection Tasks.
8. Voice Processing, including Speech Signal Preprocessing, Speech Recognition Task, Speech Synthesis Task.
9. Natural Language Processing, including tasks and methods of Natural Language Processing, applications of Recurrent Neural Networks, applications of Transformer, integrated application systems of Natural Language Processing.

Note:

The content mentioned in this article provides a general exam guide; the exam may contain additional related content that is not included here.