

## CICS

### 1. Explain the differences between a Transaction and a Task.

- A. Under CICS, a user can't directly invoke a program. Instead, the user invokes a transaction, which in turn specifies the program to be run. When a user invokes a transaction, CICS locates the associated program with the transaction, loads it into storage (if it is not there), and starts a task. Where Task is a unit of work which is scheduled by CICS. The difference between transaction and task is that while several users may invoke the same transaction, each initiates a separate task.

### 2. Describe the basic differences between batch and online systems.

- A. In a Batch processing system, transactions are accumulated into groups, or batches, before they are processed. For example the processing of the Orders collected for the whole day. In an Online processing system the transactions are processed by the system as soon as the transaction is entered on to the system. Ex. Airplane Reservation system. In a batch system the turnaround time is measured in hours and days, while for the On-line system it is measured in micro-seconds and seconds. On an Online system, if there is an error in data, the system indicates it immediately, and can be corrected and reprocessed. Allstate Insurance Co., uses CICS V4.1. on their system.

### 3. What are the four major types of Online Programs?

- A. The menu program. The inquiry program. The file maintenance program. The Data Entry program.

### 4. Describe the different considerations for the Online programs (CICS).

A. Ease of use. IBM promotes a user interface standard called CUA (common user Access). CUA provides Entry model, Graphical model, and Intermediate model - the text subset of graphical model.

Performance. Performance is a critical consideration for online programs. Performance for online systems is measured in terms of response time. Many factors affect response time. The most critical factors are the total number of programs running within the CICS system, the Disk I/O, the terminal and host computers and network.

File Integrity. A batch program typically has complete control of the files it uses, so there's no chance of another interfering with its processing. In an online system however many terminal users use the system simultaneously, and all must have access to the files they require at the same time.

Security. On batch systems Security implementation is simple as the access to the computer system can be controlled. However in an online system terminals are located at several locations. Logon procedure being used can ensure security to a great extent. Using of multi-level security to allow only certain users to access files and programs based on the logon id helps to secure the system.

### 5. Describe the most common way a task is started under CICS.

A. By entering the Transaction Identifier on the terminal and pressing Enter Key. When the Trans-id is entered on the CICS screen, it locates the program associated with the trans-id from the PCT. Then the location of the program is determined by CICS by reading the entries in PPT. After the load module is located, it loads it onto the CICS main memory, then task workspace is assigned for CICS own use to execute the task.

The other different ways are by a transaction identifier associated with a terminal for pseudo-conversation, By RETURN command, By START command (Time-driven Automatic Task Initiation), By a DCT entry and TDQ write (Data-driven ATI), and by using 3270 attention identifier key.

## 6. Distinguish between Multitasking and Multi-threading.

- A. Multi-tasking means that the OS allows more than one task to run (be executed) concurrently, regardless of whether the task use the same program or different programs. Multi-threading is the system environment, where multiple tasks share the same program under the multi-tasking environment. Programs are shared by several tasks, and for each task the program work as if it executes the instructions only for that task.

## 7. Briefly describe the function of each of the various CICS modules.

A. Terminal Control. It is the interface between the CICS application program and the Operating System's Tele-Communication Access Method (VTAM, TCAM or BTAM). Terminal control lets you send text to and receive text from the terminal that initiated the task. An application program that uses terminal control directly must process complicated strings of control characters and data sent to and received from the terminal.

Basic Mapping Support. To relieve the programmer from building complicated strings of control characters to send data to and receive data from terminals, BMS is used that acts as interface between the program and terminal control. BMS lets you create a map that specifies the format of data as it appears on the terminal display.

File Control. File control acts as an interface between the Application program interface and the VSAM files. The application program interface acts as the interface between the file control and application program. When a File control receives a request, it passes on to the appropriate VSAM File, which in turn would manage the data storage.

Program Control. This service manages programs executing within a task as an execution of an application for a particular user. API acts as the interface between the application program and the individual CICS services.

Transient Data Control. It provides the convenient way to use simple sequential files called destinations. Whenever a record is written to a destination it is added to the end. A task reads the first from destination, which gets deleted.

Temporary Storage Control. It provides the simplest method for storing data outside your CICS program's working storage area. Data is stored on TSQ's. If the amount of storage is small it can be stored on main memory else a disk.

Interval Control. This service lets you implement time dependent applications. It provides a method of starting a task that's an alternative to trans-id. It can be used to specify a task to start at a specific time. Storage Control. It allocates storage space to application programs. Since most programs keep all their data in working storage, which is allocated automatically, you will not use storage control commands frequently.

Task Control. It lets you control the execution of tasks. You can use it to suspend your task temporarily to prevent it from taking exclusive control and monopolizing the CICS resources and also take control over TSQ's.

Dump control service provides the transaction dump that shows the content of main storage used by the program. You can also use dump control to create dump at specific points without terminating the program for analysis.

Trace control. It maintains the Trace table that indicates the sequence of CICS operations performed within a task.

Journal Control module provides a standardized method of creating Output files called Journals, which are used to restore files in the event of a system failure.

The different table used by the above mentioned modules are TCT (term\_id), FCT (specify which operations are allowed on the file), PCT(trans-id, programs), DCT, TST, ... PPT, ... JCT, and others are SNT, SRT(sys. recovery).

#### 8. Describe the differences between operation of Pseudo-Conversational and a conversational program.

A. In a conversational mode, the program accomplishes the conversation by simply sending a message to the terminal, and waiting for the user to respond, and receiving the response from the terminal. The system that sits idle without allowing an other operation while waiting for the data is called a conversational program.

In a Pseudo-Conversational program, a program attempts a conversation with a terminal user, it terminates the task after sending a message with a linkage for the next task. When the user completes the response the next task is automatically initiated. Pseudo-conversational program's uses the CICS resources such as control tables efficiently.

#### 9. Briefly describe the functions of each of the following tables - PCT, PPT, FCT.

A. CICS creates internal control tables mentioned below based on the Resource definitions created by the system programmers. There are two ways a programmer can create a resource definition. By using special assembler macro instruction or by using the Resource definition online (RDO). RDO is even called as CEDA as it is the transaction used to initiate RDO. RDO is used to define the resources needed such as program name, BMS, Trans-id, file info...

Program Control Table - The primary function of the PCT is to register the control information of all CICS transactions. PCT contains a list of valid Trans-id paired with the name of a program CICS will load when the transaction is initiated with that transaction identifier. It identifies priority and security level (RSLC) of transaction.

Processing Program table - The Primary function of PPT is to register all CICS application programs and BMS mapsets. The PPT keeps track of which applications are loaded on the CICS address Space (storage). CICS uses this information to determine whether new copy of the program need to be loaded from Disk or it exists on storage. It contains information such as Location in memory, Library address of the disk and language being used.

File Control Table - The Primary function of FCT is to register the control information of all files, which are used under CICS. FCT contains the name and type of each file and in addition lists the file control operations that are valid for each file. It lists whether the existing records can be read sequentially or randomly, deleted or modified. Others control tables used are TCT to register terminals, DCT, TST, RCT, SIT, SRT and SNT.

#### 10. Describe the basic eight steps of a CICS program development according to Doug Lowe.

Step1: Develop a complete set of program specifications. The minimum the specifications should include program overview, a screen layout for each map being used, a listing of copy members of each file used by the program. Others that are needed are include decision tables, editing rules, ...

Step2: Design the program. Most standard COBOL programs are designed around a basic looping structure that controls the overall program execution. In a pseudo-conversational CICS program there is no basic looping structure, Instead CICS invokes your program whenever there is an interaction with a user. CICS program is to be designed to respond appropriately for each type of user action.

Step3: Create the necessary CICS table entries. Before you can test a CICS program, you need to make sure that all of the CICS table entries required to support the program are in place. For most programs the entries need to be added to PPT, PCT and FCT tables.

Step4: Prepare the BMS mapset by coding the assembler language BMS macros. Incidentally many shops use mapset generator.

Step5: Code the program. Coding the CICS programs involves writing of standard COBOL code with special CICS commands to invoke CICS services.

Step6: Compile the program. By either using the Foreground command level translator or a JCL, compile the CICS application program. Under which the CICS commands are commented out and replaced by appropriate calls and move statements during the pre-compile / Translation step. In addition to translation the CICS commands the translator also inserts other code needed to process the CICS instructions. Now the Cobol Source is compiled and link-edited similar to a standard Cobol program. Under Microfocus Checker is used.

Step7: Test the program under CICS test region. Load and run the program under the test environment and check for the functionality. You can use CEMT, CEDF and CECI transactions during the test cycle.

Step8: Document the Program. After the test runs fine and everything look's Ok create the necessary documentation for the program. Use built-in helps in the program along with necessary comments wherever needed in it.

## **2 CICS Programming Concepts.**

### **1. Explain the COBOL code used in a CICS program in general. (11)**

A. There is no difference between the COBOL and CICS Identification Division, in which Program-Id is mandatory. The Environment division of the CICS-COBOL program needs to be empty, as the Environmental information is controlled by the CICS tables such as FCT. Beginning with VS COBOL II Release3 compiler, one can omit coding of the header also. In the Data Division, File Section is not to be defined. It contains the working storage Section and Linkage Section for all the programs. A field called COMMAREA is defined in Working-Storage Section and DFHCOMMAREA in Linkage section for all the programs. Compiler adds Execute Interface Block (DFHEIB) in Linkage section. The Procedure division is used to code the Program logic, to perform the necessary functionality.

### **2. Explain the COBOL code used to detect the first execution of a program in a pseudo-conversational session. How do you pass information from one task to other? How do you test the response codes?**

A. Evaluate EIBCALEN variable to determine the first execution of a program in a pseudo-conversational session. If it's value is zero then it's the 1st execution of the program. The communication area is a special field, which must be at least of one byte long and is used to pass data from one program execution to the next. The next field defined after the communication area in the working-storage section is the Response field, a full-word binary item (S9(8) comp). This field is used to test the completion status of CICS (READ) command with the option RESP(Response field).

### **3. What COBOL feature's are not allowed under any compiler version, while coding CICS programs?**

- A. ACCEPT, DISPLAY, OPEN, CLOSE, READ, WRITE, REWRITE, DELETE, START, SORT, RELEASE, RETURN, EXHIBIT, TRACE, Segmentation features, and Report writer features. The CICS using COBOL II features that are not allowed under the OS/VS COBOL environment are GOBACK, STOP RUN, EXAMINE, STRING, UNSTRING and INSPECT.

#### 4. Explain the purpose of each of the CICS transactions - CESN, CESH, CEMT, CECI and CEDF.

A. CESN - CICS Execution Sign On. Ex. CESN. Ex2. CESN USER=N6SSAGI,PW=SUNIL1.It's used for logging into the CICS System.

CESH - CICS Execution Sign Off. Ex. CESE. EX2. CESH LOGOFF .It's used for Signing off.

CEMT - C E Master Terminal. Ex. CEMT SET PROGRAM=(pgmname),NEWCOPY .It's used for variety of supervisory CICS functions. CEMT transaction can be used to force a new program copy as above. To open or close a dataset as Ex2. CEMT SET DATASET(dataset) {OPEN/CLOSED}.(TSQ).To disable a program or transaction or a program as Ex3. CEMT S PR/TRANSACTION(name) {DISABLED/ENABLED}. And even to cancel a task that is running on another terminal. Ex1 tells CICS that you have updated an application program, so it should read a fresh copy of the program from disk. You should issue this command whenever you recompile a program while CICS is running. Otherwise CICS will continue to use the older version. The two CEMT commands in Ex3. Are very useful when a program error forces a pseudo-conversational program into a loop. The only catch is you might have to run the CEMT command from another terminal as this terminal gets locked due to the loop.

CECI - C E Command-level Interpreter. You invoke this transaction by typing the trans-id, optionally followed by the CICS command. CECI checks the syntax of the command and displays a panel telling you it is about to execute the command. When you press Enter, CECI executes the command and displays the result. CECI can be used to update the contents of the files. You use CECI often to display maps, read or write VSAM file records and so on. CECI can use it's five predefined variables namely &DFHC, &DFHW, &DFHR, &LEN and &DATA. To the right of each variable name is the variable length. The various keys used under CECI transaction are F1-HELP, F2-HEX, F3-END, F4-EIB, F5-VAR, F6-User, F9-Message.

CEDF - CE Diagnostic Facility. It invokes a debugging aid called EDF. When EDF is activated, you can run a program step by step, checking the completion of each CICS command and examine the content of WS as needed. Other CICS supplied transactions used are MAPS,

#### 5. Define Event-Driven Design that is frequently used in CICS to follow pseudo-conversational approach.

Event-driven design forces you to think in terms of events that can trigger the execution of a pseudo-conversational program and the program's Response to each Event. The various steps include Identifying the user input events and then Designing the program's response to each event, and by designing a Structure charts with alternative designs by moving the generalized process into a separate module (para) and numbering the modules.

### Basic Mapping Support.

#### 1. What is the importance of MDT in maps? (16)

A. An MDT on, which is a part of the attribute byte, causes data on the screen to be returned to the program when a map is received. MDT's can be turned on by Specifying FSET as part of the attribute of the BMS map, then issuing a SEND which includes the physical map. Do not overlay the BMS map's attributes with the symbolic map attributes on a SEND of map and data. Symbolic map's attributes equal to low values will not overlay the BMS attributes. Ex. ATTRB=(ASKIP,FSET).

Moving a standard attribute, which contains FSET to the Symbolic map's attribute before issuing the SEND which includes the symbolic map, such as MOVE UNPROT-FSET TO MAPFLDA.

Keying data into Unprotected field on the screen. Entering data into a field will turn its MDT On.

2. Explain the function of Modified Data tag. List the Extended attributes with stress on highlighting.

- A. Last bit of the attribute byte indicates MDT. If the user keys in any data into the field, it turns the MDT ON indicating that the data is modified. To save transmission time, 3270 terminal sends a field over the TC line only if the MDT is on. Otherwise, the field value is not transmitted. The extended attributes of a field include extended Color (Red, blue, pink, green, turquoise, yellow, white), extended highlighting (Blinking, Reverse Video, Underline), Validation (Must fill, Must enter, Trigger), and Programmed symbols (Up to six alternative user defined char-sets).

3. What is the special byte described at the end of the Unprotected fields in BMS maps called?

- A. The Special byte unnamed fields on a Map are called stopper fields. The others are Unnamed fields (Literal's) are used for Titles, Field identifiers and messages and the Named (variables) Output fields and Named Input fields. There's a stopper field at the end of every named field.

4. Define BMS Map, Mapset, Physical Map, Symbolic map and Map definition macros.

A. BMS Map. The primary objective of Basic Mapping Support system is to free the Application Program from device dependent codes and Format. A screen defined through BMS is called a Map. There are two type of maps. Physical Map: It is the assembly language program, which are created and placed in a load (program) library. It controls the screen alignment plus sending and receiving of constants and data from and to the terminal, and has the terminal information. Symbolic Map: It defines the map fields used to store variable data referenced in a COBOL program. They may be placed by BMS into a Copy library and be added to the Cobol program at the compile time.

Representation of one screen format is called Map. A group of maps, which are link-edited together is called a Mapset. BMS maps are generated by using the following, BMS Macros: DFHMSD - To define the Mapset, DFHMDI - To define a map in a mapset, and DFHMDF - To define a field in map.

5. Describe the Two primary functions of attribute bytes in a 3270 display. What are the three standard attributes?

- A. The IBM3270 screen is a field-oriented display. In other words the screen is logically divided into a number of user defined fields. The location and characteristics of the screen fields are determined by special characters called the attribute bytes. The attribute byte takes one position on the screen immediately to the left of the field. The standard attributes used in general are Protection, Intensity and Shift. The Attribute byte Bit positions - 0th-1st bits indicate none. 2nd-3rd bits indicates the protection and shift (If 00-Unprotected Alphanumeric, 01-Unprotected Numeric, 10-Protected Stop and 11-Protected Skip). 4th-5th bits indicate the intensity (00-Normal, 01-Normal, 10-bright, 11-No-display). 6th must always be '0'. 7th bit indicates MDT (0-field has not been modified, 1-field is modified).

6. Describe the DFHMSD, DFHMDI and DFHMDF Macros briefly along with it's options.

A. DFHMSD Macro is used to define the Mapset. The name of the Mapset is the label typed before the macro name. The various parameters used to define the DFHMSD Macro are. TYPE specifies whether a Physical map (=MAP), or Symbolic map (=DSECT), or both (= &SYSPARM) need to be generated. TYPE=FINAL indicates the end. LANG specifies the programming language in use (=ASM),(=COBOL),(=PLI). MODE specifies whether the Mapset is for input (=IN), output (=OUT), or both (INOUT). TERM specifies the terminal type, (=ALL), (=3270), (=3270-1) indicates 3270 model 1 terminal with 40 char lines, (=3270-2) indicates 3270 model 2 terminal with 80. CTRL specifies the control options, the common ones in use are (=FREEKB), (=ALARM). STORAGE=AUTO specifies the symbolic maps will occupy separate storage locations, Otherwise they will overlay the same storage locations, i.e. a redefines clause will be used for symbolic map items. MAPATTS specifies the Physical map extended attributes, COLOR and HILITE are the most common. DSATTS specifies which extended attributes need to be supported by Symbolic maps. EXTATT specifies whether extended attributes are allowed to be specified. =YES indicates that support for all extended attributes should be provided in both physical and symbolic maps, =MAPONLY generate support only for physical maps. TIOAPFX=YES should be specified for all COBOL maps, it generates a 12 byte filler item at the beginning of the symbolic map. DFHMDI Macro is used to define Map's within a Mapset. The label on the DFHMDI macro is the Map's name. The various parameters used with DFHMDI are SIZE=(lines,columns) (usually 24,80) specifies the map size. LINE specifies the starting Line number. COLUMN specifies, starting column number (usually it's 1 as Line). JUSTIFY (left,right,last,first). CTRL specifies the control options to be used similar to DFHMSD as (FREEKB or ALARM).

DFHMDF Macro is used to define Field's within a Map. It may or may not be preceded by a label name to indicate the field name. The various parameters used are POS=(line,column) specifying the position of the field. ATTRB=(BRT/NORM/DRK,PROT/ASKIP/UNPROT,NUM,IC,FSET) specifies the attribute fields, NUM is used to specify the field as numeric and is right justified filled with zeroes, IC specifies the cursor to be located at the start of the data field, while FSET specifies the MDT bit On in the attribute byte of data field. COLOR specifies the color of the field (=Color (Red, blue, pink, green, turquoise, yellow, white)). INITIAL specifies the initial value of the field, during the MAP SEND (= 'literal'). PICIN specifies the input format while PICOUT specifies the output format, usually used with numeric strings (= 'picture-string') ex. (= 'ZZ,ZZZ,Z99.99').

## 7. Describe the function of each of the Fields generated in the Symbolic map.

A. The Symbolic map is used to send and receive data to and from the screen. When you assemble a Mapset the symbolic maps are created and placed in a COBOL Copy library. Every Symbolic map consists of two 01 levels generated with labels FilednameI and FieldnameO. These items overlay each other as the FieldnameO redefines FieldnameI. Variables under FieldnameI are used for Input while the other are used for output. The first variable is a filler of 12 bytes long generated because of TIOAPFX=YES parameter of the Mapset. In the 1st 01 level of the symbolic map, for each field macro coded with a label, five data-name's would be created with one-char suffix to the label in addition to the Input field. And Output field in 2nd 01 level. A sample Symbolic map, with a single field is.

```
01 INQMAPI.
02 FILLER PIC X(12). ----- > 1ST Field of the Symbolic map.
02 NAMEI PIC S9(4) COMP.
02 NAMEF PIC X(01).
02 FILLER REDEFINES NAMEF.
03 NAMEA PIC X(01).
02 FILLER PIC X(02) (if ext. Attrib. allowed)
02 NAMEI PIC X(25). ----- > RECEIVE INTO I
01 INQMAPO REDEFINES INQMAPI.
02 FILLER PIC X(12). ----- > 1ST Field of the Symbolic map.
```

02 FILLER PIC X(03). ----- > SEND FROM O

02 NAMEC X(1). 02 NAMEH X(1)

02 NAMEO PIC X(25). ( || if ext. Attributes. allowed)

The variable with suffix 'L' is a binary half word field that contains the length of the data sent to program. Variable with suffix 'F' is a single char field that contains X'80', if the user made a change to the field, but no data was transmitted; otherwise it contains low values. 'F' indicates whether <ERASE EOF> Key is used. Variable with suffix 'A' is a single char field containing the attribute byte of the field for the output operations. Occupies the same storage location as the 'F' field. Variable with suffix 'C' is a single character field that contains the attribute for extended color, generated only if DSATTS=COLOR is specified in DFHMSD Macro. Variable with suffix 'H' is a single character field that contains the attribute for extending highlighting, generated only if DSATTS=HIGHLIGHT is specified in DFHMSD Macro. Variable with Suffix of 'I' indicates the input field while the variable with suffix 'O' indicates the Output field.

#### 8. How do you use extended attributes ?

- A. Define EXTATT=YES and the correct terminal type. For CICS V1.7 or later use MAPATTS and DSATTS.

#### 9. What are the 3 working storage fields used for every field on the map? What other fields are generated?

- A. Length field, Flag Field and Attribute field. In addition Input & Output field are also created. Others are extended Color & Extended Highlighting attributes created only if MAPATTS and DSATTS are specified.

#### 10. What are the two outputs created as a result of generation of a Map?

- A. The map copybook (symbolic map) saved in copy lib and the load module (making the physical map).

#### 11. How do you protect a field from being overlaid? What is an attribute Byte?

- A. Using Protected attribute. The Attribute byte defines the display/transmission of field.

#### 12. Name the Copybook supplied by IBM, with all modifiable attribute bytes that can be used with symbolic maps.

DFHBMSCA.

13.

14.

15.

16.

#### 17. Describe the Basic function of the following CICS commands. RETURN, XCTL, SEND MAP, RECEIVE MAP, READ and ABEND.

- A. RETURN command is used to pass control from program to other or to program being executed to the higher level (CICS to end the session). The Options of RETURN command are TRANSID(name), COMMAREA(data-area), and LENGTH(length of Commarea).

XCTL command is used to transfer control from the current to the program specified through the PROGRAM(program-name) option, Other options that can be specified are COMMAREA and LENGTH. The SEND MAP command is used to send data from the program to the terminal screen by using the various options such as MAP to specify the physical map name, MAPSET for Physical Mapset name, FROM(data-area) for symbolic map definition, MAPONLY/DATAONLY to specify if only Physical or Symbolic maps are to be sent, The ERASE/ERASEAUP to specify if the all data or only the unprotected field data on the screen need to be erased before the map is sent, and finally the CURSOR is used to specify the cursor position.

The RECEIVE MAP command receives input data from the terminal, the options MAP, MAPSET and INTO are used similar to the SEND MAP options, INTO is used instead of from.

The READ command is used to read data from files. The DATASET option is used to specify the filename that needs to be defined in FCT, INTO(data-area) field specifies the data area to be used, RIDFLD(data-area) for a keyed field specifies the key of a record to be read, RRN or RBA when specified, this field is interpreted as Relative Record Number or R Byte Address, the UPDATE option specifies that the program intends to update the file with a subsequent REWRITE or DELETE command.

The ABEND command is used to terminate the program abnormally, If you specify ABCODE(name) the system will generate a storage dump with the abcode-name to identify it.

18. How do you place the cursor on the particular position on the screen (map)?

- A. Define the field with IC in the BMS map. Move -1 to the length attribute of the field and use the CURSOR option without displacement value. (symbolic positioning). Use the CURSOR(nnn) option with SEND MAP, where  $nnn = (row-1)*80+(col-1)$  (physical positioning).

19. What is MDT? What are FSET, FRSET?

- A. Modified Data Tag - Bit in the attribute byte indicating modification of field on screen. Changes on Input operation. FSET - is an attribute that sets the MDT On to ensure that the field is transmitted. Happens on an Output operation. FRSET. Resets MDT. Until this happens, field continues to be sent.

20. Do you receive the attribute byte in the symbolic map? When?

- A. Yes, On EOF.

21. How do you make your BMS maps case sensitive?

- A. Use ASIS option on RECEIVE MAP command ???

22. What is effect on RECEIVE MAP when a PF Key is pressed and when a PA Key s pressed.

- A. PF keys wake up (Initiate) the task and transmit modified data, PA keys only wake up (initiate) the task.

23. Can you use Occurs in a BMS map? If you do, what are the issues related to it's use?

- A. Yes. But cannot use group by clause???

24. How is the storage determined in the symbolic map, If you have multiple maps in a Mapset?

A. Storage for maps redefine the first. This means largest map has to be the first.

25. What is the meaning of the BMS length of the field = 0 ?

A. Data was not entered in the field

26. Can you simply check length=0 for checking, if a field was modified?

A. No, Not if ERASE EOF was used.

27. What does the BUFFER option in RECEIVE mean?

A. It brings the entire data-stream from the terminal buffer.

28. What are the different steps you go through too create a BMS executable?

Assemble to create CSECT and Link

### Command Level CICS

1. 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? (41)

A. DFHEIBLK, DFHCOMMAREA are added in the Linkage section of the program.

2. What is the content of the PPT entry?

A. Length, Source, Use count, Lang, Res count DFHRPL number. With entries of Mapset's and Programs.

3. Explain Handle AID command. What are it's disadvantages over using of EIBAID?

A. HANDLE AID command is used to pass control to various parts of the program based on the Attention Key (pressed by user). It does not detect the AID key by itself, but uses the RECEIVE MAP command, so it is always coded alongside (before) the RECEIVE MAP command. This is a disadvantage, as Receive Map that increase the traffic over the network may not be needed during various situations such as termination of program.

4. How is the Error Processing done in CICS system application programs?

A. Check RESP or EIBRESP after the call or use the HANDLE CONDITION (unstructured) command. The Handle Condition command is to be coded prior to the CICS command used for I/O handling such as RECEIVE MAP (map fail), LINK, XCTL (pgmiderr), READ, WRITE, REWRITE, DELETE, UNLOCK (notopen/duprec/ notfnd).

5. Explain the usage of DFHCOMMAREA in a CICS program.

- A. DFHCOMMAREA in the Linkage section is used to pass the data in working storage commarea from one to program to another program. It should be defined with as at least one byte long. As the working storage section is freshly allocated for every execution.

6. Explain Execution Interface Block.

- A. EIB is a CICS area that contains information related to the current task, which can be used for debugging the program. The most widely used variables are EIBDATE, EIBTIME, EIBAID, EIBCALEN, EIBCPOSN, EIBRESP, EIBRSRCE (resource), EIBFN (recent CICS command code), EIBTRMID and EIBTRNID.

7. Give a Sample FCT, PPT and PCT entries using the assembler code Macro (not RDO - 'CEDA').

```
A. DFHFCT TYPE=DATASET,DATASET=CUSTMAS,ACCMETH=(VSAM,KSDS), *  
SERVREQ=(ADD,DELETE,UPDATE,BROSWSE),RECFORM=(FIXED,BLOCKED)  
DFHPPT TYPE=ENTRY,PROGRAM=CUSTINQ1,PGMLANG=COBOL  
DFHPPT TYPE=ENTRY,PROGRAM=INQMENU  
DFHPCT TYPE=ENTRY,TRANSID=CUST,PROGRAM=CUSTINQ1
```

8. Explain the notion of Logical levels and Describe the effects of RETURN, XCTL and LINK commands.

- A. The CICS Terminal control is at the highest level and is considered to be running at logical level 0. The first Task initiated by entering a Trans-id is considered to be logical level 1, as this is first program stored in the main storage. If a ProgramA from level one calls another ProgramB using a LINK command, the ProgramB is said to be in logical level 2 as both ProgramA and ProgramB are stored in main storage. However if ProgramC is called by using the XCTL command from ProgramA, then ProgramC is said to be logical level 1, as the ProgramA is removed from the main storage after loading ProgramC. The options used with LINK and XCTL commands are PROGRAM, COMMAREA and LENGTH. RETURN command is used to pass control from one logical level to the one above it. A RETURN command at level 1 can have the options TRANSID, COMMAREA, and LENGTH, to initiate a new transaction, once the control is passed to the CICS. The RETURN command at all the other logical levels should be issued with no options.

9. How do you handle the '\_' usually set by Initialize option of field macro, after the Receive Map command.

- A. By the COBOL II Inspect verb as: INSPECT <FieldI> REPLACING ALL '\_' BY SPACE.

10. What is purpose of ASSIGN command, explain in brief.

- A. ASSIGN command can be used to determine which extended attributes are supported by the terminal. IBM manual documents more than 60 options. The most commonly used options are COLOR(data-area), HILIGHT(data-area), SCRHNHT(data-area) for screen height, and SCRWNWD(data-area) for screen width. The system returns the one-byte field(data-area), set to High-Value (X'FF') if the terminal supports and a low-value, if not or else the length indicating the screen height or width, based on the option used.

6. CICS and Data Base Handling (DB2 / IMS / VSAM Datasets)

1. What are the important tables used in the CICS-DB2 environment. (51)
  - A. CICS manages its communication with DB2 with special interface modules called CICS/DB2 Attachment Facility. When a CICS program issues a SQL statement, CICS requests the attachment facility to establish a connection with DB2 called a thread. The information about the CICS transaction and DB2 is entered in Resource Control Table (RCT). The plan information is referenced through the RCT Entries.
2. Explain Deadlock.
  - A. A Dead lock is a situation that occurs when two tasks are waiting for a resource that the other is holding. UNLOCK can be used to release the lock created by using the UPDATE option, when it is no more needed to be updated.
3. Can you access a QSAM file on CICS? Describe the various CICS commands used for VSAM handling.
  - A. No, QSAM files can not be accessed by CICS. The various CICS commands used for file handling are READ, WRITE, REWRITE and DELETE. The various options of READ command are DATASET, INTO, RIDFLD, RRN RBA, LENGTH, UPDATE. The Options of WRITE command are DATASET, FROM, RIDFLD, RRN, RBA, and LENGTH. The options of a REWRITE command are DATASET, FROM, and LENGTH. The options of DELETE command are DATASET, RIDFLD and RRN / RBA. UNLOCK command uses DATASET as the only option. RESP option can be used with all the commands to check the system response, similar to HANDLE CONDITION.
4. What types of Files can be used by CICS. Why?
  - A. VSAM, ISAM, and BDAM files on disk can be accessed by CICS, as they are all of random access type.
5. What are the various commands used to browse through a dataset?
  - A. STARTBR, READNEXT, READPREV and RESETBR. The options used are DATASET, RIDFLD, RRN/RBA, GENERIC, and KEYLENGTH for the 3 commands, and INTO, LENGTH for READNEXT and READPREV command, and EQUAL/GTEQ for STARTBR only. RESP can be used with any. ENDBR is used to end the browse operation.
6. Do you have to Handle condition every time to check the status during file handling.
  - A. No. HANDLE CONDITION is to be coded only at the beginning of the program before the first read command. If you need to change the Handle condition after a few reads or write, use PUSH and POP commands accordingly. If needed a few conditions also can be ignored by using the IGNORE CONDITION command coded before the File handling commands. If Ignore Condition is used, EIBRCODE can be used to check the return condition if needed.
7. What are the possible exceptions occurs during the file browsing process.

A. DSIDERR, ENDFILE, ILLOGIC, INVREQ, IOERR, LENGERR, NOTFND and NOTOPEN.

## 8. Explain Path related to Alternative index.

A. CICS allows users to handle VSAM KSDS files with an Alternative Index. A VSAM catalog entry needs called Path, which establishes relationship between the alternate index and it's base cluster, needs to be defined, before one can process the base cluster using an alternative Index. You specify the path name rather than the file name in the Dataset option of the file control commands, when you wish to access the files through Alternative Index.

## 9. Explain DB2 Translation process under CICS - COBOL.

A. During the translation process, the DB2 SQL statements are translated into a form called a Plan, which DB2 can understand immediately. This plan is stored in the DB2 system, with a simple call to the plan left in the COBOL code, during the BIND process. To create a load module with CICS and DB2, the DB2 pre-compilation and translation need to be done, before the CICS translator is run on the CICS-DB2-COBOL program.

COBOL-CICS-DB2 Source Program ---> DB2 Pre-Compiler ---> EXEC SQL statements are commented and replaced by appropriate CALL and MOVE instructions (DB2 Pre-compiled source program) + Database Request Module (DBRM).

The DBRM is used by BIND process to create the PLAN. The DB2 Pre-compiled source listing is processed by CICS translator, which comments the EXEC CICS commands with appropriate CALL and MOVE instructions. The translated source is then Compiled and finally Link-Edited, with other load-modules by including DSNCLI module that provides the interface to CICS-DB2 attachment facility.

## 10. Explain the differences in coding a COBOL-DL/I program and a COBOL-CICS-DL/I program.

A. DLIUIB is copied immediately after DFHCOMMAREA in Linkage Section. A PCB pointer need to be declared immediately, followed by the structure of the PCB. In the Procedure Division, the first reference to the DL/I, should be to Schedule the PSB with a DL/I Call using 'PSB' as the function code, and the last DL/I call is run with 'TERM' as the function code. After the 'PSB' schedule call, SET ADDRESS OF PCB-POINTERS to UIBPCBAL, and SET ADDRESS OF PCB declared in the linkage section to the PCB\_POINTER declared in the Linkage section.

## 11. Explain CICS Run.

A. CICS is to be initiated as a high priority batch job to be run on the OS. During the Initialization process VSAM or sequential files are opened according to entries in FCT, Terminal environment is established based on TCT entries, Resident programs are loaded into memory, if the programs have resident=yes option set, in PCT.

A sample CICS initial batch job is

```
//CICSA JOB 1234,XYZ,CLASS=2 //PROC1 EXEC DFHOLPRD //
```

## 12. Explain Mass insert and GENERIC keywords.

A. The MASSINSERT option is used along with the WRITE command, to inform the system to write a bunch of inter-related records at a time. In order to decrease the I/O s with a better utilization of the VSAM CI 's. The GENERIC option is used on file handling commands, when the length of key field is a subset of the whole key along with the LENGTHKEY option.

13. Can you issue SQL COMMIT from a CICS program?

A. Yes.

14.

15. What is the other way of terminating a transaction?

A. EXEC CICS SYNCPOINT. Assuming it is a LUW. This will not end the transaction.

16. What is an ASRA abend ?

A. Any data exception problem SOC7, SOC4 etc.

17. What is an AEY9 abend ?

A. DB2/IDMS Database is not up.

18. What are the situations under which NEWCOPY is required ?

A. When a program has been used in CICS atleast once and then changed and recompiled.

19. What is 2 phase commit? Confirm the answer.

A. It occurs when a programmer Issue's an Exec CICS Syncpoint command. This is called a two phase Commit because CICS will first commit changes to the resources under its control like VSAM files, before DB2 changes are committed. Usually CICS signals DB2 to complete the next phase and release all the locks.

20. What is an AICA abend?

A. Runaway Task.

21. How would you resolve an ASRA abend?

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

22. How do you rollback data written to an ESDS file?

A. Define the file as recoverable. in cases where records have been inserted into the file, you may need to run a batch program to logically delete the inserted records.

23. I have done a STARTBR on a VSAM dataset. Can I do another START BR without doing an ENDBR ?

A. No.

24. When an XCTL is done, does the trans-id change? Is a new task created? Does it cause implicit SYNCPOINT to be issued ?

A. No. No. Yes.

## 25. What is the DSNB transaction used for ?

DSNB is a CICS Abend Code, which specifies that there is a problem in the CICS/DB2 attachment facility. The CLOTCTRL field in the LOT control block contains a hexadecimal describing the abend code, such as no threads...

## Temporary Storage and Transient Data Queue's

### 1. What are the differences between TSQ and a TDQ? (75)

A. (1) In Temporary Storage Queues Data is read randomly, While in Transient Data Queues data must be read sequentially. (2) In a TSQ data can be read any number of times as it remains in the queue until the entire Queue is deleted. In TDQ data item can be read once only. To reuse the TDQ it must be closed and reopened. (3) Data can be changed in TSQ, but not in TDQ. (4) TSQ can be written to Auxiliary or Main Storage, while TDQ is written to Disk. Temporary storage is a holding place, while Transient data is always associated with destination. The (5) TSQ name is defined dynamically, while a TDQ name need to be defined in the DCT. Note: An application uses TSQ 's to pass info' from task to task, while a TDQ to accumulate records before processing or send data for external use, such as a print operation or other.

### 2. Explain the commands used for handling Temporary Storage queues under CICS, with their options.

A. The WRITEQ TS command is used to Write data into a TSQ. The Options used are QUEUE(name), FROM(d-area) , LENGTH(value), ITEM(item-value), REWRITE and Main/Auxiliary. The last three are optional. The Item value field is to be defined as S9(4) comp. The READQ TS is used to read the TSQ, its options are QUEUE(name), INTO(data area) ,Length(value), ITEM(item-value)/ NEXT. The Item-value is the number of the TS Record in Q'.

### 3. If I create a TSQ from one transaction, can I read it from another transaction?

A Yes. As long as they run in the same region.

### 4. Do you require a table entry for a TSQ? Is there any entry for TSQs in CICS tables?

A. If recovery for the TSQ, is needed. It's entered in TST (Temporary Storage table). Yes in the DFHTST.

### 5. I have TSQ with 15 items. I want to delete the 10th item. How do I do that?

A. By using the ITEM(10) option with DELETE TS command.

### 6. What is meant by an Indirect destination?

A. An indirect Destination lets a single TDQ be identified by more than one destination Id. The DCT entry for an indirect destination simply specifies the name of the destination defined elsewhere in it. TYPE=INDIRECT option is used during the DCT entry. Ex. DFHDCT TYPE=INTRA, DESTID=L86P, TRANSID=PRTA, TRIGLVL=1 (results in initiating the PRTA transaction after every single entry into

TDQ). Ex2. DFHDCT TYPE=INDIRECT, DESTID=PRT1,INDDEST=L86P. The advantage of indirect destinations is to use them when you have to change the destination Id frequently, there is no need for change and compilation of every program associated with it.

#### 7. Why do use DELETEQ TD command, even though the TDQ is read destructive?

- A. Depending on the DCT entry for the destination, the disk space occupied by that record may still be reserved, even though the records are not available. So in order to reclaim this space DELETEQ TD command is used.

#### 8. How do you reserve Destinations for Exclusive use under the CICS?

- A. CICS does not automatically ensure that only one task writes records to a destination at one time. To control this, CICS provides ENQ and DEQ Task control commands used to make resources serially reusable. ENQ command is specified with RESOURCE (data-area/ DESTID) and LENGTH options to reserve the resource. DEQ is used to release the resource. Even, If the DEQ command is not issued, at the End of the task, the resources are released.

#### 9. What are extra partition & intra partition TDQs?

- A. Extra-partition TDQ's are datasets used for communication between CICS and other CICS/Batch regions. Intra-partition TDQ's are queues for communication within CICS region. CICS stores the Intra-partition TDQ in a dataset 'DFHNTRA' on the Disk. Extra-partition TDQ doesn't have to be a disk file, it can reside on any device that's a valid QSAM/VSAM. The DCT entry contains the destination-Id, type of TDQ, Destination, Trigger level if needed

#### 10. How do you fire a batch job from a CICS transaction ?

- A. Define an extra-partition TDQ as an internal reader and write the JCL to it. Terminate the JCL with /\*EOF.

#### 11. What is ATI? What kind of TDQ can be used? What is trigger level in the context of TDQs?

- A. ATI is an acronym for Automatic Task Initiation. It's used only with Intra partition TDQ 's by specifying the number of records at which ATI occurs is called the trigger level. Not applicable for extra partition TDQ's.

### Storage Control

#### 1. How do you access Linkage areas in CICS. (Especially while using the OS/VS COBOL.) (86)

- A. The CWA, CSA, TWA, TCTUA are accessed by using the BLL-Cells defined in Linkage area and the ADDRESS command. Ex. EXEC CICS ADDRESS CWA(BLL-CWA) END-EXEC. SERVICE RELOAD BLL-CWA. Under COBOL II BLL Cells needn't be used. Ex. Exec CICS ADDRESS CWA (Address of Comm-area) End-exec.

#### 2. Where Does CICS receive information to store the values of Execution Interface Block (DFHEIBLK)?

- A. EIB is a selection of information found in various CICS control Blocks. These control blocks are small areas of main memory that CICS/VS uses to control its own operations. Some control blocks stand by themselves (CSA, CWA), Some are associated with terminals (TCTUA), Some are associated with Tasks (PROGA - TCA, TWA).

### 3. Explain the Various control blocks used by CICS in general.

CSA - Common System Area. There is exactly one CSA in memory at any given time, It records which task it is executing and generally, the state of the system as a whole. CWA - Common Work Area, is an extension of CSA, individual installations define its own way to use CSA, normally it contains security tables and other global data. TCTUA - Terminal Control Table User Area is created for each terminal. This installation defined control block contains the user's security level as user-id, and other info to keep running one task to the next. TCA - Task control Area. For every task running in the system, there is one TCA with information, such as running a Program and whether or not a terminal is connected to the program, i.e. about the execution environment. TWA - Task work area is an extension to TCA, used by program to record data associated with the task. TWA is used by System utilities for inter-program communication within a task.

### 4. Where do you code the CICS Control blocks in VS/CBL programs? How are control blocks accessed?

- A. The Control blocks which are to be accessed are to be defined in the Linkage section of the COBOL program. To access the control blocks, their addresses are to be established, which involves two steps: Find out where the block of storage is located in memory (as CICS knows but not your program) and associate it with control block item defined in the linkage section. The CICS command to initiate the loading of the address of control block is ADDRESS. Ex. EXEC CICS ADDRESS TCTUA(Terminal-BLL-Pointer) END-EXEC. The Terminal-BLL-pointer needs to be defined as S9(8) COMP field, after DFHEIBLK, & DFHCOMMAREA and just before the Block Item definition in the Linkage section. The order of Address-list should match the order of Block definitions.

### 5. How is dynamic memory allocated within a CICS application program?

- A. Use GETMAIN command. Define a BLL-pointer and define a data block in Linkage section (as for control block). However if the Address space needed for dynamic allocation is more than 4 KB, a second Address locator (BLL) is to be defined, and is assigned the value based on the first address received by using the GETMAIN command. EXEC CICS GETMAIN SET(ADDRESS OF ls-area) LENGTH(nnn) INITIMG(HEX-00) END-EXEC. Where ls-area is product recordname, and HEX-00 is 1-byte init value.

### 6. What command is used to release the memory allocated for the program by the GETMAIN command?

- A. FREEMAIN command with the name of the block.

7.

8.

9. How do the COBOL program knows, when any entries are changed in the address list?

- A. Whenever an entry is changed in the address list, you need to inform the program by using the SERVICE RELOAD statement, so that it can update its internal registry pointers, if not informed unpredictable results arise. The Service Reload statement immediately follows the statement that changes an address list item. Many programmers code the first line as the SERVICE RELOAD ADDRESS-LIST end-exec.

10. How do you handle the Addressing of the Control blocks in CICS by using COBOL II? Compare to VS/COBOL.

- A. There is no longer a need to define the Address list before the Control Block definitions in Linkage section, The addressing is entirely handled by CICS. The Length command need not be defined, as CICS checks the data item defined for it. The SERVICE RELOAD statement is no longer required as each time the address variables change the internal register automatically get updated.

11. Explain the Purpose of the CICS Transactions in addition to the information for earlier Q.

- A. CEMT is used by operator to control CICS by Open or Close files, Control tuning parameters, Diagnose terminal problems (is it available for use), disable or enable transactions, Shut the CICS down.

12. What is the transaction used to Print.

- A. PRNT. It's usually used to print contents of the TDQ's.

13. How many type of Destinations can be defined in the DCT? What are they?

- A. Four. They are Intra-partition (I/O within CICS system), Extra-partition (for I/O outside CICS region), Indirect, and Remote. The external dataset defined through DCT can not be a VSAM file as TD can only use sequential files. Note that only Intra-partition TDQ 's can be deleted.

14. Write about CSPG. Give a List of Transactions ID 's provided by IBM for CICS system.

- A. CSPG is an IBM supplied transaction code used to browse, delete and manipulate pages built by PAGING operand. CEMT, CECI, CEBR, CECA, CECS, CEDA, CEDB, CEDC and CEDF, PRNT, MAPS.

15. Can you use DYNAMIC calls in CICS ?

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

16. Suppose program A passes 30 bytes to program B through commarea and program B has defined its DFHCOMMAREA to be 50 bytes. Is there a problem?

- A. Yes, if B tries to access bytes 31-50.

17.

18. What is the difference between START and XCTL ?

- A. START is used to start a new task. It is a interval control command. XCTL is used to pass control to a program within the same task. It is a program control command.

19. What is the usage of language in the PPT entry?

A. Language interface and call parameters???

20. Can you have CICS code in a copybook? If yes, what happens during compilation?

A. Yes. Needs to be preprocessed.

21. I invoke a transaction from CICS. The program has a code: MOVE DFHCOMMAREA TO WS-AREA. What happens to this transaction? What happens to the other transactions?

A. Junk may get moved in. Will cause Storage violation. ????

22. How do you handle errors in CICS programs ?

A. Check EIBRESP after the call or use the HANDLE condition.

23. What are the 3 common ways to create maps?

A. 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 &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).

24. What is Quasi-reentrancy?

A. There are times when many users are concurrently using the same program, this is what we call Multi-Threading. 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.

25. How do you remove the unwanted characters as input under the CICS environment?

A. The CICS Built-in function BIF DEEDIT is used. It is most often used for numeric editing. It can be used to remove the special characters as commas, minus... Ex. for the resulting field to be right justified, and high order positions to be filled with '0' use EXEC CICS BIF DEEDIT  
FIELD(ws-data) LENGTH(nnn)  
END-EXEC.

26.

27.

28. How do I find the name of the CICS region inside my COBOL program?

A.

29. What are the restrictions while using GETMAIN and FREEMAIN?

A.

## Terminal Control, Interval Control and Task Control

### 1. Can you send a Simple message on to the terminal without defining / using any Maps? (110)

- A. Yes, By using the SEND TEXT command with FROM(data-area), LENGTH(value), ERASE and FREEKB options, as needed. FREEKB option specifies the keyboard to be unlocked, If not specified press the RESET key.

### 2. What is the purpose of ACCUM option in the Send Map command. Explain in detail.

- A. If say three maps have to be sent to the terminal (1st with title common to all, Last with messages common to all and the middle one, the map with info' pertaining to the program.) The if we use the ACCUM option with the SEND MAP, the system accumulate the maps into a Page Buffer. By using SEND PAGE, all the maps can be sent together as a single map, which decrease the I/O time between the system terminal and the CICS system.

### 3. How are the HEADER and TRAILER options of DFHMDI are used?

- A. When a MAP is sent with HEADER=YES as an operand, previous pages are erased. A page always "reserves" enough space to hold the largest TRAILER=YES map. Define the 1st map with header=yes with Justify=First and last map with trailer=yes with justify=last and the all the other's in between with justify=next. This type of Map Definition Initial will helps to control overflow by using the HANDLE CONDITION OVERFLOW command.

### 4. Write about Paging.

- A. PAGING operand is used with SEND MAP to accumulated pages and send them to temporary storage for later use.

### 5. What are the basic Terminal control commands under CICS?

EXEC CICS SEND FROM(data) ERASE END-EXEC, and EXEC CICS RECEIVE INTO(data) LENGTH(length) RESP(data) END-EXEC.

### 6. What is the use of the RETRIEVE command in CICS?

RETRIEVE is used to retrieve data passed to a transaction by using the START command. It has the options as INTO, LENGTH, RTRANSID, RTERMID and QUEUE, which are used to receive respective data sent by START.

The CANCEL command can be used to Cancel a START request by using the REQID option.

### 7. When you do a START, what will the value of EIBCALEN?

- A. Zero.

### 8. What are various Interval Control Commands used under CICS?

- A. ASKTIME, FORMATTIME with the ABSTIME (data-area. S9(15)) option are the two widely used CICS commands to determine the system data and time in various formats.

#### 9. Explain the Interval control Command START.

- A. The Automatic Time Ordered Transaction Initiation (ATI) is done by using the START command. Similar to Automatic Data-Driven Transaction Initiation done by using the DCT entries. The START command has various options as TRANSID('name'), INTERVAL(hhmmss, S9(7)comp3), TIME(hhmmss, S9(7)comp3), AFTER, AT, HOURS(nnn,s9(8)comp), MINUTES(nnn,s9(8)comp), SECONDS(nnn,s9(8)comp), TERMID('tttt'), FROM(data-value), LENGTH(s9(4) comp), RTERMID(XXXX), RTRANSID(XXXX), QUEUE(XXXXXXXX) (x-are passed to task), REQID(a 8 byte value to cancel). Frequently the TRANSID, TERMID and a Interval option as time are used.

#### 10. What is the use of the Task Control command, SUSPEND in CICS?

- A. The SUSPEND command is used with no options to suspend the current task, by sending it to the end of the Task queue, controlled by the Dispatcher. Normally an application gives up control whenever it issues a CICS command. In the mean time before the task is re-initiated the Dispatcher gives control to another task and so on. This allows many tasks to be operating at once, though only one of them only is really being executed by the system. For most CICS application programs needs very short CPU time utilization requirement before it executes the CICS command. However for very few of them needs a long stretch of CPU time, which could be suspended when it is taking long CPU time, to give control to dispatcher, which prioritizes and executes other tasks of high priority.

#### 11. Explain the LOAD command.

- A. It's used to retrieve and load an object program from Disk into Memory. It's used to handle large static tables. It could use a number of pointers for each 4096K size of data. It's a storage control command such as GETMAIN.

#### 12. What are the Recovery Processing Commands used in CICS?

- A. SYNCPOINT and ROLLBACK, which are used to commit or back out all the changes made during the Current LUW.

13.

14.

15.

#### 16. Identify the use of ABEND. List a few common abend codes.

- A. When CICS is unable to execute a command, it generates an AB-normal task ENDing. When an Abend occurs, CICS issues a 4-char Abend code. This Abend code is sent to terminal running the task and is attached to the Abend dump created by using the Contents in Memory for that task by CICS. The common CICS Abend codes are ASRA- System runtime error(Division by 0, subscript over run ...), ABMO-BMS map not in Mapset, APCT-Call for nonexistent pgm, AExx-Exceptional conditions encountered during the run (AEIN-Duplicate records, AEIT-eof).

#### 17. Explain, How the Abends can be handled from a CICS program.

- A. The HANDLE ABEND command is used to trap and Handle errors. It has 4 possible options and only one of them can be used with this command at a time. The options are Program(...) to transfer control to the program, Label(...) to transfer control to the specified paragraph, Cancel option keeps the earlier Handle Abends from being executed. Reset option will reactivate the Handle Abend commands, which were previously cancelled.

### 18. Explain ABEND command and it's use. How do you read a dump?

A. Abends can also be caused by ABEND commands in addition to the programs, used to get the system Memory Dumped. The system memory contains the address of the command, which caused the dump, the contents of program variables, and list of other processes being executed by the system. The CICS Dump dataset, created during the Abend could be printed by using the DFHDUP utility.

1st step while reading a dump is to find out the program that caused the Abend. The Relative Address of a command equals to Absolute address - Load address of the module. Actually the Abend Dump will not tell the command which caused the Abend, but the absolute address of the next command which would have been executed, if there is no abend. As your program contains CICS commands, the Link Editor adds an extra control section or CSECT to the front of the program. The Load address given is for CSECT and not the program itself. So Actual program load address = program load address from dump + length of DFHECI.

The beginning of the CICS Dump for a task is identified by Abend Code and task name. You can find the PSW, and the register content immediately after the task name. Now search for 'Program Storage', and make a note of the Program Load address.

Now search for 'Control Section' under this task, to determine the (CSECT) DFHECI length. Add the last two addresses to determine the actual load module address. The Second word of the PSW always contains the next instruction to be executed, so a make a note of it.

Now calculate the Relative address of the Next instruction to be executed before abend by subtraction. Now exit the dump and view the condensed compiler listing of the program, which shows the addresses and line numbers of all Cobol commands, which can be executed. Use this information to determine the command that caused the Abend.

### 19. Explain Dynamic Transaction Backout and Emergency Restart? (125)

- A. When a Transaction terminates abnormally, CICS invoke DTB program that processes the before-images stored in Dynamic Log of the transaction to reverse any changes made to the protected resources. After DTB come to end, it is as if the transaction was never started. Emergency Restart is a procedure used to restart the CICS when it terminates abnormally. First, recovery control processes the system log, which contains a record of every update made during the previous CICS execution. Recovery control reads the system log backwards, determining which updates were made by in-flight tasks (- tasks that were active when the uncontrolled shutdown occurred). Each updated that was made by an in-flight task is copied to the restart dataset, which is then processed by the Transaction Backout program similar to DTB, for restoring the protected resources. The difference is that the transaction backout program updates made by many tasks, while DTB restores updates made by only one task.

**Question: what is difference between call and link ?**

Answer: 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: what are the differences between dfhcommarea and tsq ?**

Answer: 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 qid is known can be accessed by other transactions also 2. commarea length is s9(4) comp ie 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 tranfer data from one task to another while tsq is used widely within the task as a scratch pad.

**Question: What is Communication Area?**

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

**Question: Which of the following statements correctly describe the syntax of CICS command language?**

- A) If an EXEC CICS command must be continued onto a second line a hyphen (-) must be coded in column 7 of the continued line.
- B) If an EXEC CICS command must be continued onto a second line an 'X' must be coded in column 72 of each line to be continued.
- C) An EXEC CICS command CANNOT be coded within a COBOL IF statement,between the IF command and the period (.) ending it.
- D) The END-EXEC delimiter is optional and never needs to be placed at the end of a CICS command.
- E) The options specified within an EXEC CICS command can be in any order. For example 'EXEC CICS SEND FROM(MSG1) LENGTH(30) END-EXEC' can also be coded 'EXEC CICS SEND LENGTH(30) FROM(MSG1) END-EXEC'

Answer: E) The options specified within an EXEC CICS command can be in any order. For example 'EXEC CICS SEND FROM(MSG1) LENGTH(30) END-EXEC' can also be coded 'EXEC CICS SEND LENGTH(30) FROM(MSG1) END-EXEC'

**Question: A CICS program ABENDS with an ASRA ABEND code. What is its meaning?**

- A) A link 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 0C1 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

Answer: D) A program interrupt (0C0 or 0C1 or 0C2 or ...) has occurred in a CICS program.

Question: Which of the following commands, when issued by 2 different programs running at the same time, will prevent simultaneous use of resource 'SINGLE'?

- B) EXEC CICS PROTECT RESOURCE('SINGLE') LENGTH(6) END-EXEC.
- C) EXEC CICS HOLD RESOURCE('SINGLE') LENGTH(6) END-EXEC.
- D) EXEC CICS TASK SINGLE('SINGLE') LENGTH(6) END-EXEC.
- F) EXEC CICS EXCLUSIVE RESOURCE('SINGLE') LENGTH(6) END-EXEC.

Answer: E) EXEC CICS EXCLUSIVE RESOURCE('SINGLE') LENGTH(6) END-EXEC

Question: 1.The map shown below is displayed with: EXEC CICS SEND MAP('MAP1') MAPSET('MAP1S') MAPONLY END-EXEC.After the screen is displayed, the operator enters 1 character, the letter 'X'.Where will the cursor now appear on the screen?MAP1S DFHMDS TYPE=MAP,MODE=INOUT,CTRL=(FREEKB,FRSET),LANG=COBOL, X TIOAPFX=YESMAP1 DFHMDSI SIZE=(24,80) DFHMDF POS=(5,1),ATTRB=UNPROT,LENGTH=1FIELD2 DFHMDF POS=(5,3),ATTRB=UNPROT,LENGTH=1FIELD3 DFHMDF

POS=(5,5),ATTRB=(UNPROT,IC),LENGTH=1FIELD4  
POS=(5,7),ATTRB=ASKIP,LENGTH=1FIELD5  
POS=(5,9),ATTRB=UNPROT,LENGTH=1,INITIAL='Z'  
POS=(5,11),ATTRB=ASKIP,LENGTH=1 DFHMSD TYPE=FINAL

DFHMDF  
DFHMDF  
DFHMDF

- A) In the field with a POS=(5,1)
- B) In FIELD2.
- C) In FIELD3.
- D) In FIELD4.
- E) In FIELD5.

**Question: How can you accomplish braykpoint in interest?**

Answer: U-for unconditional braykpoint, C-for condishional braykpoint,and A-for automatic braykpoint

**Question: how many ways are there for initiating a transaction?what are they?**

Answer: 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: which type of TDQ is read destructive?**

Answer: intrapartition tdq is read destructive. extrapartition tdq is not read destrctive.

**Question: The error code aeiv?**

Answer: this is the error code for length,if length of the source data is more than the receiving field,this error will occur.this is the correct answer,previously i mentioned it as program id error.sorry for the wrong information.

**Question: WHAT U MEAN BY AEIV ?**

Answer: THIS IS THE ERROR CODE GIVEN BY THE SYSTEM ,IT MEANS PROGRAM ID ERROR.

**Question: WHAT IS THE SIZE OF COMMAREA**

Answer: THE DEFAULT COMMAREA SIZE IS 64K.

**Question: What is ASRAABEND in CICS?**

Answer: It occurs when program interuption takes place.e.g.: when alphanumeric string moved to numeric data itemOR when arithmetic calculations performed on nonnumeric data itemOR when an attempt made to read an occurance of a table beyond the defind occurances.ISN'T IT?

**Question: Very important question:What is a two Phase commit in CICS?**

Answer: 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 signals Db2 to complete the next phase and release all the locks.

**Question: difference between TSQ & TDQ**

Answer: 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 an entry in the Temporary Storage Table), TDQ is not. Hope this will suffice

**Question: What is ENQ in CICS?**

Answer: If any one wants 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: In SYMBOLIC Cursor Positioning after moving -1 to the length field also the cursor is not positioned in that particular field. Give reasons?**

Answer: You have to explicitly specify the word CURSOR between your EXEC CICS and END-EXEC in the program.

**Question: What does EIB mean?**

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

**Question: How many exceptional conditions can be given in a HANDLE CONDITION?**

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

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

Answer: READQ TD, the read is destructive. Yes it is correct but there is a restriction. You can delete the records sequentially. For example if one wants to delete 10th record directly it is not possible with this. Answer: READQ TD, the read is destructive. Yes it is correct but there is a restriction. You can delete the records sequentially. For example if one wants to delete 10th record directly it is not possible with this.

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

Answer: By specifying the ITEM option

**Question: What command do you issue to delete a record in a transient data queue ? Answer: READQ TD, the read is destructive.**

**Question: WHAT ARE DIFFERENT WAYS OF INITIATING TRANSACTION IN CICS**

Answer: WE CAN INITIATE CICS TRANSACTION a) BY GIVING TRANSACTION ID b) BY GIVING CICS START COMMAND c) AUTOMATIC TASK INITIATION. STIPRESSING PF KEY

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

Answer: 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: What is the difference between CICS Program Control Table (PCT) and CICS Processing Program Table (PPT) ?**

Answer: 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: What are the 3 common ways to create maps?**

Answer: 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 &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)

**Question: What is Quasi-reentrancy?**

Answer: 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: What is the difference between a physical BMS mapset and a logical BMS mapset?**

Answer: 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: How To Set MDT(Modified Data Tag) Thru Application Program?(Dynamically).**

Answer: You have to move the following macro DFHBMFSE to the Attribute field of that particular Variable.

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

Answer: COMMONAREA, TSQ & TDQ.

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

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

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

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

**Question: What is the difference between a RETURN with TRANSID and XCTL ?For example prog. A is issuing REUTRN with TRANSID to prog B. Prog A. is issuing XCTL to prog B.**

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

**Question: What is the maximum number of exceptions that can be specified with a single HANDLE CONDITION command in CICS ?**

Answer: SIXTEEN (16)

**Question: WHAT WILL BE THE LENGTH OF THE EIBCALEN ,IF THE TRANSACTION IS USED TO CICS FIRST TIME?**

Answer: THE LENGTH WILL BE 0(ZERO).

**Question: WHAT IS DFHEIBLK?**

Answer: 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: What is the difference between the XCTL and LINK commands?**

Answer: The LINK command anticipates return of control to the calling program, theXCTL 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: What CICS command would you use to read a VSAM KSDS sequentially in ascending order?**

Answer: 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 positioning in the file will be before the first record satisfying the generic key.For reading in descending order use the READPREV instead ofREADNEXT.

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

Answer: Pseudo-conversational will start a new task for each input. By coding a CICS RETURN command specifying TRANSID(itself). Conversational will have an active task during the duration of the data entry.

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

Answer: 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.

**1. Which of the following does multithreading allow?**

A. several transactions that require the same program to use one copy of the program. B. many tasks to be allocated to the terminal. C. an audit trail of all files records from all files updated by a particular application

**2. Under CICS, multitasking achieved by what method?**

A. virtual paging. B. task switching. C. priority numbering, D. pseudo conversational

**3. What are programs that are reusable to each task and restarted by each task said to be?**

A. Command-Level. B. Transaction Dependent. C. Prioritized. D. Quasi-Reentrant.

**4. What three control programs execute in a task?**

A. File Control/Temp Storage Control/Trace Control. B. Task Control/Interval Control/BMS Control. C. Terminal Control/Task Control/Program Control. D. Journal Control/Dump Control/Storage Control

**5. Which are the correct ways to initiate CICS tasks?**

A. Automatic Task Initiation/Exec CICS Start. B. CALL Statement/Receivable Map/Send Map. C. Permanent Transaction ID/Temporary Transaction ID. D. PA Key/XCTL Statement/Interval Control Transaction ID

**6. A CICS Cobol program must first be \_\_\_\_\_ before compiled.**

A. linked to CICS tables. B. new copied. C. loaded to CICS object table. D. translated.

7. Online files must have an entry in the:

A. resource control table. B. vsam master catalog. C. file control table. D. file initialization table.

8. For data fields that should not be entered or cleared you can use what characteristic?

A. Unprotected. B. Normal. C. Initial Value. D. Autoskip.

9. The cursor can be controlled by using a special one byte field called:

A. stopper field. B. jump field. C. shift field. D. tag field.

10. Name the types of maps used in CICS:

A. BMS Map/Mapset. B. Offline Map/Online Map. C. Physical Map/Symbolic map. D. Symbolic Map/Temp Map.

11. BMS uses \_\_\_\_\_ to load the appropriate physical map into main storage.

A. load library. B. program control. C. mapset. D. temp storage.

12. With BMS, two (2) major application benefits are given to the programmer. They are:

A. Physical Map/Assembler Macro. B. Symbolic Maps/Mapsets. C. Device and Data independence. D. Mapsets/Coding Rules.

13. Which answer describes a rule for coding a BMS Macro?

A. Label is from one (1) to seven (7) characters long with the first character being alphabetic. B. Getmain command should be coded first. C. Op-code is separated from the label by an asterisk. D. Operands start in column 20 separated by commas.

14. The second BMS macro (OP Code DFHMDI) has which function?

A. Specifies length of the field. B. Defines a field with a map and its position. C. States purpose of field - Input, Output or both. D. Contains size parameters of Map.

15. If the program uses other keys besides "enter" to control logic, a copy of \_\_\_\_\_ should be used in working storage of program.

A. ebaid. B. dfhaid. C. dfhbmsca. D. dfheivar.

16. Which two entries are usually found in the linkage section?

A. Execute Interface Block/Transaction Work Area. B. Symbolic Maps/DFATTRBS. C. DFHEIV11 / Communication Area. D. Dfhcommarea/Execute Interfaced Block.

**Tentative answer key:** 1. A 2. D 3. D 4. C 5. D 6. D 7. C 8. D 9. A 10. C 11. B 12. C 13. A 14. D 15. B 16. D.

17. Which of the following fields will be found with the execute interface block?

A. Attr-prot/Attr-unprot/Attr-Prot-askip. B. Eibtrandid/Eibtramid/Eitbaid/. C. Eibposn/Eibmapnm/Eibfilnm. D. Dfheiv0/Dfheiv99/Dfhnull.

18. When coding linkage pointers, what is it important to ensure?

A. that Symbolic storage is never over 4096K. B. that the structure is packed decimal. C. that the size pointer is equal to the symbolic map size. D. that each pointer appears in the same sequence as the 01 level entry it refers to.

**19. Which of the following CICS Tables utilizes trans IDs?**

A. TCT. B. PCT. C. RCT. D. PPT.

**20. Which of the following terminates a task in true pseudo-conversational fashion?**

A. Erase. B. Suspend. C. End-Exec. D. Return.

**21. Which of the following is acquired for a program before it executes a task?**

A. Transaction Word Area. B. Dfhcommarea. C. Communication Area. D. Map Area.

**22. What does the Handle Aid command do?**

A. It specifies terminal keys and/or other attention identifiers with corresponding routines for execution. B. It automatically tries to correct error storage abends. C. It identifies status codes on file reads to determine error messages. D. It sets all PF-keys to ANSI standards where pre-processing proceeds to generate logic for routines necessary.

**23. Which of the following best describes the Handle condition?**

A. method of detecting an error condition and then branching to logic in a program to handle the error. B. used to determine whether to release resources and save starting point. C. automatically determines that an inputted field is to be updated. D. terminates session based upon stated return-codes.

**24. Which of the following is only true of the fields with modified data tag "On"?**

A. They can be modified. B. They are made available for upgrade, regardless of map name and fset usage. C. They will be transferred to the symbolic map on a receive command. D. They may be used on a send command.

**25. Which of the following describes a way of setting the Modified Data Tag (MDT) on?**

A. Attributes may be changed by the programmer to include the fset attribute. B. Attributes can be set to fset via passing them to call program "DFHFSET" prior to sending map. C. Specify FSET as one of the attributes when coding the BMS macro map definition. D. Moving fields necessary to "Fset" type symbolic map. E. Either a or c.

**26. Why are maps grouped into mapsets?**

A. to load all related maps into main storage for quick retrieval. B. to document maps within a process or application. C. to identify all application maps in the order in which they will appear. D. to allow map-names to be duplicated in different applications

**27. Debug or debug translation options are utilized by what facility?**

A. Time Sharing Option (TSO). B. Linkage Editor. C. Information Efficiency Facility (IEF). D. Execute Diagnostic Facility (EDF).

**28. What action will the translation option "Seq" cause?**

A. sequencing the source statements. B. flagging all statements that are not in sequence. C. The priority order of terminals will be the function of resource utilization. D. Telling CICS that the program will re-sequence map

execution in order of program usage, not mapset order.

29. What type of abend is issued by the system if a receive map is executed when no map has been displayed?

A. Record not found. B. Map not found/Map failure. C. Duplicate record. D. Invalid attention identifier used. E. Initialization Queue error condition.

30. When the dataonly operand on sending a map is used, which item below would be left out of the SEND command?

A. Map. B. Erase. C. Delete. D. Set-on. E. Cursor.

31. What is the purpose of issuing eraseup?

A. to erase unchanged user entered fields and set modified data tags to "on". B. to set the values of all non-protected fields to null. C. to automatically erase all successfully updated fields and set modified data tags and fset to "off". D. to erase all updated fields and reset map prior to change.

32. Which of the following is true about online files?

A. Definition of files resides in the File Control Table which determines what action are allowed. B. Such files are used by many transactions at different times. C. Files that are needed by all applications may be opened when CICS is initialized and closed when CICS is terminated. D. Programs that open and close online files require special CICS macros. E. All of the above.

**Tentative answer key:** 17. C 18, D 19. B 20. D 21. B 22. A 23, A 24. C 25. E 26. A 27. D 28 D? 29. B 30. B 31. C 32.

33. Which of the following are uses of the Getmain command?

A. adding a record to the file. B. writing out a journal record. C. obtaining new temp storage. D. manipulating fields defined in the Linking Area. E. all of the above

34. Which of the following is the correct syntax for reading a record from a temporary storage queue?

A. Read TSQ. B. ReadTSQ. C. ReadQue TS. D. ReadQ TS.

35. The readnext command is performed in which case?

A. sequential read/update. B. Vsam ESDS file access. C. Dynamic searches. D. After a browse is started.

36. On which type of file would you use readprev?

A. Vsam. B. Qsam. C. IMS. D. Bdam.

37. Which of the following are the two (2) commands needed to release exclusive control from a record or block?

A. Freemain/Erase. B. Delete/syncpoint. C. Unlock/Rewrite. D. Rollback/Release. E. Return/Suspend.

38. Which of the following is a function of syncpoint?

A. to clear out buffers and temp storage. B. to clear out buffers and physically write records to file. C. to reset all Key-Sequence files to current key in use at syncpoint declare. D. to backout all transactions from buffers upon no

update decision.

**39.** Which of the following best defines the action of a suspend command?

A. takes a current task out of service and places it in the Wait queue. B. cancels a transaction dump of transient storage data. C. deactivates the debugging activities in process. D. cancels and restarts program execution.

**40.** Which of the following are the four basic areas affected by CICS commands?

A. Terminal I-O/Temporary Storage/File Control/Program Control. B. CEMT/Resource Control/Task Control/Terminal I-O. C. Process Control/Program Control/Address Pointers/BMS. D. Suspend/Getmain/Reads/Writes

**41.** The release command will delete from main storage any mapset table and program previously obtained through which of the following?

A. XCTL. B. Link. C. Return. D. Load.

**42.** The XCTL command transfers control from one program to another at the same:

A. storage address. B. logical level. C. higher level. D. lower level.

**43.** Into where can the load command load a program from the library?

A. transient storage. B. communications area. C. main storage. D. symbolic map

**44.** The link command can call another program at the next \_\_\_\_\_ and regains control when the last program issues a:

A. lower send map; link. B. Lower logical level; return. C. Higher logical level; freemain. D. issued transaction ID; load.

**45.** For what is the CESN transaction primarily utilized?

A. system security. B. closing files. C. application library controls. D. debugging

**46.** Which of the following is an example of correct usage of the CEMT transaction?

A. Security control. B. Debugging. C. Terminal information and controls. Temporary storage allocations

**47.** How does a program gain access to the TWA?

A. reading a dataset. B. the Address Command. C. the Exec-CICS statement. D. calling program 'DFHEI1'.

**48.** For what is the CEDF transaction used?

A. task management. B. files and DASD control. C. CICS data facility manager. D. Debugging programs.

**Tentative answer key:** 1. A 2. D 3. D 4. C 5. D 6. D 7. C 8. D 9. A 10. C 11. B 12. C 13. A 14. D 15. B 16. D 17. C 18. D 19. B 20. D 21. B 22. A 23. A 24. C 25. E 26. A 27. D 28 D? 29. B 30. B 31. C 32. E 33. C 34. D 35. D 36. A 37. C 38. B 39. A 40. A 41. D 42. B 43. C 44. B 45. A 46. C 47. B 48. D.

**Q1.** Name some of the common tables in CICS and their usage.

**A1. 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, enabled/disabled); **TCT Terminal Control Table** - a list of the terminals known to CICS.

**Q2. Name some common CICS service programs and explain their usage.**

**A2. Terminal Control, File Control, Task Control, Storage Control, etc.** Each CICS services program controls the usage and status for its resource (file, terminal, etc) within the CICS region.

**Q3. What is meant by a CICS task?**

**A3.** A CICS task exists from the time the operator presses the enter key until the application program returns control to CICS.

**Q4. What is meant by program reentrance?**

**A4.** A program is considered **reentrant** if more than one task can execute the code without interfering with the other tasks' execution.

**Q5. What is the common systems area (CSA)?**

**A5.** 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.

**Q6. What is the COMMAREA(communications area)?**

**A6.** This is the area of main storage designed to let programs or tasks communicate with one another, used in programs via **RETURN, XCTL** and **LINK** commands.

**Q7. What is the EIB (execute interface block)?**

**A7.** 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.

**Q8. What is an mdt (modified data tag) - it's meaning and use?**

**A8.** 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.

**Q9. What is a transid and explain the system transid CEMT.**

**A9. 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.

**Q10. What is the common work area (CWA)?**

**A10.** The **common work area** is a storage area that can be accessed by any task in a CICS system.

**Q11. How do you access storage outside your CICS program?**

**A11.** In COBOL storage was accessed via BLL cells 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.

**Q12.** How does COBOL II and CICS release 1.7 provide for exceptional conditions and how does that differ from VS COBOL and earlier CICS releases?

**A12.** VS COBOL used the **HANDLE CONDITION** command to name routines to pass program control when exceptional conditions were encountered. COBOL II and CICS release 1.7 introduced the **RESP** option on many CICS commands.

**Q13.** What is the meaning and use of the **EIBAID** field?

**A13.** **EIBAID** is a key field in the **execute interface block**; it indicates which attention key the user pressed to initiate the task.

**Q14.** How do you control cursor positioning?

**A14.** It's controlled by the **CURSOR** option of the **SEND MAP** command using a direct (0 through 1919) or symbolic value.

**Q15.** What are **attribute bytes** and how and why are they modified?

**A15.** **Attribute bytes** define map field characteristics (brightness, protection, etc); they are modified prior to issuing a **SEND MAP** command, eg. from normal to intense to highlight an error field.

**Q16.** How do you invoke other programs? What are the pros and cons of each method.

**A16.** There are three ways: 1). use a COBOL II **CALL** statement to invoke a subprogram. This method is transparent to CICS, which sees only the one load module. 2). an **EXEC LINK** is similar to a call; it invokes a separate CICS program and ends with a **RETURN** to the invoking program. or 3). an **EXEC XCTL** which transfers control to another CICS program and does not get control back.

**Q17.** What is **BMS**?

**A17.** **BMS** is **Basic Map Support**; it allows you to code assembler level programs to define screens.

**Q18.** What is the difference between **FSET** and **FRSET**?

**A18.** **FSET** specifies that the modified data tag should be turned on before the map is sent to the screen. **FRSET** turns off the attribute byte; it's used to transmit only changed data from the terminal.

**Q19.** What is the difference between the enter key, the **PF keys** and the **PA keys**?

**A19.** The enter and **PF keys** transmit data from the screen; the **PA keys** tell CICS that a terminal action took place, but data is not transmitted.

**Q20.** Explain the difference among the **EXEC LINK**, **EXEC XCTL** and Cobol II **static call** statements in CICS.

**A20.** COBOL II allows for static calls which are more efficient than the **LINK** instruction which establishes a new run-unit.

**Q21.** Are sequential files supported by CICS?

**A21.** Yes, but not as part of the File Control Program. They are supported as **extra partition transient data files**.

**Q22.** What option can be coded on the **RETURN** command to associate a transaction identifier with the next terminal input?

**A22.** The **TRANSID** option.

**Q23.** What is an **ASRA**?

**A23.** An **ASRA** is the CICS interrupt code, the equivalent of an MVS abend code.

**Q24.** What is **temporary storage**?

**A24.** **Temporary storage** is either main or auxiliary storage that allows the program to save data between task invocations.

**Q25.** What is **transient data**?

**A25.** **Transient data** provides CICS programs with a simple method for sequential processing, often used to produce output for 3270 printers.

**Q26.** What are the two types of **transient data queues**?

**A26.** 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.

**Q27.** Where are **transient data sets** defined to CICS?

**A27.** They are defined in the **destination control table (DCT)**.

**Q28.** Once a **transient data queue** is read, can it be reread?

**A28.** No, silly! That's why IBM calls it transient.

**Q29.** Name some commands used for CICS file browsing.

**A29.** **STARTBR, READNEXT, READPREV, ENDBR** and **RESETBR**.

**Q30.** What other file control processing commands are used for file updating?

**A30.** **WRITE, REWRITE, DELETE** and **UNLOCK**.

**Q31.** What is **Journal Recovery** and **Dynamic Transaction Backout**?

**A31.** **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.

**Q32.** What tables must be updated when adding a new transaction and program?

**A32.** At a bare minimum the **Program Control Table (PCT)** and **Program Processing Table (PPT)** must be updated.

**Q33.** What is the meaning of the **SYNCPOINT** command?

**A33.** **SYNCPOINT** without the **ROLLBACK** option makes all updates to protected resources permanent, with the **ROLLBACK** option it reverses all updates.

**Q34.** What do the terms **locality of reference** and **working set** mean?

**A34.** They refer to CICS efficiency techniques. **Locality of reference** requires that the application program should consistently reference instructions and data within a relatively small number of pages. The **working set** is the number of program pages needed by a task.

**Q35.** What do the keywords **MAPONLY** and **DATAONLY** mean?

**A35.** **MAPONLY** is a **SEND MAP** operand that sends only fields with initial values to the screen. **DATAONLY** is the **SEND MAP** operand that specifies only data from the map area should be displayed.

**Q36.** What is the **MASSINSERT** option?

**A36.** **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.

**Q37.** What is a **cursor** in CICS sql processing.

**A37.** A **cursor** is a pointer that identifies one row in a sql results table as the current row.

**Q38.** What are the DB2 steps required to migrate a CICS DB2 program from source code to load module?

**A38.** A DB2 precompiler processes some sql statements and converts others. It creates a **data base request module** (DBRM) for the binding step. The **bind process** uses the DBRM to create an application plan, which specifies the techniques DB2 will use to process the embedded sql statements. The link/edit step includes an interface to the CICS/DB2 attachment facility.

**Q39.** What is the **SQL Communications Area** and what are some of its key fields?

**A39.** It is a data structure that must be included in any host-language program using SQL. It is used to pass feedback about the sql operations to the program. Fields are return codes, error messages, handling codes and warnings.

**Q40.** What is **DCLGEN**?

**A40.** **DCLGEN** stands for declarations generator; it is a facility to generate DB2 sql data structures in COBOL or PL/I programs.

**Q41.** Name some **translator** and **compile options** and explain their meaning.

**A41.** For translator **SOURCE** option prints the program listing, **DEBUG** enables **EDF** and **COBOL2** alerts the system to use the COBOL II compiler. For the compiler **XREF** prints a sorted data cross reference and **FDUMP** prints a formatted dump if the program abends.

**Q42.** What is the significance of **RDO**?

**A42.** **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.

**Q43.** What is **CECI**?

**A43.** **CECI** is the **command level interpreter tranid** that interactively executes CICS commands. It is a rudimentary CICS command debugger which does not require coding an entire program.

**Q44.** What is **CEDF**?

**A44.** **CEDF** is the execute diagnostic facility that can be used for debugging CICS programs.

**Q45.** What is **CEBR**?

**A45.** **CEBR** lets you browse the contents of a specific temporary storage queue.

**Q46.** Name and explain some common **CICS abend codes**.

**A46.** Any **AEI\_** indicates an execute interface program problem - the abending program encountered an **exceptional condition** that was not anticipated by the coding. **APCT** - the program could not be found or is disabled. **ASRA** - most common CICS abend, indicating a program check, identified by a one-byte code in the Program Status Word in the dump. **AKCP** - the task was cancelled; it was suspended for a period longer than the transaction's defined deadlock timeout period. **AKCT** - The task was cancelled because it was waiting too long for terminal input.

**Q47.** What is a **logical message** in CICS?

**A47.** 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.

**Q48.** What are the CICS commands associated with **temporary storage queue** processing?

**A48.** **WRITEQ TS**, **READQ TS**, and **DELETEQ**, whose meanings should be self-explanatory.

**Q49.** What are the CICS commands associated with **transient data queue** processing?

**A49.** **WRITEQ TD**, **READQ TD**, **DELETEQ TD**, **ENQ** and **DEQ**.

**Q50.** Ok, so what is the meaning of the **ENQ** and **DEQ** commands?

**A50.** 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.

**Q51.** How do you delete Item 3 in a five-item TSQ?

**A51.** You can't--at least not directly. Options, none of them good, include: 1) adding a logical-delete flag to the contents of each item; 2) moving item 4 to 3 and 5 to 4 and initializing item 5, all thru rewrites; this is a variant on 1; 3) 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.

**Q52.** What CICS command would you use to read a VSAM KSDS sequentially in ascending order?

**A52.** **READNEXT** reads the next record from a browse operation for any of the three VSAM files.

**Q53.** How do you get data from a task that began with a **START** command?

**A53.** The **RETRIEVE** command is used to get data from a task that began with a **START** command.

**Q54.** What is **interval control** and what are some of the CICS commands associated with it?

**A54.** CICS **interval control** provides a variety of time-related features - common commands are **ASKTIME**, **FORMATTIME**, **START**, **RETRIEVE**, and **CANCEL**.

**Q55.** What is **task control** and what are the CICS commands associated with it?

**A55.** **Task control** refers to the CICS functions that manage the execution of tasks. (Elementary, my dear Watson!) Task control commands are **SUSPEND**, **ENQ**, and **DEQ**.

**Q56.** What is the **CICS LOAD** command?

**A56.** 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.

**Q57.** What is the **ABEND** command and when would you use it?

**A57.** The **ABEND** command forces a task to end abnormally. It creates a transaction dump and invokes the **dynamic transaction backout**.

**Question:** what is difference between call and link ?

**Answer:** 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:** what are the differences between dfhcommarea and tsq ?

**Answer:** 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 qid is known can be accessed by other transactions also 2. commarea length is s9(4) comp ie 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 tranfer data from one task to another while tsq is used widely within the task as a scratch pad.

**Question:** What is Communication Area?

**Answer:** Communication Area is used to pass data between the programor between the task.

**Question:** Which of the following statements correctly describe the syntax of CICS command language?

- F) If an EXEC CICS command must be continued onto a second line a hyphen (-) must be coded in column 7 of the continued line.
- G) If an EXEC CICS command must be continued onto a second line an 'X' must be coded in column 72 of each line to be continued.
- H) An EXEC CICS command CANNOT be coded within a COBOL IF statement,between the IF command and the period (.) ending it.
- I) The END-EXEC delimiter is optional and never needs to be placed at the end of a CICS command.
- J) The options specified within an EXEC CICS command can be in any order. For example 'EXEC CICS SEND FROM(MSG1) LENGTH(30) END-EXEC' can also be coded 'EXEC CICS SEND LENGTH(30) FROM(MSG1) END-EXEC'

**Answer:** E) The options specified within an EXEC CICS command can be in any order. For example 'EXEC CICS SEND FROM(MSG1) LENGTH(30) END-EXEC' can also be coded 'EXEC CICS SEND LENGTH(30) FROM(MSG1) END-EXEC'

**Question:** .A CICS program ABENDS with an ASRA ABEND code. What is its meaning?

- G) A link was issued to a program whose name does not exist in the PPT (Program Processing Table).
- H) A program attempted to use a map that is not defined in the PCT (Program Control Table).
- I) 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.

- J) A program interrupt (0C0 or 0C1 or 0C2 or ...) has occurred in a CICS program.  
 K) An I/O error has occurred when attempting to use a VSAM file from a CICS program  
**Answer:** D) A program interrupt (0C0 or 0C1 or 0C2 or ...) has occurred in a CICS program.

**Question:** Which of the following commands, when issued by 2 different programs running at the same time, will prevent simultaneous use of resource 'SINGLE'?

- B) EXEC CICS PROTECT RESOURCE('SINGLE') LENGTH(6) END-EXEC.  
 C) EXEC CICS HOLD RESOURCE('SINGLE') LENGTH(6) END-EXEC.  
 D) EXEC CICS TASK SINGLE('SINGLE') LENGTH(6) END-EXEC.  
 L) EXEC CICS EXCLUSIVE RESOURCE('SINGLE') LENGTH(6) END-EXEC.

**Answer:** E) EXEC CICS EXCLUSIVE RESOURCE('SINGLE') LENGTH(6) END-EXEC

**Question:** 1.The map shown below is displayed with: EXEC CICS SEND MAP('MAP1')

MAPSET('MAP1S') MAPONLY END-EXEC.After the screen is displayed, the operator enters 1 character, the letter 'X'.Where will the cursor now appear on the screen?MAP1S DFHMSD  
 TYPE=MAP,MODE=INOUT,CTRL=(FREEKB,FRSET),LANG=COBOL, X TIOAPFX=YESMAP1 DFHMDI  
 SIZE=(24,80) DFHMDF POS=(5,1),ATTRB=UNPROT,LENGTH=1FIELD2 DFHMDF  
 POS=(5,3),ATTRB=UNPROT,LENGTH=1FIELD3 DFHMDF  
 POS=(5,5),ATTRB=(UNPROT,IC),LENGTH=1FIELD4 DFHMDF  
 POS=(5,7),ATTRB=ASKIP,LENGTH=1FIELD5 DFHMDF  
 POS=(5,9),ATTRB=UNPROT,LENGTH=1,INITIAL='Z' DFHMDF POS=(5,11),ATTRB=ASKIP,LENGTH=1  
 DFHMSD TYPE=FINAL

- F) In the field with a POS=(5,1)  
 G) In FIELD2.  
 H) In FIELD3.  
 I) In FIELD4.  
 J) In FIELD5.

**Question:** How can you accomplish braykpoint in intertest?

**Answer:** U-for unconditional braykpoint, C-for condishional braykpoint,and A-for automatic braykpoint

**Question:** how many ways are there for initiating a transaction?what are they?

**Answer:** There are six ways in initiating a transaction.they are as follows.

7. embedding four character transid on the top left most corner of the screen.
8. making use of EXEC CICS START TRANSID ( )
9. making use of EXEC CICS RETURN TRANSID ( )
10. By defining the transid in DCT ( destination control table) to enable ATI (AUTOMATIC TASK INITIATION)
11. Making use of PLT ( program list table)
12. By associating four character transid in PCT (program control table)

**Question:** which type of TDQ is read destructive?

**Answer:** intrapartition tdq is read destructive. extrapartition tdq is not read destrctive.

**Question:** The error code aeiv?

**Answer:** this is the error code for length,if length of the source data is more than the receiving field,this error will occur.this is the correct answer,previously i mentioned it as program id error.sorry for the wrong information.

**Question:** WHAT U MEAN BY AEIV ?

**Answer:** THIS IS THE ERROR CODE GIVEN BY THE SYSTEM ,IT MEANS PROGRAM ID ERROR.

**Question:** WHAT IS THE SIZE OF COMMAREA

**Answer:** THE DEFAULT COMMAREA SIZE IS 65K.

**Question:** What is ASRAABEND in CICS?

**Answer:** It occurs when program interruption takes place.e.g.: when alphanumeric string moved to numeric data itemOR when arithmetic calculations performed on nonnumeric data itemOR when an attempt made to read an occurrence of a table beyond the defined occurrences.ISN'T IT?

**Question:** What is a two Phase commit in CICS?

**Answer:** 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 signals Db2 to complete the next phase and release all the locks.

**Question:** difference between TSQ & TDQ

**Answer:** 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. Hope this will suffice

**Question:** What is ENQ in CICS?

**Answer:** 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:** In SYMBOLIC Cursor Positioning after moving -1 to the length field also the cursor is not positioned in that particular field.Give reasons?

**Answer:** You have to explicitly specify the word CURSOR between your EXEC CICS and END-EXEC in the program.

**Question:** What does EIB mean?

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

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

**Answer:** Max. of 12 exceptional conditions can be given in a single HANDLE CONDITION.

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

**Answer:** READQ TD, the read is destructive. Yes it is correct but there is a restriction.U can deletethe records sequentially.. For example if one want to delete 10 th record directly it is not possible with this.. **Answer:** Answer: READQ TD, the read is destructive. Yes it is correct but there is a restriction.U can deletethe records sequentially.. For example if one want to delete 10 th record directly it is not possible with this..

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

**Answer:** By specifying the ITEM option

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

**Answer:** READQ TD, the read is destructive.

**Question:** WHAT ARE DIFFERENT WAYS OF INITIATING TRANSACTION IN CICS

**Answer:** WE CAN INITIATE CICS TRANSACTION a) BY GIVING TRANSACTION ID b) BY GIVING CICS START COMMAND c) AUTOMATIC TASK INITIATION.

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

**Answer:** 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:** What is the difference between CICS Program Control Table (PCT) and CICS Processing Program Table (PPT) ?

**Answer:** 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:** What are the 3 common ways to create maps?

**Answer:** 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 &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)

**Question:** What is Quasi-reentrancy?

**Answer:** 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:** What is the difference between a physical BMS mapset and a logical BMS mapset?

**Answer:** 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:** How To Set MDT(Modified Data Tag) Thru Application Program?(Dynamically).

**Answer:** You have to move the following macro DFHBMFSE to the Attribute field of that particular Variable.

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

**Answer:** COMMONAREA, TSQ & TDQ.

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

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

**Question:** What is the difference between a RETURN with TRANSID and XCTL ?For example prog. A is issuing REUTRN with TRANSID to prog B. Prog A. is issuing XCTL to prog B.

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

**Question:** What is the maximum number of exceptions that can be specified with a single HANDLE CONDITION command in CICS ?

**Answer:** SIXTEEN (16)

**Question:** WHAT WILL BE THE LENGTH OF THE EIBCALEN ,IF THE TRANSACTION IS USED TO CICS FIRST TIME?

**Answer:** THE LENGTH WILL BE 0(ZERO).

**Question:** WHAT IS DFHEIBLK?

**Answer:** 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:** What is the difference between the XCTL and LINK commands?

**Answer:** The LINK command anticipates return of control to the calling program, theXCTL 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:** What CICS command would you use to read a VSAM KSDS sequentially in ascending order?

**Answer:** 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 positioning in the file will be before the first record satisfying the generic key.For reading in descending order use the READPREV instead ofREADNEXT.

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

**Answer:** Pseudo-conversational will start a new task for each input. By coding a CICS RETURN command specifying TRANSID(itself). Conversational will have an active task during the duration of the data entry.

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

**Answer:** An area used to transfer data between diffrent programs or between subsequent executions of the same program. Needs to be defined in the Linkage Section.

**Q1: What is meant by Handle Condition**

Ans-1. It is used to transfer control to the para when the exceptional condition occurs for which it is designed

**Q2: What is meant by Ignore Condition**

Ans-2. The IGNORE CONDITION command causes no action to be taken if the condition specified occurs in the program.No more than 12 conditions are allowed in the same program.Once any IGNORE or HANDLE command is executed for a condition, the specification remains effect until the program ends or another HANDLE or IGNORE command is executed.

**Q3: What is meant by PUSH and POP commands**

Ans-3. These are used to suspend and reactivate respectively all HANDLE CONDITION currently in effect.

#### Q4: What is meant by Ignore Condition

Ans-4. The IGNORE CONDITION command causes no action to be taken if the condition specified occurs in the program. No more than 12 conditions are allowed in the same program. Once any IGNORE or HANDLE command is executed for a condition, the specification remains effect until the program ends or another HANDLE or IGNORE command is executed.

#### Q5: What are alternatives to HANDLE CONDITION

Ans-5. There are two alternatives namely NO HANDLE and RESP condition. NO HANDLE will cause no action to be taken for any exceptional condition occurring during execution of program. This should only be a special purpose command. RESP option helps CICS place a response code at a completion of the command. The application program can check this code and proceed to the next level. When this is coded HANDLE CONDITION does not have any effect.

#### Q6: What is meant by Basic locator for linkage (BLL)

Ans-6. The Base Locator for linkage (BLL) is an addressing convention used to address storage outside the Working storage section of the program. If the BLL is used for the input commands, it will improve the performance, since the program would be accessing directly the input buffer outside the program. Also if BLL is used for dynamic table loading, it will save the size of the application program, since there is no requirement for any space reservation for the table in the program.

#### Q7: What is meant by SERVICE RELOAD statement

Ans-7. This is used to ensure addressability to a particular area defined in the linkage section.

#### Q8: What is meant by ADDRESS command

Ans-8. This is used to access information in the CICS system areas. This can be used in one of the four ways

CSA To access the common System area, which is the CICS system area defined by the system.

CWA To access the common work area which is a CICS system work area defined by the system programmer in SIT

TCTUA To access the Terminal control table user area (TCTUA), which is a work area associated with a terminal.

TCTUA is defined as per terminal in TCT.

TWA To access the Transaction work area (TWA), which is a work area associated with a task, TWA is defined as one per task in PCT

#### Q9: What is meant by ASSIGN command

Ans-9. The ASSIGN command is used to access the system value like date, time, userid etc and store in a variable

#### Q10: What is meant by EIB

Ans-10.. EIB stands for EXEC interface block. Some commonly used EIBs are as follows...

#### Q11: What do you know about GETMAIN command?

Ans-11. It is used to obtain a certain amount of storage. This is possible by the storage control program SCP. When the use of the available storage is over the FREEMAIN command should be used.

#### Q12: What is difference between LINK and XCTL

Ans-12. LINK : It is the command used to pass control from one program to another where the calling program expects the control to be passed back from the called program.

XCTL : Over here the calling program does not expect the control to be passed back to it.

**Q13: What is meant by Reentrant program?**

Ans-13. It is a program which does not modify itself so that it can re-enter to itself. This is very much required for multithreading environment.

**Q14: What is the significance of EIBCALEN**

Ans-14. EIBCALEN is used to check if any data has been sent by the calling program, this is done by checking COMMAREA. If this is zero and there has been a program which called another program then it can be assumed that there has been error in calling.

**Q15: What is meant by LOAD command?**

Ans-15. It is used to load a program / table dynamically.

**Q16: What is meant by PPT, PCT and KCP**

Ans-16. PPT It is called Processing program table. This is used to register all CICS application programs and BMS maps. PCT This is called program control table which is used to register the control information of all CICS transactions. KCP This is known as task control program and is used for identifying and initializing transactions.

**Q17: What is meant by READ command with GENERIC option**

Ans-17. This is used to read a nonspecific record with a GENERIC key. This is helpful when you do not have the complete information about the key.

**Q18: What is meant by READ with UPDATE command**

Ans-18. When this is specified then the program reads the record and maintains exclusive control over the record until the record is updated by a REWRITE command or the transaction is normally or abnormally completed. If after reading the record it is found that the update is not required then an unlock command is used to unlock the dataset to remove the exclusive control of the record.