Huawei ICT Competition 2021-2022 Exam Outline

Cloud Track

1. Overview

1.1. Cloud Track of Huawei ICT Competition Preliminary Stage Overview

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

1.2. Cloud Track of Huawei ICT Competition National Stage Overview

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

1.3. Cloud 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 Minutes	60	True/False Question, 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.

1.4. Cloud Track of Huawei ICT Competition Global Stage Overview

Competition Stage	Exam Type	Duration	Number of Participants	Total Score
Global Stage	Lab	8 Hours	3(Team)	1000

2. Weighting

2.1. Cloud Track of Huawei ICT Competition Preliminary Stage Weighting

Competition Stage	Direction	Weight
Preliminary Stage	Cloud	50%
	Storage	20%
	AI	15%
	Big Data	15%

2.2. Cloud Track of Huawei ICT Competition National Stage Weighting

Competition Stage	Direction	Weight
National Stage	Cloud	45%
	Storage	20%
	AI	20%
	Big Data	15%

2.3. Cloud Track of Huawei ICT Competition Regional Stage Weighting

Competition Stage	Direction	Weight
Regional Stage	Cloud	45%
	Storage	20%
	AI	15%
	Big Data	20%

2.4. Cloud Track of Huawei ICT Competition Global Stage Weighting

Competition Stage	Direction	Weight
Global Stage	Cloud	45%
	Storage	20%
	AI	15%
	Big Data	20%

3. Scope

3.1. Overview of Exam Contents

The Cloud Track exam contents cover Cloud, Storage, AI and Big Data. Main exam contents include but not limited to the knowledge of Cloud Computing, HUAWEI CLOUD products and services, HUAWEI CLOUD solutions, basic principles of Storage, Storage product knowledge, Storage solutions, Machine Learning, Deep Learning, Computer Vision, and Natural Language Processing, basic knowledge of Big Data, basic principles and working mechanisms of Big Data components, etc.

3.2. Knowledge to Be Tested

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 1, 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.

Big Data

1. HDFS distributed file system and ZooKeeper.

2. Hive distributed data warehouse.

3. HBase technical principles.

4. MapReduce and YARN technical principles.

5. Spark memory-based distributed computing.

6. Flink stream computing processing and batch processing platform.

7. Kafka distributed message subscription system.

8. Elasticsearch distributed search engine.

9. Scenario-based solution for big data offline processing.

10. Scenario-based solution for real-time big data retrieval.

11. Scenario-based solution for real-time big data stream processing.

12. Data preprocessing.

13. Feature selection and dimension reduction.

14. Supervised Learning.

15. Unsupervised Learning.

16. Model evaluation and optimization.

17. Spark MLlib data mining.

Note:

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