CICS Job Interview Questions And Answers

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Question - 1:
What is the difference between START and XCTL?

Ans:
START is used to start a new task. It is an interval control command. XCTL is used to pass control to a program within the same task. It is a program control command.

Question - 2:
What are the three BMS options?

Ans:
Minimum, Standard, FULL

Question - 3:
What is the primary objective of CICS?

Ans:
To provide the control and services of the DB/DC system

Question - 4:
Can you access ESDS files from CICS?

Ans:
Yes

Question - 5:
Can you access QSAM (seq) files from CICS?

Ans:
No

Question - 6:
How would you resolve an ASRA abend?

Ans:
In COBOL II start with CEBR, and get the offset/instruction.

Question - 7:
What is an AICA abend?

Ans:
Runaway Task.

Question - 8:
What is the usage of language in the PPT entry?

Ans:
Language interface and call parameters

Question - 9:
How do you handle errors in CICS programs?

Ans:
Check EIBRESP after the call or use the HANDLE condition.

Question - 10:
Can you use DYNAMIC calls in CICS?

Ans:
Yes, the called routine must be defined in PPT and the calling program must use CALL identifier...

Question - 11:
Name some important fields in the EIB block?

Ans:
EIBRESP, EIBCALLEN, EIBRCDE, EIBTASK, EIBDATE, EIBTIME

Question - 12:
What is EXEC CICS RETRIEVE?

Ans:
Used by STARTed tasks to get the parameters passed to them.

Question - 13:
What is an AEY9 abend?

Ans:
DB2/IDMS not up.

Question - 14:
What is an ASRA abend?

Ans:
Any data exception problem SOC7, SOC4 etc.

Question - 15:
What is ENQ, DEQ?

Ans:
Task control commands to make resources serially reusable.

Question - 16:
What is the use of DCT?

Ans:
Destination Control Table used define TDQs

Question - 17:
When you compile a CICS program, the (pre) compiler puts an extra chunk of code. Where does it get included and that is it called? What is its length?

Ans:
DFHEIBLK, DFHCOMMAREA.

Question - 18:
What is MDT? What are FSET, FRSET?

Ans:
MDT: Bit in the attribute byte indicating modification of field on screen. Happens on an input operation.
FSET: Sets MDT on to ensure field is transmitted. Happens on an output operation
FRSET: Reset MDT. Until this happens, field continues to be sent.

Question - 19:
What is the attribute byte?

Ans:
Defines the display/transmission of field. Most cases is an output field from the program.

Question - 20:
What is the difference between physical map and symbolic map?

Ans:
The physical map is the load module and the symbolic map is the data structure.

Question - 21:
Can a program change protected field?

Ans:
NO

Question - 22:
What is the difference between a Symbolic map and Physical map?

Ans:
SYMBOLIC MAP IS USED BY USER AND PHYSICAL MAP IS USED BY SYSTEM

Question - 23:
Why is it important not to execute a STOP RUN in CICS?

Ans:
Stop run will come out from the CICS region.

Question - 24:
How to build up LU 6.2 communication?

Ans:
Pseudo-conversational transactions are almost always the preferred method. In these mode CICS releases resources between responses to user input, i.e. the task is ended awaiting the user response.

Question - 25:
DB2 What is the difference between a package and a plan. How does one bind 2 versions of a CICS transaction with the same module name in two different CICS regions that share the same DB2 subsystem?

Ans:
Package and plan are usually used synonymously, as in this site. Both contain optimized code for SQL statements - a package for a single program, module or subroutine contained in the database request module (DBRM) library. A plan may contain multiple packages and pointers to package that could be referenced in two different plans.

Question - 26:
What is the ABEND command and when would you use it?

Ans:
The ABEND command forces a task to end abnormally. It creates a transaction dump and invokes the dynamic transaction backout.

Question - 27:
What is the CICS LOAD command?
The LOAD command retrieves an object program from disk and loads it into main storage - it's primarily used for a constant table that will be available system-wide.

**Question - 28:** What is task control and what are the CICS commands associated with it?

**Ans:**
Task control refers to the CICS functions that manage the execution of tasks. Task control commands are SUSPEND, ENQ, and DEQ.

**Question - 29:** What is interval control and what are some of the CICS commands associated with it?

**Ans:**
CICS interval control provides a variety of time-related features - common commands are ASKTIME, PORMATTIME, START, RETRIEVE, and CANCEL.

**Question - 30:** How do you delete Item 3 in a five-item TSQ?

**Ans:**
You can't at least not directly. Options, none of them good, include:
I. adding a logical-delete flag to the contents of each item;
II. moving item 4 to 3 and 5 to 4 and initializing item 5, all thru rewrites; this is a variant on 1;
III. Creating a new 'copy' TSQ that excludes the unwanted item, killing the old TSQ (deleteq ts), writing the new TSQ with the original name from the new TSQ, and then deleting the 'copy' TSQ. This way, you will get an accurate report from NUMITEMS.

**Question - 31:** What is the meaning of the ENQ and DEQ commands?

**Ans:**
Neither command is exclusively a transient data command. The ENQ command reserves any user defined resource for the specific task. For enqueued transient data no other task will be able to write records to it for as long as it is enqueued. DEQ removes the lock.

**Question - 32:** What is a logical message in CICS?

**Ans:**
A logical message is a single unit of output created by SEND TEXT or SEND MAP commands
BMS collects the separate output from each command and treats them as one entity.
This technique may be used to build CICS reports.

**Question - 33:** What is CEBR?

**Ans:**
CEBR lets you browse the contents of a specific temporary storage queue.

**Question - 34:** What is CEDF?

**Ans:**
CEDF is the execute diagnostic facility that can be used for debugging CICS programs.

**Question - 35:** What is CECI?

**Ans:**
CECI is the command level interpreter transid that interactively executes CICS commands. It is a rudimentary CICS command debugger which does not require coding an entire program.

**Question - 36:** What is the significance of RDO?
Ans:
RDO is Resource Definition Online. Since release 1.6 RDO allows resources (terminals, programs, transactions and files) to be defined interactively while CICS is running.

Question - 37:
What is a cursor in CICS SQL processing?

Ans:
A cursor is a pointer that identifies one row in a SQL results table as the current row.

Question - 38:
What is the MASSINSERT option?

Ans:
MASSINSERT is a WRITE option that modifies normal VSAM split processing, leaving free space after the inserted record, so subsequent records can be inserted without splits. It is ended by an UNLOCK command.

Question - 39:
What is the meaning of the SYNCPOINT command?

Ans:
SYNCPOINT without the ROLLBACK option makes all updates to protected resources permanent, with the ROLLBACK option it reverses all updates.

Question - 40:
What is Journal Recovery and Dynamic Transaction Backout?

Ans:
Journal Recovery is recovery of changes made to a file during online processing. If a file has I/O problems it is restored from a backup taken before online processing began and the journalled changes are applied. Dynamic transaction backout is the removal of partial changes made by a failed transaction.

Question - 41:
What are transient data sets defined to CICS?

Ans:
They are defined in the destination control table (DCT).

Question - 42:
What are the two types of transient data queues?

Ans:
They are intrapartition, which can only be accessed from within CICS and extrapartition, which are typically used to collect data online, but process it in a batch environment.

Question - 43:
What is transient data?

Ans:
Transient data provides CICS program with a simple method for sequential processing, often used to produce output for 3270 printers.

Question - 44:
What is temporary storage?

Ans:
Temporary storage is either main or auxiliary storage that allows the program to save data between task invocations.

Question - 45:
What is an ASRA?

Ans:
An ASRA is the CICS interrupt code, the equivalent of an MVS abend code.
Question - 46:
How do you control cursor positioning?

Ans:
It's controlled by the cursor option of the SEND MAP command using a direct (0 through 1919) or symbolic value.

Question - 47:
What is the meaning and use of the EIBAID field?

Ans:
EIBAID is a key field in the execute interface block; it indicates which attention key the user presses to initiate the task.

Question - 48:
How do you access storage outside your CICS program?

Ans:
In COBOL storage was accessed via BLL cell using the SET option of ADDRESS commands. In COBOL II the special register ADDRESS OF lets you reference the address of any Linkage Section field.

Question - 49:
What is the function of the LOAD command?

Ans:
To fetch a program, table or map to the main storage.

Question - 50:
What is the CICS Command that is used for reading a record from the TDQ?

Ans:
READQ

Question - 51:
Which of the following are recoverable CICS resources?

Ans:
Data files and data bases, Intrapartition TDQs, Auxiliary TSQs

Question - 52:
Which is the command used for terminating a browse operation?

Ans:
ENDBR

Question - 53:
What is the primary function of the Processing Program Table (PPT)?

Ans:
To register all programs and maps

Question - 54:
Sync points cannot be requested by the application programs (True or False)?

Ans:
False

Question - 55:
Which is the command that is used to dump the main storage areas related to a task?

Ans:
DUMP
Question - 56:
What is the CICS command that is used to copy a screen image of a terminal into another terminal?

Ans:
ISSUE COPY

Question - 57:
The EIB field which gives the last CICS command executed is?

Ans:
EIBRCODE

Question - 58:
Which is the CICS control program that provides communication services between user written application programs and terminals?

Ans:
Terminal Control Program

Question - 59:
CICS Command level is?

Ans:
Low level version of CICS macro level

Question - 60:
TSQs can be written in the Main storage or Auxiliary storage (True or False)?

Ans:
True

Question - 61:
What is the difference between call and link?

Ans:
In case of call, whenever you do changes to the called program you need to compile the calling program also. In case of link, it is not needed.

Question - 62:
What are the differences between DFHCOMMAREA and TSQ?

Ans:
Both are used to save data among tasks. But
1. COMMAREA is private to that transaction only like every transaction has its own COMMAREA created by CICS as soon as the transaction is initiated. However TSQ, if queue id is known can be accessed by other transactions also
2. COMMAREA length is s9(4) comp i.e. 65k. but TSQ can have any length
3. COMMAREA is available only during the transaction is running. TSQ if created with auxiliary option resides in aux memory and available even if main memory crashes
4. normally COMMAREA is used to transfer data from one task to another while TSQ is used widely within the task as a scratch pad.

Question - 63:
What is Communication Area?

Ans:
Communication Area is used to pass data between the program or between the task.

Question - 64:
A CICS program ABENDS with an ASRA ABEND code, What is its meaning?

Ans:
A). Alink was issued to a program whose name does not exist in the PPT (Program Processing Table)
B) A program attempted to use a map that is not defined in the PCT (Program Control Table).
C) A security violation has occurred. The operator is not defined with the proper authority in the SNT (Sign on Table) to use a particular file
D) A program interrupt (0C0 or 0C2 or ...) has occurred in a CICS program
E) An I/O error has occurred when attempting to use a VSAM file from a CICS program

ANS:
D) A program interrupt (0C0 or 0C2 or ...) has occurred in a CICS program

Question - 65:
How can you accomplish breakpoint in intertest?

Ans:
U-for unconditional breakpoint, C-for conditional breakpoint, and A-for automatic breakpoint

Question - 66:
How many ways are there for initiating a transaction? What are they?

Ans:
There are six ways in initiating a transaction they are as follows.
1. embedding four character transid on the top left most corner of the screen.
2. making use of EXEC CICS START TRANSID()
3. making use of EXEC CICS RETURN TRANSID()
4. By defining the transid in DCT (destination control table) to enable ATI (AUTOMATIC TASK INITIATION)
5. Making use of PLT (program list table)
6. By associating four character transid in PCT (program control table)

Question - 67:
Which type of TDQ is read destructive?

Ans:
Intrapartition TDQ is read destructive. extra partition TDQ is not read destructive.

Question - 68:
The error code AEIV?

Ans:
This is the error code for length, if length of the source data is more than the receiving field, this error will occur.

Question - 69:
What is the size of commarea?

Ans:
The default commarea size is 65K.

Question - 70:
What is ASRAABEND in CICS?

Ans:
It occurs when program interruption takes place, e.g. when alphanumeric string moved to numeric data item or when arithmetic calculations performed on nonnumeric data item or when an attempt made to read an occurrence of a table beyond the defined occurrences.

Question - 71:
What is a two phase commit in CICS?

Ans:
This occurs when a programmer Issues a EXEC CICS Syncpoint command. this is called two phase because CICS will first commit changes to the resources under its control like VSAM files, and the DB2 changes are committed. Usually CICS signal DB2 to complete the next phase and release all the locks.

Question - 72:
Difference between TSQ and TDQ?

Ans:
TDQ is read destructive, TSQ is not. TSQ can be created dynamically, TDQ cannot be created dynamically. TSQ is temporary in nature (i.e. it will be deleted when the program finishes execution, unless it is made permanent by making a entry in the Temporary Storage Table), TDQ is not.

Question - 73:
In SYMBOLIC Cursor Positioning after moving -1 to the length field also the cursor is not positioned in that particular field. Give reasons?
Ans:
You have to explicitly specify the word CURSOR between your EXEC CICS and END-EXEC in the program.

Question - 74:
What does EIB mean?

Ans:
The EIB is the EXECUTIVE INTERFACE BLOCK. It is not the EXECUTE INTERFACE BLOCK. All TP monitors or transaction processor are know as EXECUTIVEs as they carry out process on behalf of a program module. CICS and DB2 are executives.

Question - 75:
How many exceptional condition can be given in a HANDLE CONDITION?

Ans:
Max. of 12 exceptional conditions can be given in a HANDLE CONDITION.

Question - 76:
How do you access the records randomly in TSQ?

Ans:
By specifying the ITEM option

Question - 77:
What command do you issue to delete a record in a transient data queue?

Ans:
READQ TD, the read is destructive.

Question - 78:
What are different ways of initiating transaction in CICS?

Ans:
We can initiate CICS transaction
a) by giving transaction id
b) by giving CICS start command
c) automatic task initiation

Question - 79:
What is the difference between LINK and XCTL?

Ans:
The XCTL command passes control to another program, but the resources requested by the first program may still be allocated. A task does not end until a RETURN statement is executed. While in LINK command, program control resumes its instruction following the LINK parameter. The disadvantage of LINK is that it requires that both the calling program and the called program remain in main memory even though both are no longer needed.

Question - 80:
What is the difference between CICS Program Control Table (PCT) and CICS Processing Program Table (PPT)?

Ans:
PCT contains a list of valid transaction ID. Each transaction ID is paired with the name of the program, CICS will load and execute when the transaction is invoked. On the other hand, PPT indicates each program's location which pertains to a storage address if the program has already been loaded or a disk location if the program hasn't been loaded. PPT will also be used to determine whether it will load a new copy of the program when the transaction is invoked.

Question - 81:
What are the 3 common ways to create maps?

Ans:
The first way is to code a physical map and then code a matching symbolic map in your COBOL program. The second way to create a physical map along with a matching symbolic map is to code only the physical map using the and SYSPARM option, CICS will automatically create a member in a COPY library. And the third way is to use a map generator such as SDF (Screen Definition Facility)
What is Quasi-reentrancy?

**Ans:**
There are times when many users are concurrently using the same program, this is what we call MultiThreading. For example, 50 users are using program A. CICS will provide 50 Working storage for that program but one Procedure Division. And this technique is known as quasi-reentrancy.

**Question - 83:**
What is the difference between a physical BMS mapset and a logical BMS mapset?

**Ans:**
The physical mapset is a load module used to map the data to the screen at execution time. The symbolic map is the actual copybook member used in the program to reference the input and output fields on the screen.

**Question - 84:**
What CICS facilities can you use to save data between the transactions?

**Ans:**
COMMONAREA, TSQ and TDQ.

**Question - 85:**
How would you release control of the record in a READ for UPDATE?

**Ans:**
By issuing a REWRITE, DELETE, or UNLOCK command or by ending the task.

**Question - 86:**
What is the difference between a RETURN with TRANSID and XCTL? For example program A is issuing RETURN with TRANSID to program B. Program A is issuing XCTL to program B?

**Ans:**
In RETURN with TRANSID the control goes to the CICS region and the user have to transfer the control to program B by pressing any of the AID KEYS. In XCTL the control is directly transfer to program B.

**Question - 87:**
What will be the length of the eibcalen, if the transaction is used to CICS first time?

**Ans:**
The length will be 0 (zero).

**Question - 88:**
What is DFHEIBLK?

**Ans:**
DFHEIBLK is Execute Interface Block. It is placed in the linkage section automatically by CICS translator program. It must be the first entry in linkage section. CICS places values prior to giving control to the program and we can find almost any information about our transaction.

**Question - 89:**
What is the difference between the XCTL and LINK commands?

**Ans:**
The LINK command anticipates return of control to the calling program, the XCTL command does not. RETURN to the calling program will be the result of the CICS RETURN command, specifying TRANSID (name of the calling program).

**Question - 90:**
What CICS command would you use to read a VSAM KSDS sequentially in ascending order?

**Ans:**
First issue a STARTBR (start browse), which will position the browse at the desired record. Retrieve records by using subsequent READNEXT commands. Indicate the end of sequential processing with the ENDBR command. If the generic key is specified in the STARTBR command position in the file will be before the first record satisfying the generic key. For reading in descending order use the READPREV instead of READNEXT.

**Question - 91:**
What is the difference between pseudo-conversational and conversational?

Ans:
pseudo-conversational will start a new task for each input. By coding a CICS RETURN command specifying TRANSID9ITSELF). Conversational will have an active task during the duration of the data entry.

Question - 92:
What is the COMAERA (communication area)?

Ans:
An area used to transfer data between different programs or between subsequent executions of the same program. Needs to be defined in the LINKAGE Section.

Question - 93:
What is the common work area (CWA)?

Ans:
The common work area is a storage area that can be accessed by any task in a CICS system.

Question - 94:
What is a transid and explain the system transid CEMT?

Ans:
Transid is a transaction identifier, a four character code used to invoke a CICS task. CEMT is the master terminal transaction that lets you display and change the status of resources - it is the primary CICS service transaction.

Question - 95:
What is an MDT (Modified Data Tag)? Its meaning and use?

Ans:
The modified data tag is the last bit in the attribute byte for each screen field. It indicates whether the corresponding field has been changed.

Question - 96:
What is the EIB (execute interface block)?

Ans:
The execute interface block lets the program communicate with the execute interface program, which processes CICS commands. It contains terminal id, time of day and response codes.

Question - 97:
What is the common systems area (CSA)?

Ans:
The common systems area is the major CICS control block that contains system information, including pointers to most other CICS control blocks. The CSA points to all members of STATIC storage.

Question - 98:
What is meant by program reentrance?

Ans:
A program is considered reentrant if more than one task can execute the code without interfering with the other tasks' execution.

Question - 99:
What is meant by a CICS task?

Ans:
A CICS task exist from the time the operator presses the enter key until the application program returns control to CICS.

Question - 100:
Name some common CICS service programs and explain their usage?

Ans:
Terminal Control, File Control, Task Control, Storage Control, etc. Each CICS service program controls the usage and status for its resource (file, terminal, etc)
Question - 101:
Name some of the common tables in CICS and their usage?

Ans:
PCT Program Control Table - defines each transaction containing a list of valid transaction identifiers (transid) where each transaction is paired with its matching program;
PPT Program Processing Table - contains a list of valid program names and maps and whether a current version is in the CICS region or needs to be brought in as a new copy;
FCT File Control Table - contains a list of files known to CICS, the dataset name and status (closed/open, enable/disabled;)
TCT Terminal Control Table - a list of the terminals known to CICS.

Question - 102:
What is the difference between link Xctl?

Ans:
Link is temporary transfer of control. Xctl is permanent transfer of control

Question - 103:
What is multitasking and multithreading?

Ans:
multitasking is the feature supported by the operating system to execute more than one task simultaneously. Multithreading is the system environment where the tasks are sharing the same programs load module under the multitasking environment. It is a subset of multitasking since it concerns task which use the same program.

Question - 104:
What are different system tables used in CICS?

Ans:
PCT, FCT, TCT, DCT, PPT

Question - 105:
Explain the term MRO (Multi Region Operation)?

Ans:
MRO is the mechanism by which different CICS address spaces within the same CPU can communicate and share resources.

Question - 106:
Explain the term Function Request Shipping?

Ans:
Function request shipping is one of the CICS modes of intercommunication which allows an application program in a local CICS to access resources owned by a remote CICS.

Question - 107:
In an on-line environment, how can you prevent more than one user from accessing the same Transient Data Queue at the same time?

Ans:
By issuing an EXEC CICS ENQ against the resource. When processing is completed, a DEQ should be executed.

Question - 108:
When an application is invoked via the EXEC CICS START command with the from option, how does the application gain access to the common area?

Ans:
An EXEC CICS RETRIEVE command will access the common area.

Question - 109:
The DFHCOMMARA is used to pass information from one application to another. What are some other ways that this function can be accomplished?

Ans:
You can also pass information in the following ways.
Question - 110:
How do you define Task Work Area?

Ans:
By defining it on the PCT (the Program Control Table)

Question - 111:
What information do you get when an EXEC CICS STARTCODE is issued?

Ans:
You will be able to determine if the application was started by
(1) a transient data trigger level (QD),
(2) a START command (S,SD),
(3) user (U) or terminal input (TD), or
(4) Distributed Program Link (D, DS).

Question - 112:
Which CICS command must be issued by the application program in order to gain access to the Common Work Area (CWA)?

Ans:
EXEC CICS ADDRESS with CWA option.

Question - 113:
In which CICS table would you specify the length of the TASK WORK AREA (TWA)?

Ans:
In the Program Control Table (PCT).

Question - 114:
What is a deadlock?

Ans:
Deadlock (also known as a "deadly embrace") occurs when a task is waiting for a resource held by another task which, in turn, is waiting for a resource held by the first task.

Question - 115:
What is ENQ in CICS?

Ans:
If any one want to restrict Trans-ID to single user, enter trans-id with ENQ. It won't allow any one else to use the same trans-id.

Question - 116:
Explain the term Transaction routing?

Ans:
Transaction routing is a CICS mode of intercommunication which allows a terminal connected to local CICS to execute another transaction owned by a remote CICS.

Question - 117:
How can you prevent more than one user from accessing the same Transient Data Queue?

Ans:
By issuing an EXEC CICS ENQ against the resource. When processing is completed, a DEQ should be executed.

Question - 118:
How can the fact that EIBCALEN is equal to zeros be of use to an application programmer?
Ans:
When working in a pseudo-conversational mode, EIBCALEN can be checked if it is equal to zero. A programmer can use this condition as a way of determining first time usage of the program.

Question - 119:
Which CICS system program is responsible for handling automatic task initialization?

Ans:
The Transient Data Program (TDP).

Question - 120:
What is the function of DFHMDF BMS macro?

Ans:
The DFHMDF macro defines fields, literal, and characteristics of a field.

Question - 121:
Explain the basic difference between Intra partition TDQ and Extra partition TDQ?

Ans:
**INTRA PARTITION TD QUEUEs.** It is a group of sequential records which are produced by the same and / or different transaction within a CICS region. These Qs are stored in only one physical file (VSAM) in a CICS region, which is prepared by the system programmer. Once a record is read from a queue, the record will be logically removed from the queue; that is the record cannot be read again. **EXTRA PARTITION TD QUEUEs** It is a group of sequential record which interface between the transaction of the CICS region and the systems outside of CICS region. Each of these TDQs is a separate physical file, and it may be on the disk, tap, printer or plotter.

Question - 122:
What is the differences between getting the system time with EIBTIME and ASKTIME command?

Ans:
The ASKTIME command is used to request the current date and time. Whereas, the EIBTIME field have the value at the task initiation time.

Question - 123:
Explain floating maps with illustration?

Ans:
Maps which can position themselves relative to the previous maps on the screen or page are known as the floating maps. For this you have to use special positional operands to LINE and COLUMN parameters of the BMS macro definition. They are SAME, NEXT. Actually this floating map concept is there only in Full BMS where as it is not available in Min. or Standard BMS macros. RECEIVE MAP is not recommended in the case of floating maps. Hence these maps are normally used to send information such as selected records from a database to screen but not for data entry. A mapset can contain more than one map in it, you may use all these maps to build a screen. In that case there are two ways to send these maps on to the screen. i) Use separate SEND MAP commands one for each map involved. or ii) Use ACCUM operand along with SEND MAP command and while sending really on to the screen use SEND PAGE to display them at one shot. The second one is called cumulative mapping scheme where you also can use floating maps.

Let's take a situation where you have to build a screen like this

HEADER MAP (no. of A gr. employs)
DETAIL MAP ( employee list)
TRAILER MAP

Question - 124:
What does it mean when EIBCALEN is equal to zeros?

Ans:
When the length of the communication area (EIBCALEN) is equal to zeros, it means that no data was passed to the application.

Question - 125:
What is the difference between the INTO and the SET option in the EXEC CICS RECEIVE MAP command?

Ans:
The INTO option moves the information in the TIOA into the reserved specified area, while the SET option simple returns the address of the TIOA to the specified BLL cell or "address-of" a linkage-section.

Question - 126:
What is the difference between using the READ command with INTO option and SET option?
When we use INTO option with the READ command the data content of the record will be moved into the specified field defined in the Working Storage Section of the program. When we use SET option with the READ command, CICS sets the address pointer to the address of the record in the file input / output area within CICS, so that the application program can directly refer to the record without moving the record content into the Working Storage area defined in the program. Therefore, the SET option provides a better performance than the INTO option.

**Question - 127:**
What is MDT?

**Ans:**
MDT (Modified Data Tag) is one bit of the attribute character. If it is off (0), it indicates that this field has not been modified by the terminal operator. If it is on (1), it indicates that field has been modified by the operator. Only when MDT is on, will the data of the field be sent by the terminal hardware to the host computer (i.e. to the application program in end). An effective use of MDT drastically reduces the amount of data traffic in the communication line, thereby improving performance significantly. Therefore, BMS maps and CICS application program should be developed based on careful considerations for MDT.

**Question - 128:**
Name three ways the Modified Data Tag can be set on?

**Ans:**
The Modified Data Tag can be set on:
1. When the user enters data into the field.
2. When the application program moves DFHBMFSE to the attribute character.
3. By defining it in the BMS macro definition.

**Question - 129:**
Can we define an alternate index on VSAM/RRDS?

**Ans:**
No

**Question - 130:**
How to establish dynamic cursor position on a map? How to get the cursor position when we receive a map?

**Ans:**
We dynamically position a cursor through an application program using a symbolic name of the symbolic map by placing -1 into the field length (i.e., fieldname + L) of the field where you wish to place the cursor. The SEND MAP command to be issued must have the CURSOR option (without value). Also, the mapset must be coded with MODE = INOUT in the DFHMSD macro. We get the cursor position when we receive a map by checking EIBCPOSN, which is a halfword (S9(4) COMP) binary field in EIB, and contains offset position (relatively to zero) of the cursor on the screen.

**Question - 131:**
What are the three ways available for a program to position the cursor on the screen?

**Ans:**
I. Static positioning. Code the insert cursor (IC) in the DFHMDF BMS macro.
II. Relative positioning. Code the CURSOR option with a value relative to zero (position 1.1 is zero)
III. Symbolic positioning. Move high values or -1 the field length in the symbolic map (and code CURSOR on SEND command).

**Question - 132:**
What is a mapset?

**Ans:**
A mapset is a collection of BMS maps link-edited together.

**Question - 133:**
Why is a TERM ID recommended in naming a TSQ?

**Ans:**
In order to avoid confusion and to maintain data security, a strict naming convention for QID will be required in the installation. Moreover, for a terminal-dependent task (e.g. pseudo-conversation task), the terminal id should be included in QID in order to ensure the uniqueness of TSQ to the task.

**Question - 134:**
What are the differences between Temporary Storage Queue (TSQ) and Transient Data Queue (TDQ)?

**Ans:**
Temporary Storage Queue names are dynamically defined in the application program, while TDQs must first be defined in the DCT (Destination Control Table). When a TDQ contains a certain amount of records (Trigger level), a CICS transaction can be started automatically. This does not happen when using a TSQ. TDQ (extra partition) may be used by batch application; TSQ cannot be accessed in batch. The Transient Data Queue is actually a QSAM file. You may update an existing item in a TSQ. A record in a TDQ cannot be updated. Records in TSQ can be read randomly. Records in Temporary Storage can be read more than once, while records stored in Temporary Data Queues cannot. With TDQs it is “one read” only.

**Question - 135:**
What does the following transactions do?

**Ans:**

**Question - 136:**
What is the function of the Terminal Control table?

**Ans:**
To register all CICS terminals

**Question - 137:**
Which CICS service transaction is used to gain accessibility to CICS control tables? Mention the one that has the highest priority?

**Ans:**
CEDA

**Question - 138:**
Into which table is the terminal id registered?

**Ans:**
TCT.

**Question - 139:**
Which transient data queue support ATI?

**Ans:**
INTRA-PARTITION Data queue.

**Question - 140:**
Explain the means of supporting pseudo conversation programming. (Eg. Storing and restoring of states, control flow, error handling)?

**Ans:**
When we send a map using SEND MAP command, immediately we release the program by using EXEC CICS RETURN command. In this command we mention the TRANSACTION ID which is to be executed after receiving the map. In this command we also specify the data that should be stored in COMMUNICATION AREA for later use. When this command is executed the corresponding program is released from the memory. After receiving the response from the terminal the program is again loaded and this time the data which we stored in communication area will be copied into the working storage section. And the map will be received with RECEIVE MAP command. The variable EIBCALEN in EIB holds the length of communication area. In procedure division we checks the value of EIBCALEN if it is zero, we first send the map followed by RETURN command. Otherwise, that is if EIBCALEN is not zero, we know that this transaction is not running first time and we receive the map by using RECEIVE MAP command.

**Question - 141:**
How can you start a CICS transaction other than by keying the Transaction ID at the terminal?

**Ans:**
By coding an EXEC CICS START in the application program
1. By coding the trans id and a trigger level on the DCT table
2. By coding the trans id in the EXEC CICS RETURN command
3. By associating an attention key with the Program Control Table
4. By embedding the TRANSID in the first four positions of a screen to the terminal.
5. By using the Program List Table.

**Question - 142:**
What are the differences between and EXEC CICS XCTL and EXEC CICS START command?
The XCTL command transfers control to another application (having the same Transaction ID), while the START command initiates a new transaction ID (therefore a new task number). The XCTL continues task on the same terminal. START can initiate a task on another terminal.

Question - 143:
What happens to resources supplied to a transaction when an XCTL command is executed?

Ans:
With an XCTL, the working storage and the procedure division of the program issuing the XCTL are released. The I/O areas, the GETMAIN areas, and the chained Linkage Section areas (Commarea from a higher level) remain. All existing locks and queues also remain in effect. With a LINK, however, program storage is also saved, since the transaction expects to return and use it again.

Question - 144:
What is a resident program?

Ans:
A program or map loaded into the CICS nucleus so that it is kept permanently in main storage and not deleted when CICS goes "Short on Storage."

Question - 145:
What is some of the information available in the EIB area?

Ans:
I. The cursor position in the map
II. Transaction ID
III. Terminal ID
IV. Task Number
V. Length of communication area
VI. Current date and time
VII. Attention identifier

Question - 146:
What is the effect of including the TRANSID in the EXEC CICS RETURN command?

Ans:
The next time the end user presses an attention key, CICS will start the transaction specified in the TRANSID option.

Question - 147:
What is the function of the EXEC CICS HANDLE CONDITION command?

Ans:
To specify the paragraph or program label to which control is to be passed if the "handle condition" occurs.

Question - 148:
What is the difference between EXEC CICS HANDLE CONDITION and an EXEC CICS IGNORE command?

Ans:
HANDLE CONDITION command creates a "go-to" environment. An IGNORE command does not create a go-to environment: instead, it gives control back to the next sequential instruction following the command causing the condition. They are opposites.

Question - 149:
When a task suspends all the handle conditions via the PUSH command, how does the task reactivate all the handle conditions?

Ans:
By coding an EXEC CICS POP HANDLE command

Question - 150:
What are the CICS commands available for program control?

Ans:
The following commands are available for the Program Control services:
1. LINK: To pass control to another program at the lower level, expecting to be returned.
2. XCTL: To pass control to another program at the same level, not expecting to be returned.
3. RETURN: To return to the next higher-level program or CICS.
4. LOAD: To load a program
5. RELEASE: To release a program.

View All Answers

Question - 151:
Explain the various ways data can be passed between CICS programs?

Ans:
Data can be passed between CICS programs in three ways: COMMAREA, TRANSIENT DATA QUEUE $ TEMPORARY STORAGE QUEUE.
Data can be passed to a called program using the COMMAREA option of the LINK or XCTL command in a calling program. The called program may alter the data content of COMMAREA and the changes will be available to the calling program after the RETURN command is issued in the called program. This implies that the called program does not have to specify the COMMAREA option in the RETURN command.
If the COMMAREA is used in the calling program, the area must be defined in the Working Storage Section of the program (calling), whereas, in the called program, the area must be defined as the first area in the Linkage Section, using reserved name DFHCOMMAREA.

View All Answers

Question - 152:
What is the EXEC CICS HANDLE ABEND?

Ans:
It allows the establishing of an exit so cleanup processing can be done in the event of abnormal task termination.

View All Answers

Question - 153:
What happens when a CICS command contains the NOHANDLE option?

Ans:
No action is going to be taken for any exceptional conditional occurring during the execution of this command. The abnormal condition that occurred will be ignored even if an EXEC CICS HANDLE condition exist. It has the same effect as the EXEC CICS IGNORE condition except that it will not cancel the previous HANDLE CONDITION for any other command.

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Question - 154:
Explain re-entrancy as applies to CICS?

Ans:
Reentrant program is a program which does not modify itself so that it can reenter to itself and continue processing after an interruption by the operating system which, during the interruption, executes other OS task including OS tasks of the same program. It is also called a "reenterable" program or "serially reusable" program.
A quasi-reentrant program is a reentrant program under the CICS environment. That is, the quasi-reentrant program is a CICS program which does not modify itself. That way it can reenter to itself and continue processing after an interruption by CICS which, during the interruption executes other tasks including CICS tasks of the same program. In order to maintain the quasi-reentrancy, a CICS application program must follow the following convention:
Constants in Working Storage: The quasi-reentrant program defines only constants in its ordinary data area (e.g. working Storage Section). These constants will never be modified and shared by the tasks.
Variable in Dynamic Working Storage: The quasi-reentrant program acquires a unique storage area (called Dynamic Working Storage - DWS) dynamically for each task by issuing the CICS macro equivalent GETMAIN. All variables will be placed in this DWS for each task. All counter would have to be initialized after the DWS has been acquired.

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Question - 155:
How is addressability achieved to the data outside programs working storage?

Ans:
The Base Locator for Linkage (BLL) is an addressing convention used to address storage outside the Working Storage Section of an application program. If BLL is used for the input commands (e.g.: READ, RECEIVE), it will improve the performance, since the program would be accessing directly the input buffer outside of the program. In order to work as intended, the program must construct BLL based on the following convention:
1. The parameter list must be defined by means of a 01 level data definition in the Linkage Section as the first area definition to the Linkage Section, unless a communication area is being passed to the program, in which case DFHCOMMAREA must be defined first. The parameter list consists of a group of the address pointers, each of which is defined as the full word binary field (S9(8) COMP). This is called the BLL cells.
2. The parameter list is following by a group of 01 level data definitions, which would be the actual data areas. The first address pointer of the parameter list is set up by CICS for addressing the parameter list itself. From the second address pointer onward, there is a one-to-one correspondence between the address pointer of the parameter list and 01 level data definitions.
3. VS COBOL II provides CICS application programs with a significant improvements in the area of addressability through the special ADDRESS register. Therefore, if an application program is written in VS COBOL II, the program is no longer requires building the BLL.

View All Answers

Question - 156:
What are the differences between and EXEC CICS XCTL and an EXEC CICS LINK command?

Ans:
The XCTL command transfer control to an application program at the same logical level (do not expect to control back), while the LINK command passes control to an application program at the next logical level and expects controal back.

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Question - 157:
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What CICS command do you need to obtain the user logon-id?

**Ans:**
You must code EXEC CICS ASSIGN with the OPENID option.

**Question - 158:**
What is EIB, How is can be used?

**Ans:**
CICS automatically provides some system-related information to each task in a form of EXEC interface BLOCK (EIB), which is unique to the CICS command level. We can use all the fields of EIB in our application programs right away.

**Question - 159:**
What information can be obtained from the EIBRCODE?

**Ans:**
The EIBRCODE tells the application program if the last CICS command was executed successfully and, if not, why not.

**Question - 160:**
Explain how to handle exceptional conditions in CICS?

**Ans:**
An abnormal situation during execution of a CICS command is called an exceptional condition:
1. Handle Condition Command: It is used to transfer control to the procedure label specified if the exceptional condition specified occurs.
2. Ignore Condition Command: It causes no action to be taken if the condition specified occurs in the program. That is control will be returned to the next instruction following the command which encountered the exceptional condition.
3. No Handle Option: This option can be specified in any CICS command and it will cause no action to be taken for any exceptional condition occurring during execution of this command.
4. RESP Option: This option can be specified in any CICS command. If the RESP option is specified in a command, CICS places a response code at a completion of the command. The application program can check this code, then proceed to the next processing.

**Question - 161:**
How many conditions can you include in a single HANDLE CONDITION command?

**Ans:**
No more than 16 in a single handle condition. If you need more, then you must code another HANDLE CONDITION command.

**Question - 162:**
What is the COMMAREA (communications area)?

**Ans:**
This is the area of main storage designed to let programs or task communicate with one another. used in programs via RETURN, XCTL and LINK commands.

**Question - 163:**
What option is specified in the SEND command to send only the unnamed fields on to the screen?

**Ans:**
MAPONLY

**Question - 164:**
What is the most common way of building queue-id of a TSQ?

**Ans:**
(Title the constituents of the Queue ID).
TERMID+TRANSACTION-ID.

**Question - 165:**
How and where is the TWA size set?

**Ans:**
TWASIZE=300 in PCT table.
Question - 166:
Code the related portions of CICS/COBOL-I programs to gain addressability to TWA area assigned to a particular task. Assume that the size of TWA area is 300 bytes. What are the advantages if COBOL-II is used in the place of COBOL?

Ans:
Code the above requirement in COBOL-II.

AN: LINKAGE SECTION.
  01 PARMLIST.
  02 FILLER PIC S9(8) COMP.
  02 TWA-PTR S(98) COMP.
  01 TWA-DATA-LAYOUT.
  02 DATA-AREA PIC X(300).

PROCEDURE DIVISION.
......
  EXEC CICS ADDRESS
  TWA(TWA-PTR)
  END-EXEC
  SERVISE RELOAD TWA-DATA-LAYOUT.

COBOL-II PROGRAM
  LINKAGE SECTION
  01 TWA-DATA-LAYOUT.
  05 DATA-AREA PIC X(300).

PROCEDURE ASSIGN
......
  EXEC CICS ADDRESS
  TWA(ADDRESS OF TWA-DATA-LAYOUT)
  END EXEC
......

Question - 167:
What does Pseudo Conversational mean?

Ans:
The programming technique in which the task will not wait for the end-user replies on the terminal. Terminating the task every time the application needs a response from the user and specifying the next transaction to be started when the end user press any attention key (Enter, PF1 through PF24, PA1, PA2 and clear) is pseudo-conversational processing.

Question - 168:
What is the function of the CICS translator?

Ans:
The CICS translator convert the EXEC CICS commands into call statements for a specific programming language. There are CICS translator for Assembler, COBOL, and PL/1.

Question - 169:
What is the purpose of the Program List Table?

Ans:
The Program List Table records the set of application programs that will be executed automatically at CICS start-up time

Question - 170:
What are the six different type of argument values in COBOL that can be placed in various options of a CICS command?

Ans:
. Data Value - EX (Literal 8 or 77 KEYLEN PIC S9(4) COMP VALUE8.)
. Data Area - EX (01 RECORD-AREA. 05 FIELD PIC X(5).)
. Pointer-REF - EX (05 POINTER-I PIC S9(8) COMP.)
. Name - EX (05 FIELD-NAME PIC X(5) VALUE 'FILEA'.)
. Label - Cobol paragraph name
. HHMMSS - EX (77 TIMEVAL PIC S9(7) COMP3.)

Question - 171:
Into what fields will the date and time values be moved after execution of the above command?

Ans:
EIBDATE and EIBTIME.
Question - 172:
Mention the option (along with argument type) used in a CICS command to retrieve the response code after execution of the command?

Ans:
RESP( S9(8) COM. )

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Question - 173:
What are the two ways of breaking a CPU bound process to allow other task to gain access to CPU?

Ans:
EXEC CICS DELAY EXEC CICS DELAY
INTERVAL(hhmmss) TIME(hhmmss)
END-EXEC END-EXEC

View All Answers

Question - 174:
What is the EIB parameter and the CICS command used to implement Pseudo-Conversational technique using single PCT - Single PPT entry?

Ans:
EIBCALEN - To check if COMMAREA has been passed in return command.
EXEC CICS RETURN
TRANSID(data-name)
COMMAREA(data-area)
LENGTH (data-value)
END-EXEC

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Question - 175:
Specify the requirements for Automatic Task Initiation. (Mention the control table, it is entries and the corresponding Procedure division CICS command).

Ans:
DFHDCT TYPE = INTRA,
DESTIN = MSGS,
TRANSID = MSW1,
TRIGLEV = 1000
EXEC CICS WRITEQ TD
QUEUE('MSGS'),
FROM(DATA-AREA),
LENGTH(MSG_LEN)
END-EXEC.

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Question - 176:
Specify CICS transaction initiation process. (From the perspective of CICS control programs and control tables.)?

Ans:
TCP places data in TIOA and corresponding entry into TCT.
KCP acquires the transaction identifier from TIOA and verifies if it is present in PCT.
SCP acquires Storage in Task Control Area (TCA), in which KCP prepares control data for the task.
KCP then loads the application programs mentioned in PCT by looking for it in PPT.
If resident - real storage memory location is not present in the PPT the control is passed to PCP that loads the application program from the physical storage location address given in PPT. The control is then passed to the application program (LOAD module).

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Question - 177:
What are the attribute values of Skipper and Stopper fields?

Ans:
ASKIP. PROT.

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Question - 178:
What is the option specified in the read operation to gain multiple concurrent operations on the same dataset?

Ans:
REQID(value)

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Question - 179:
Which command is used to release a record on which exclusive control is gained?

Ans:

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EXEC CICS UNLOCK END-EXEC.

Question - 180:
Specify the CICS command used to read a VSAM record starting with prefix F. Code all the relevant options?

Ans:
EXEC CICS READ
   DATASET('FILENAME')
   INTO(data-area)
   RIDFLD(data-area)
   KEYLENGTH(1)
   GENERIC
   LENGTH(WK-LEN)
END-EXEC.

Question - 181:
How do you dynamically set the CURSOR position to a specific field?

Ans:
MOVE -1 to FIELD + L field. Mention CURSOR option in the SEND command.

Question - 182:
How do you set the MDT option to ON status, even if data is not entered?

Ans:
Mention FSET option in DFHMDF or set it dynamically in the program using FIELD+A attribute field.

Question - 183:
What is the CICS command that gives the length of TWA area?

Ans:
EXEC CICS ASSIGN
   TWALENG(data-value)
END-EXEC.

Question - 184:
How do you establish a starting position in a browse operation?

Ans:
EXEC CICS STARTBR ---- END-EXEC.

Question - 185:
Mention the option used in the CICS READ command to gain accessibility directly to the file I/O area. (Assume COBOL-II)?

Ans:
SETI(ADDRESS OF LINKAGE-AREA).

Question - 186:
Which option of the PCT entry is used to specify the PF key to be pressed for initiating a transaction?

Ans:
TASKREQ=PF1

Question - 187:
How do you terminate an already issued DELAY command?

Ans:
EXEC CICS CANCEL
   REQID(id)
END-EXEC

Question - 188:
What is the CICS command used to access current date and time?

**Ans:**
ASKTIME.

**Question - 189:**
How do you initiate another transaction?

**Ans:**
The transaction initiated should be in a position to retrieve information pertaining to which transaction has initiated it and from which terminal. (Code the required CICS commands)

```cics
EXEC CICS START
  INTERVAL(hhmmss)/TIME(hhmmss)
  TRANSID('TRAN')
  TERMID('TRM1')
  FROM(data-area)
  LENGTH(data-value)
  RTRANSID(EIBTRNID)
  RTERMID(EIBTRMID)
END-EXEC
EXEC CICS RETRIEVE
  INTO(data-area)
  LENGTH(data-value)
  RTRANSID(data-name)
  RTERMID(data-name)
END-EXEC
```

**Question - 190:**
Mention the 5 fields available in the symbolic map for every NAMED field in the DFHMDI macro? Give a brief description of these fields (Not exceeding a line)?

**Ans:**
FIELD+L - Return the length of text entered (or for dynamic cursor positioning)
FIELD+F - Return X(80) if data entered but erased.
FIELD+A - Used for attributes reading and setting
FIELD+I - Used for reading the text entered while receiving the map.
FIELD+O - Used for sending information on to the MAP.

**Question - 191:**
What are the commands used to gain exclusive control over a resource?

**Ans:**
What are the commands used to gain exclusive control over a resource (for Ex a Temporary storage queue)?

```cics
EXEC CICS ENQ
  RESOURCE(QID)
END-EXEC
EXEC CICS DEQ
  RESOURCE(QID)
END-EXEC
```

**Question - 192:**
List the sequence of steps used to achieve Modification in Skip Sequential Mode?

**Ans:**
List the sequence of steps used to achieve "Modification in Skip Sequential Mode".

- I. READNEXT command
- II. Issue the ENDBR command
- II. Issue the READ command with UDATE option.
- IV. Manipulate the record (DELETE or REWRITE command)
- V. Issue START command
- VI. Issue two READNEXT commands (One for dummy skip)
- VII. Go to step two.

**Question - 193:**
Kindly specify the PIC clause for the following:
Any BLL Cell, Data type of Length Option field, HHMMSS type of data fields?

**Ans:**
Any BLL Cell -S9(8) COMP
Data type of length Option field - S9(4) COMP
HHMMSS type of data fields - S9(7) COMP

View All Answers
Question - 194:
What is CICS?

Ans:
CICS (Customer Information Control System) is a transaction server that runs primarily on IBM mainframe systems under z/OS and z/VSE. CICS is a transaction manager designed for rapid, high-volume online processing. This processing is mostly interactive (screen-oriented), but background transactions are possible.
While CICS has its highest profile among financial institutions such as banks and insurance companies, over 90 percent of Fortune 500 companies are reported to rely on CICS (running on z/OS) for their core business functions, beside many governments. CICS is used in bank-teller applications, ATM systems, industrial production control systems, insurance applications and many other types of interactive application.
Recent CICS Transaction Server enhancements include support for Web services and Enterprise Java Beans (EJBs). IBM began shipping the latest release, CICS Transaction Server - Version 3.2, in June of 2007.

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