

IMS DB Job Interview Questions And Answers



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IMS DB Interview Questions And Answers Guide.

Question - 1:

What is the maximum of key fields and search fields allowed in a segment?

Ans:

Key fields - Only 1

Search fields - No limitation

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Question - 2:

What is the maximum number of PCBs allowed in a PSB?

Ans:

Any number more than 1 (no limitation)

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Question - 3:

What are the two ways in which DL/I interface can be invoked?

Ans:

* By making a call to IBM supplied program CBLTDLI / ASMTDLI / PLITDLI (most commonly used method) by - Passing a PCB, or Passing an AIB

* By invoking the EXEC-DLI CICS interface by Passing a PCB, or Passing an AIB

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Question - 4:

How many root segments do we have per database record?

Ans:

Only 1

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Question - 5:

What is the maximum number of fields allowed per segment and what is the maximum number of fields per database?

Ans:

Max. number of fields per segment = 255

Max. number of fields per database = 1000

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Question - 6:

What is the maximum number of segment types allowed for a single database?

Ans:

255 Segment types

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Question - 7:

What is the maximum number of levels allowed in IMS DB?

Ans:



15 Levels

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Question - 8:

What are the retrieval sequences in IMS DB?

Ans:

- * Top to Bottom
- * Front to Back
- * Left to Right

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Question - 9:

Can we use PROCOPT on PCB and Segment field (SENSEG)?

Ans:

Yes, we can use the PROCOPT on PCB macro (at database level) or sensitive segment macro (at segment level).

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Question - 10:

What is meant by BMP mode?

Ans:

It is of two types:

Transaction oriented

- * Can read and write to online message queues.
- * Can process online files and databases.

Batch oriented

- * Can only read message queues.
- * Access online databases in Batch mode

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Question - 11:

What is meant by MPP mode?

Ans:

- * True Online processing.
- * Transaction are entered at terminal and stored in message queue.
- * Databases accessed must be offline.

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Question - 12:

What is meant by Batch DL/I mode?

Ans:

- * True Batch processing.
- * No data communication services are used.
- * Databases accessed must be offline.

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Question - 13:

What are the processing modes available in IMS DB?

Ans:

- * Batch DL/I
- * MPP Mode - (Message Processing Program)
- * BMP Mode - (Batch Message Processing)

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Question - 14:

What is the advantage of creating the ACBs well ahead of time?

Ans:

- * Application program's scheduling consumes less time
- * Less storage

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Question - 15:

What is the disadvantage of dynamic generation of ACB?

**Ans:**

Everytime the program is run., the ACB needs to be built.

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Question - 16:

What is the advantage of dynamic generation of ACB?

Ans:

It can be made sure that the ACB generated incorporates all the latest changes to the PSB and DBD.

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Question - 17:

Explain ACBGEN process?

Ans:

ACB is a consolidation of PSB and DBD information.

* For online programs

ACBs must be prebuilt using the ACBGEN utility i.e., ACBGEN must be run which will merge DBD and PSB and generate ACB.

* For batch programs

ACBs can be generated either at execution time (dynamically using IMS.DBDLIB and IMS.PSBLIB as input (PARM=DL/I)) or ahead of time (prebuilt ACB from IMS.ACBLIB can be used (PARM=DBB)).

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Question - 18:

Explain PSBGEN process?

Ans:

PSBGEN control statements consists of Assembler Language macro statements. The macros are supplied by IBM in a library named IMSVS.MACLIB. That invokes a cataloged procedure usually called PSBGEN and stored in PSBLIB. Each PSB consists of one or more control blocks called Program Control Block (PCB). Each PCB within a PSB defines one logical structure. All the PCBs within a PSB are collectively known as an Application Data Structure.

IMS allows a PSB to define more than one logical data structure because a program is allowed to access to more than one database. A program is also allowed to concurrently access different parts of the same database. IMS allows the DBA to define any number of logical data structure in a single PSB.

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Question - 19:

What information does a PSB contain?

Ans:

PSB information includes:

* PCB - defines the database to be accessed by the application program.

* SENSEG - defines the segment types to which the application program will be sensitive.

* SENFLD - defines the fields in the segment type to which the application program will be sensitive.

* PROCOPT - defines the types of access to the database or segment.

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Question - 20:

What are the two types of fields available in IMS DB?

Ans:

Key Fields - (PROCOPT=K)

* Used to sequence the database and can't be changed

* It's the field within a segment, used to identify the occurrence of the segment

* used to maintain the IMS segments in ascending sequence.

Search Fields - (PROCOPT=G)

* Used to search for a segment, without the segment being sequenced on that field

* A segment need not have a key or search field.

Both types of fields can be used to search the database.

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Question - 21:

What is a segment in IMS?

Ans:

Segment is the smallest unit of information that IMS transfers to and from database. Segment may contain one or more fields.

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Question - 22:

Which languages does IMS support / application program languages?



Ans:

COBOL, PL/1, C, VS Pascal, REXX, Ada and Assembler.

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Question - 23:

Explain DBDGEN process?

Ans:

DBDGEN control statements consists of Assembler Language macro statements. The macros are supplied by IBM in a library named IMSVS.MACLIB. DBDGEN control statements are normally coded by the DBA and submitted to the system with JCL. That invokes a cataloged procedure usually called DBDGEN. The DBDGEN procedure causes the DBDGEN control statements to be processed by the assembler producing the object module. The object module is then passed to the linkage editor which, in turn, stores a load module in another IMS Library called as IMS.DBDLIB or IMSVS.DBDLIB.

The DBD process is normally performed only once for a database. All applications use the DBD in accessing the information on the database. A new DBD is normally created only if the physical nature of the database changes.

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Question - 24:

What information does a DBD contain?

Ans:

DBD information includes:

- * Database name, Access method
- * Dataset name
- * Segment name, length, parent
- * Key field name, length, location, type
- * Search field name, length, location, type

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Question - 25:

What is PCB?

Ans:

Program Communication Block defines which database the program will access and the type of access allowed. It defines the programmer's view of the database.

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Question - 26:

What is ACB?

Ans:

Application Control Block is an internal control block consisting of combined information from the DBD and PSB.

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Question - 27:

What is PSB?

Ans:

Program Specification Block defines the programs view of the database and application programs access authority to database. It defines the logical data structure. A PSB is made up of one or more PCBs (Program communication blocks).

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Question - 28:

What is DBD?

Ans:

DBD (Database Definition) is used to define the physical structure of the database.

- * One DBD for each database
- * Created by a series of control statements - by a process called DBDGEN
- * Used by DL/I whenever database is used

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Question - 29:

What are the main control blocks available in IMS DB?

Ans:

There are three control blocks (also known as DL/I control blocks)

- * Database Description (DBD)
- * Program Specification Block (PSB)
- * Application Control Block (ACB)

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Question - 30:



Explain IMS Software Environment?

Ans:

IMS Software Environment consists of the below five main components:

- * IMS DB
- * DL/I
- * DL/I Control Blocks
- * IMS DC
- * Application Programs

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Question - 31:

What is DL/I?

Ans:

DL/I is a command-level language to manipulate IMS databases. DL/I forms a bridge between application program and IMS database. It is used in batch and online programs to access data stored in IMS databases.

Every access to an IMS database is through DL/I. The DL/I interface must be called to update or read a IMS database. DL/I allows both sequential and random processing of a database.

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Question - 32:

What are the advantages and disadvantages of a Hierarchical Database?

Ans:

Advantages:

- * Speed of access is faster because of the predefined data paths.

Disadvantages:

- * Complex implementation
- * Predefined tree structure reduces flexibility.
- * Difficult to manage

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Question - 33:

What do you mean by Hierarchical Database?

Ans:

- * Follows inverted tree structure
- * Data relationship is predefined by it's structure
- * Program accesses the data through predefined paths.

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Question - 34:

What is IMS (DB/DC)?

Ans:

IMS (Information Management System) is IBM's hierarchical database management system. It has mainly two components: IMS DB and IMS DC (also know as IMS TM)

IMS DB - IMS/Database Manager as the name implies manages the IMS databases. It is used for physical storage creation and management and data retrieval.

IMS DC / IMS TM - IMS/Data Communications or IMS/Transaction Manager handles online transaction processing system.

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Question - 35:

What are the objectives of DBMS in IMS?

Ans:

- * Increases data independence
- * Reduces data redundancy
- * Provides data communication facilities
- * Reduces data maintenance
- * Provides data integrity and security
- * Provides indexing capabilities

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Question - 36:

What is DBMS in IMS?

Ans:

A Database Management System is used to define and maintain the structure of the database.

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Question - 37:

What is an IMS Database?

Ans:

A Database is a collection of related data items organized in a way that can be processed by application programs.

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