

Concorso pubblico, per esami, a n. 2 posti di categoria D – posizione economica D1 – area tecnica, tecnico-scientifica ed elaborazione dati, con rapporto di lavoro subordinato a tempo indeterminato, con regime di impegno a tempo pieno, profilo Esperto informatico per le esigenze dello Staff Data Engineering dell'Università degli Studi di Bari Aldo Moro, indetto con D.D.G. n. 233 in data 20/02/2023

Domande elaborate dalla commissione esaminatrice per l'espletamento della prova orale.

Prova n. 1

- 1) Spiegare la differenza fra OLAP ed OLTP
- 2) Spiegare il concetto di visibilità di attributi e metodi in una classe Java.
- 3) Le principali differenze di funzioni tra Senato Accademico e Consiglio di Amministrazione previste dalla legge 240/2010?
- 4) Che cos'è una memoria USB?

Leggere e tradurre il seguente testo:

Oracle Cloud Infrastructure is physically hosted in regions and availability domains. A region is a localized geographic area, and an availability domain is one or more data centers located within a region. Oracle cloud regions are globally distributed data centers that provide secure, high-performance, local environments. These regions allow businesses to move, build, and run all workloads in the cloud from infrastructure to applications, while meeting regional data regulations.

Prova n. 2

- 1) Descrivere la fase di ETL in un sistema di datawarehouse.
- 2) Illustrare i concetti di incapsulamento e information hiding.
- 3) Il Consiglio di Amministrazione delle università
- 4) Come si inserisce una formula in Excel

Leggere e tradurre il seguente testo:

Availability domains are isolated from each other, fault tolerant, and very unlikely to fail simultaneously or be impacted by the failure of another availability domain. When you configure your cloud services, use multiple availability domains to ensure high availability and to protect against resource failure. Be aware that some resources must be created within the same availability domain, such as an instance and the storage volume attached to it.

Prova n. 3

- 1) Definire il concetto di alberi di decisione e spiegarne il loro utilizzo nell'ambito del Machine learning.
- 2) Illustrare il concetto di polimorfismo nella programmazione Object Oriented.

- 3) Il Nucleo di valutazione delle università: composizione e funzioni.
- 4) Come si inserisce una nuova pagina in Word?

Leggere e tradurre il seguente testo:

A fault domain is a grouping of hardware and infrastructure within an availability domain. Each availability domain contains three fault domains. Fault domains provide anti-affinity: they let you distribute your instances so that the instances are not on the same physical hardware within a single availability domain. A hardware failure or Compute hardware maintenance event that affects one fault domain does not affect instances in other fault domains.

Prova n. 4

- 1) Spiegare cosa si intende per Oracle Autonomous Database.
- 2) Spiegare la differenza tra metodi di istanza e metodi statici nella programmazione Object Oriented.
- 3) Il Direttore generale.
- 4) Come si formatta una cella in Excel?

Leggere e tradurre il seguente testo:

Compartments allow you to organize and control access to your cloud resources. A compartment is a collection of related resources (such as instances, virtual cloud networks, block volumes) that can be accessed only by certain groups that have been given permission by an administrator. A compartment should be thought of as a logical group and not a physical container. When you begin working with resources in the Console, the compartment acts as a filter for what you are viewing.

Prova n. 5

- 1) Descrivere il concetto di optimistic locking in un database.
- 2) Spiegare cosa si intende per linguaggio di markup e illustrare alcune differenze tra HTML e XML
- 3) Il Senato Accademico.
- 4) Che cos'è Microsoft Teams?

Leggere e tradurre il seguente testo:

When you sign up for Oracle Cloud Infrastructure, Oracle creates your tenancy, which is the root compartment that holds all your cloud resources. You then create additional compartments within the tenancy (root compartment) and corresponding policies to control access to the resources in each compartment. When you create a cloud resource, you must specify to which compartment you want the resource to belong.

Prova n. 6

- 1) Descrivere il concetto di pessimistic locking in un database.

- 2) Illustrare la principale differenza tra linguaggi Web server-side e client-side e descrivere un contesto di utilizzo delle due tipologie di linguaggi.
- 3) Fornire i principali titoli di studio che vengono rilasciati dalle università italiane.
- 4) Che cos'è una scheda di memoria?

Leggere e tradurre il seguente testo:

A policy is a document that specifies who can access which resources, and how. You can write policies to control access to all of the services within Oracle Cloud Infrastructure. Access is granted at the group and compartment level, which means you can write a policy that gives a group a specific type of access within a specific compartment, or to the tenancy itself. If you give a group access to the tenancy, the group automatically gets the same type of access to all the compartments inside the tenancy.

Prova n. 7

- 1) Illustrare la Flash recovery area in un database Oracle.
- 2) Descrivere i vantaggi e gli svantaggi delle applicazioni web.
- 3) Cosa si intende per CFU.
- 4) Che cos'è un grafico in Excel.

Leggere e tradurre il seguente testo:

A virtual cloud network is a virtual version of a traditional network—including subnets, route tables, and gateways—on which your instances run. A cloud network resides within a single region but includes all the region's availability domains. Each subnet you define in the cloud network can either be in a single availability domain or span all the availability domains in the region (recommended).

Prova n. 8

- 1) Spiegare cosa sono e a cosa servono gli undo data in Oracle.
- 2) Descrivere il ruolo di JavaScript in una pagina web e come può essere utilizzato per migliorare l'interattività del sito.
- 3) Gli organi di governo delle università
- 4) Come si avvia una chiamata audio/video in Microsoft Teams?

Leggere e tradurre il seguente testo:

The image is a template of a virtual hard drive that defines the operating system and other software for an instance, for example, Oracle Linux. When you launch an instance, you can define its characteristics by choosing its image. Oracle provides a set of platform images you can use. You can also save an image from an instance that you have already configured to use as a template to launch more instances with the same software and customizations.

Prova n. 9

- 1) Descrivere lo SHUTDOWN NORMAL in un database Oracle.

- 2) Descrivere i web service SOAP.
- 3) I Dipartimenti universitari.
- 4) Come si crea un nuovo team in Microsoft Teams?

Leggere e tradurre il seguente testo:

A block volume is a virtual disk that provides persistent block storage space for Oracle Cloud Infrastructure instances. Use a block volume just as you would a physical hard drive on your computer, for example, to store data and applications. You can detach a volume from one instance and attach it to another instance without loss of data.

Prova n. 10

- 1) Descrivere lo SHUTDOWN IMMEDIATE in un database Oracle.
- 2) Descrivere l'astrazione nella programmazione Object Oriented.
- 3) Cosa si intende per autonomia universitaria?
- 4) Come si formatta il testo in grassetto in Word?

Leggere e tradurre il seguente testo:

Oracle provides you with a cost estimator to help you figure out your monthly usage and costs for Oracle's Infrastructure and Platform Cloud services before you commit to an amount.

The cost estimate is automatically calculated based on your choice of the Oracle Cloud service category, its service configurations, and the usage of each resource in the configuration.

You can start using Oracle Cloud with no up-front cost. Oracle bills you for the services and resources you use. For planning, use the results from the Cost Estimator to estimate how much you are likely to be charged for usage each month.

Prova n. 11

- 1) Spiegare cosa si intende per pfile ed spfile in un database Oracle.
- 2) Illustrare le relazioni possibili fra classi nella programmazione Object Oriented.
- 3) Gli organi dei Dipartimenti.
- 4) Che cos'è un computer desktop?

Leggere e tradurre il seguente testo:

Oracle offers offline data transfer solutions that let you migrate data to Oracle Cloud Infrastructure. You can also export data currently residing in Oracle Cloud Infrastructure to your data center offline. Moving data over the public internet is not always feasible because of high network costs, unreliable network connectivity, long transfer times, and security concerns.

Prova n. 12

- 1) Spiegare cosa sono le Tablespaces ed i Datafiles in un database Oracle.
- 2) Cosa è Oracle Application Express (APEX)?

- 3) Il Rettore
- 4) Che cos'è una scheda grafica?

Leggere e tradurre il seguente testo:

An Oracle Database consists of a database and at least one instance.

An instance, or database instance, is the combination of memory and processes that are a part of a running installation and a database is a set of files that store data.

Sometimes, a database instance is referred to as an entire running database. However, it is important to understand the distinctions between the two.

You can start a database instance without having it accessing any database files. This is how you create a database, starting an instance first and creating the database from within the instance.

Prova n. 13

- 1) Illustrare l'utilizzo dei redo log in un database Oracle.
- 2) A cosa serve e come funziona l'istruzione Sql MERGE?
- 3) Il Direttore di Dipartimento.
- 4) Che cos'è una scheda di rete?

Leggere e tradurre il seguente testo:

The physical storage structures are simply files that store data. When you execute a CREATE DATABASE statement to create a new database, Oracle creates the following files:

Data files: data files contain real data, e.g., sales order and customer data. The data of logical database structures such as tables and indexes are physically stored in the data files.

Control files: every database has a control file that contains metadata. The metadata describes the physical structure of the database including the database name and the locations of data files.

Online redo log files: every database has an online redo log that consists of two or more online redo log files. An online redo log is made up of redo entries that record all changes made to the data.

Prova n. 14

- 1) Spiegare cosa si intende per architettura multitenant di Oracle.
- 2) Spiegare cosa sono, in Sql, le window functions (o analytic function) e qual è la loro differenza rispetto alle aggregate function.
- 3) In cosa consiste l'autonomia normativa delle università?
- 4) Come si crea un grafico in Excel?

Leggere e tradurre il seguente testo:

Oracle Database uses a logical storage structure for fine-grained control of disk space usage. The following are logical storage structures in an Oracle Database:

Data blocks: a data block corresponds to a number of bytes on the disk. Oracle stores data in data blocks. Data blocks are also referred to as logical blocks, Oracle blocks or pages.

Extents: An extent is a specific number of logically contiguous data blocks used to store the particular type of information.

Segments: a segment is a set of extents allocated for storing database objects, e.g., a table or an index.

Tablespaces: a database is divided into logical storage units called tablespaces. A tablespace is a logical container for a segment. Each tablespace consists of at least one data file.

Prova n. 15

- 1) Spiegare cosa è una Common Table Expression (CTE) in SQL.
- 2) Descrivere i web service REST.
- 3) Le funzioni istituzionali delle università.
- 4) Come si stampa un documento in Word?

Leggere e tradurre il seguente testo:

The following are the major background processes of an Oracle instance:

PMON is the process monitor that regulates all other processes. PMON cleans up abnormally connected database connections and automatically registers a database instance with the listener process. PMON is a process that must be alive in an Oracle database.

SMON is the system monitor process that performs system-level clean-up operation. It has two primary responsibilities including automatically instance recovery in the event of a failed instance, e.g., power failure and cleaning up of temporary files.

Prova n. 16

- 1) Illustrare cosa sono ed a cosa servono i control files in un database Oracle.
- 2) Fornire la definizione e le principali differenze fra web app e app native.
- 3) Le strutture di ricerca delle università.
- 4) Come si indirizza una cella in Excel?

Leggere e tradurre il seguente testo:

The following are the major background processes of an Oracle instance:

DBWn is the database writer. Oracle performs every operation in memory instead of the disk because processing in memory is faster and more efficient than on disk. The DBWn process reads data from disk and writes it back to the disk. An Oracle instance has many database writers DBW0, DBW1, DBW2, and so on.

CKPT is the checkpoint process. In Oracle, data that is on disk is called block and the data which is in memory is called buffer. When a block is written to the buffer and changed, the buffer becomes dirty, and it needs to be written down to the disk. The CKPT process updates the control and data file headers with checkpoint information and signals writing of dirty buffers to disk.

Prova n. 17

- 1) Illustrare la Cost Based Optimization in un database Oracle.
- 2) Descrivere le Progressive Web App (PWA) ed illustrarne punti di forza e debolezza.
- 3) Che cos'è lo Statuto di Ateneo?
- 4) Esiste in WORD una funzione per conteggiare le parole o i caratteri scritti?

Leggere e tradurre il seguente testo:

The following are the major background processes of an Oracle instance:

LGWR is the log writer process which is the key to the recoverability architecture. Every change occurs in the database is written out to a file called redo log for recovery purposes. And these changes are written and logged by LGWR process. The LGWR process first writes the changes to memory and then disk as redo logs which then can be used for recovery.

ARCn is the archiver process that copies the content of redo logs to archive redo log files. The archiver process can have multiple processes such as ARC0, ARC1, and ARC3, which allow the archiver to write to various destinations such as D: drive, E drive or other storage.

Il Segretario della Commissione
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