1. Why Map-reduce program is needed in Pig Programming?

What ever the script or program we are writing in Hadoop it needs to be convert into Mareduce program to process the data.

In pig architecture we have logical and physical layers, in physical layer it will choose best way of execution and then it converts to mapreduce program to process.

1. What are advantages of pig over MapReduce?

Less code

PIG is a data flow language, the key focus of Pig is manage the flow of data from input source to output store. As part of managing this data flow it moves data feeding it to process1, taking output and feeding it to process2. The core features are preventing execution of subsequent stages if previous stage fails, manages temporary storage of data and most importantly compresses and rearranges processing steps for faster processing. While this can be done for any kind of processing tasks Pig is written specifically for managing data flow of Map reduce type of jobs. Most if not all jobs in a Pig are map reduce jobs or data movement jobs. Pig allows for custom functions to be added which can be used for processing in Pig, some default ones are like ordering, grouping, distinct, count etc.  
    Map reduce on the other hand is a data processing paradigm, it is a framework for application developers to write code in so that its easily scaled to PB of tasks, this creates a separation between the developer that writes the application vs the developer that scales the application. Not all applications can be migrated to Map reduce but good few can be including complex ones like k-means to simple ones like counting uniques in a dataset.

1. What is pig engine and what is its importance?
2. What are the modes of Pig execution?

Local and map reduce

5. What is grunt shell in Pig?

Platform to write pig scripts

6. What are the features of Pig Latin language?

* Ease of programming. It is trivial to achieve parallel execution of simple, "embarrassingly parallel" data analysis tasks. Complex tasks comprised of multiple interrelated data transformations are explicitly encoded as data flow sequences, making them easy to write, understand, and maintain.
* Optimization opportunities. The way in which tasks are encoded permits the system to optimize their execution automatically, allowing the user to focus on semantics rather than efficiency.
* Extensibility. Users can create their own functions to do special-purpose processing.

7. Is Pig latin commands case sensitive?

Yes

8. What is a data flow language?

To access the external data, every language must follow many rules and regulations. The instructions are flowing through data by executing different control statements, but data doesn’t get moved. Dataflow language can get a stream of data which passes from one instruction to another instruction to be processed. Pig can easily process those conditions, jumps, loops and process the data in efficient manner.