

## **Interview Q&As for JCL**

Question: What are three parameters you can specify on Job statement as well as on exec stmt ?

Answer: Time , Region and Cond parameters

Question: How can you trap abends in the JCL?

Answer: Use IF ABEND statement in the JCL.

Question: How do you restart a step in JCL?

Answer: Use RESTART=step name.

Question: how do you pass parameters to the program as the job is being executed ?

Answer: by using 'parm' parameter in exec statement. the value mentioned here should be declared in linkage section in the program and process thru procedure division. this technique is very useful when you do not know the parameters at the time of coding the programs.

Question: Why do you use a controlcard?

Answer: A controlcard can be a member of a pds or a sequential dataset and is used for storing the date fields, Definitions of VSAM files....etc. You use controlcard because you cannot use a instream procedure in a procedure. Generally you will be calling a Proc from your Jcl and you cannot code instream procedure in the Proc and so you will point to the dataset which is called controlcard.

Question: How do you submit JCL via a Cobol program?

For the above question the solution is as follows

Answer: In your JCL define as

```
//JOBA JOB 1111,JOB1
```

```
//STEP01 EXEC PGM=PROG1
```

```
//ddname DD SYSOUT=(*,INTRDR)....and your COBOL(PROG1) should look like this
```

```
SELECT JCL-FILE ASSIGN TO ddname.Open this file and write the JCL statements into this file.
```

Example.

```
MOVE '//TESTJOB JOB 1111,VISVEISH' TO JCL-REC.
```

```
MOVE '//STEP01 EXEC PGM=IEFBR14' TO JCL-REC.and close this file.Then TESTJOB will be submitted.
```

Question: How do you submit a JCL under CICS environment ?

Answer: pass all the jcl codes to a COBOL variable(should be declare using OCCURS clas) and write the line one by one to the spool using CICS commands like SPOOLClose SPOOLOpen SPOOLWrite . For more help refer CECI of CICS or CICS manual

Question: What is the parameter to be passed in the job card for the unlimited time, irrespective of the job class

Answer: TIME=1440

Question: Definition of COND p-r in JCL and a correction to a previously posted question

Answer: COND is a condition parameter, consists of 2 subparameters, 1st - return code from the previous step, 2nd - condition. If COND is true, the step on which COND is coded will be BYPASSED.

Question: Q) What is meant by s0c7 and s0c30 system abend codes (question asked by mr. praveen)?

Answer: A) S0C7 - Data exception error - you will get it whenever you are trying to move the low values or spaces into the numeric field, or compare the numeric fields with low values, or try to do some arithmetic operations on the low values. To avoid this you have to always initialize the numeric fields otherwise they will contain the low values. S0C 30 - I have never heard of it, let you know if I come accross it.

Question: How to pass the temp dataset form one JOB step to another?

Answer: By specifying the DISP as PASS for the temp dataset

Question: What is a COND parameter in JCL?

Answer: COND means condition parameter. It is compared with systemreturn code of previous step.//step1 exec pgm=abcd//step2 exec pgm=xyz, cond=(4,lt)step2 will be executed when system return code of step1 is less than 4.

Question: WRITE A JCL TO EXECUTE A JOB BY 7 A.M ON JAN 20,1986 ?

Answer: THE code IS : /\*MAIN DEADLINE=(0700,B,012086)

Question: HOW MANY TYPES OF LIBRARIES ARE THERE IN JCL ?

Answer: LIBRARIES ARE OF THREE TYPES.1.SYTEM LIBRARIES: SUCH AS SYS1.LINKLIB2.PRIVATE LIBRARIES: SPECIFIED IN A JOBLIB OR STEPLIB DD STATEMENTS.3.TEMPORARY LIBRARIES:CREATED IN A PREVIOUS STEP OF THE JOB.

Question: WHAT U MEAN BY INCLUDE STATEMENT IN JCL ?

Answer: AN INCLUDE STATEMENT IDENTIFIES A MEMBER PF A PDS OR PDSE THAT CONTAINS.THIS SET OF JCL STATEMENTS IS CALLED AN INCLUDE GROUP.THE SYSTEM REPLACES THE INCLUDE STATEMENT WITH THE STATEMENTS IN THE INCLUDE GROUP.

Question: The maximum number of in-stream procedure you can code in any jcl is ?

Answer: 15.

Question: What you mean by skeleton JCI?

Answer: Jcl which changes during run time ie the values for the jcl such as pgm name ,dd name will change .ie same jcl can be used for various job, equivalent to dynamic sql...

Question: How do you submit a JCL under CICS environment ?

Answer: Edit the JCL in Extra partition TDQ and submit the same using some system command (not sure) under CICS subsystem. This is what I think, please clarify....

Question: what is jcl

Answer: it is interface between operating system(mvs) & application program. when 2 related programs are combined together on control statements is called job control language

Question: What is the max blocksize for a Tape file?

Answer: It is 32,760. Based on that we can calculate efficient number of Records in a Block

Question: What are the basic JCL Statements for a Job?

Answer: 1.JOB : Identifies a job and supplies accounting info 2.EXEC :

Identifies a job step by indicating the name of the program to be

executed. 3.DD : Identifies a data set to be allocated for the job

step 4.Delimiter (/): Marks the end of an in-stream dataset 5.Null

(/): Marks the end of a job 6.Comments(//): Provides Comments

7.PROC : Marks the beginning of a procedure 8.PEND : Marks the end of

a procedure 9.OUTPUT: Supplies options for SYSOUT processing.

Question: What do the statements: typrun=scan and typrun=hold do in a JCL statement

Answer: typrun=scan checks the JCL for errors, typrun=hold holds the job until further notice.

Question: Which of the following is Online transaction? CICS, DB2 and JCL

Answer: CICS

Question: How many PERFORM's are there in COBOL-II?

Answer: 5

Question: which is the most widely used batch performance monitor for DB2?

Answer: DB2PM

Question: What is QSAM error usually when it occurs?

Answer: Usually it occurs at the time of job submission.

Question: what is the purpose of include statement in a jcl?

Answer: It is used as an alternative for steplib. When we specify the dataset name in include, it will search in all the datasets specified in the include dataset.

Question: IS IT POSSIBLE TO KNOW THE REMAINING FREE SPACE IN AN CONTROL INTERVAL/CONTROL AREA ONCE AN INSERTION HAS BEEN MADE.

Answer: NOT POSSIBLE

Question: what does soc04 error mean?

Answer: this error is faced when we execute the cobol program. the main reason for this error is

that a variable is defined with less characters and we are trying to move data which is larger than the actual storage space.

Question: What is JCL

Answer: JCL is Job Control Language and is used for Batch processing. The startup procedures of OS and standard products like CICS etc are written in JCL.

Question: In which table PLAN is registered in ?

Answer: RCT

Question: GDG?

Answer: GDG - group of dataset that are logically or chronologically related, referred by name and a relative generation number – an integer which identifies the generation of a dataset and is coded in parentheses after dataset name. Absolute GDG name - GxxxxVyy, where xxxx-absolute gen.number, yy-version number. Can be sequential, direct, partitioned. (VSAM - no). Must always be cataloged. Advantage - all datasets have the same name and system keeps track of adding new and retaining previous generations and deleting oldest successive generation. To create a GDG we create a GDG index in the system catalog with IDCAMS utility and then a model (prototype, DSCB) on the same volume to supply DCB information. Empty - when limit is reached all members are removed from the index, otherwise-only oldest. Scratch-removed members are uncataloged & deleted, otherwise - removed & uncataloged, but remain in the system (not members of GDG any more). GDG number is updated at the end of the job. If number is not specified all generations will be processed from the beginning

Question: what is jcl

Answer: it is used to communicate between the terminals.

Question: what do you mean By spooling? Expand SPOOL?

Answer: This is managed by JES. This is used for Queuing the Outputs that are intended for Printing and are first stored in SPOOLDASD. This can be managed Using

Question: How many Instream-Procedures(procs) can be Coded in a single Job?

Answer: The Answer is: 15

Question: FOR HOW LONG A JOB CAN BE EXECUTED CONTINUEOUSLY IN A MAINFRAME

Answer: 248 DAYS

Question: How may divisions are there in JCL-COBOL?

Answer: SIX

Question: MAX. NO OF DD STATEMENTS IN A JOB

Answer: 3273

Question: HOW MUCH SPACE OS ALLOCATES WHEN YOU CREATE A PS OR PDS?

Answer: 56 KB

Question: MIN NO OF DATASET NAMES(PDS) IN ONE DIRECTORY BLOCK?

Answer: SIX

Question: THE MAXIMUM NUMBER OF STEPS IN A JOB?

Answer: 255

Question: How much is memory space involved, when we code BLOCKSIZE,TRK & CYL

Answer: One block constitutes 32KB of formatted memory/ 42KB of Unformatted memory,6 blocks makes one Track & 15 Tracks makes one cylinder.

Question: Corrections in the answers.

Answer: I think the answer for the question by Kyati on march 19/1998 about Maximum number of extents in secondary allocation is 16 & not one.I think there is a missing Disposition parameter for the question by Anon on march 11\1998-- Please add PASS.

Question: What is DSNDB06 ?

Answer: This is the Place where DB2 Catalog resides

Question: What is the use of DSNDB07 ?

Answer: This is the area where sorting takes place in DB2

Question: What is the purpose of Identification Division?

Answer: Documentation.

Question: What is JCL?

Answer: job control language

Question: WHAT IS DATACOM DB?

Answer: IT IS A DATABASE USED WITH VSE.

Question: What is a Dummy Utility and what it does ?

Answer: IEFBR14 is a Dummy utility and it is used for the sake of EXEC PGM= .... statment in JCL[when used it wouldn't perform any task].  
e.g. While Allocating a dataset you don't have to run any utility [this could be done by giving disp=new in DD statment]. But for a PGM name must be given in EXEC statment, it is used.

Question: What 3 guidelines do we have to follow when concatenating DD statements?

Answer: 1. Datasets must be of the same type (disk or tape) 2. All datasets must have the same logical record length 3 The dataset with the largest blocksize must be listed first.

Question: On the DD statement, what is the main difference between

creating a new sequential flat file and a partitioned dataset?

Answer: SPACE=(n,m) for a sequential file, SPACE=(n,m,p) for a PDS where n, m, and p are numbers. The p designates how many directory blocks to allocate.

Question: What is the difference between IEBGENER, IEBCOPY and REPRO in IDCAMS utility?

Answer: IEBGENER -- This is a dataset utility for copying sequential datasets which produces a PDS or a member from a sequential dataset. IEBCOPY -- This is a dataset utility for copying one PDS to another or to merge PDSs. REPRO -- This is for copying sequential datasets. More or less same as the IEBGENER. RAVI

Question: How do you submit JCL via a Cobol program?

Answer: Use a file //dd1 DD sysout=(\*,intrdr) write your JCL to this file. Pl some one try this out.

Question: How to execute a set of JCL statements from a COBOL program

Answer: Using EXEC CICS SPOOL WRITE(var-name) END-EXEC command. var-name is a COBOL host structure containing JCL statements.

Question: What is the difference between static call & Dynamic call

Answer: In the case of Static call, the called program is a stand alone program, it is an executable program. During run time we can call it in our called program. As about Dynamic call, the called program is not an executable program it can be executed thru the called program

Question: What is the difference between cataloged procedure and In-Stream procedure?

Answer: In Stream procedures are set of JCL statements written between JOB and EXEC statements, start with PROC and end with PEND statement. Mainly used to test cataloged procedures. Cataloged procedure is cataloged on the procedure library and is called by specifying the procedure name on the EXEC statement.

Question: What do you feel makes a good program?

Answer: a program that follows a top down approach. It is also one that other programmers or users can follow logically and is easy to read and understand.

Question: can we browse or edit the GDG dataset if it is a tape entry?

Answer: No,

Question: What are the maximum and minimum sizes of any CONTROL AREA (VSAM datasets) ?

Answer: Minimum Size : 1 track Maximum size : 1 cylinder

Question: HOW TO GET CURSOR POSITION FROM SYSTEM IN CICS ENVIRONMENT ?

Answer: GET IT FROM EIBCURPOS !

Question: How many parameters are there to a DISP statement and what are their uses.

Answer: There are three(3) parameters. Parameter 1: current data set disposition(new, shr, old, mod) Parameter 2: normal close action for data set (catlg, keep, delete) Parameter 3:abend action for data set (catlg, keep, delete).

Question: What is the error code SOC01 indicate ?

Answer: Operation exception error For eg a dataset open error

Question: WHAT IS COMM?

Answer: COMM - HALF WORD BINARY

Question: What is a procedure?

Answer: A set of precoded JCL that can be modified through the use of parameters or override cards. Note: Procedures can be catalogued or instream.

Question: What is the difference between specifying DISP=OLD and DISP=SHR for a dataset?

Answer: OLD specifies exclusive use of a dataset, SHR allows multiple jobs to concurrently access the dataset Note: When updating a dataset, you would normally use OLD.

Question: What are the three basic types of statements in a jobstream?

Answer: JOB(one per jobstream)EXEC(one or more per job)DD(one or more per jobstep)

Question: What does SYSIN \* indicate?

Answer: Instream data follows this card and is terminated when followed by a card containing // or /\* in columns 1 and 2.

Question: What are three major types of JCL statements? What are their functions?

Answer: JOB, EXEC, DD. JOB - indicates start of jobstream to the operating system and through parms coded on it, certain details about the job (time, region, message level, job accounting data). EXEC - indicates the start of execution of a particular job step, be that step a program or a proc.DD - is a data definition, which is used to describe the attributes of a data set (name, unit, type, space, disposition).

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## QUESTION BANK (MAINFRAME)

### COBOL

1.Name the divisions in a COBOL program. - GS

IDENTIFICATION DIVISION, ENVIRONMENT DIVISION, DATA DIVISION, PROCEDURE DIVISION.

2.What are the different data types available in COBOL?

Alpha-numeric (X), alphabetic (A) and numeric (9).

3.What does the INITIALIZE verb do? - GS

Alphabetic, Alphanumeric fields & alphanumeric edited items are set to SPACES.

Numeric, Numeric edited items set to ZERO.

FILLER , OCCURS DEPENDING ON items left untouched.

4.What is 77 level used for ?

Elementary level item. Cannot be subdivisions of other items (cannot be qualified), nor can they be subdivided themselves.

5.What is 88 level used for ?

For condition names.

6.What is level 66 used for ?

For RENAME clause.

7.What does the IS NUMERIC clause establish ?

IS NUMERIC can be used on alphanumeric items, signed numeric & packed decimal items and unsigned numeric & packed decimal items. IS NUMERIC returns TRUE if the item only consists of 0-9. However, if the item being tested is a signed item, then it may contain 0-9, + and - .

8.How do you define a table/array in COBOL?

01 ARRAYS.



05 ARRAY1 PIC X(9) OCCURS 10 TIMES.

05 ARRAY2 PIC X(6) OCCURS 20 TIMES INDEXED BY WS-INDEX.

9.Can the OCCURS clause be at the 01 level?

No.

10.What is the difference between index and subscript? - GS

Subscript refers to the array occurrence while index is the displacement (in no of bytes) from the beginning of the array. An index can only be modified using PERFORM, SEARCH & SET. Need to have index for a table in order to use SEARCH, SEARCH ALL.

11.What is the difference between SEARCH and SEARCH ALL? - GS

SEARCH - is a serial search.

SEARCH ALL - is a binary search & the table must be sorted ( ASCENDING/DESCENDING KEY clause to be used & data loaded in this order) before using SEARCH ALL.

12.What should be the sorting order for SEARCH ALL? - GS

It can be either ASCENDING or DESCENDING. ASCENDING is default. If you want the search to be done on an array sorted in descending order, then while defining the array, you should give DESCENDING KEY clause. (You must load the table in the specified order).

13.What is binary search?

Search on a sorted array. Compare the item to be searched with the item at the center. If it matches, fine else repeat the process with the left half or the right half depending on where the item lies.

14.My program has an array defined to have 10 items. Due to a bug, I find that even if the program access the 11th item in this array, the program does not abend. What is wrong with it?

Must use compiler option SSRANGE if you want array bounds checking. Default is NOSSRANGE.

15.How do you sort in a COBOL program? Give sort file definition, sort statement syntax and meaning. - GS

Syntax:

SORT file-1 ON ASCENDING/DESCENDING KEY key....  
USING file-2  
GIVING file-3.

USING can be substituted by INPUT PROCEDURE IS para-1 THRU para-2  
GIVING can be substituted by OUTPUT PROCEDURE IS para-1 THRU para-2.

file-1 is the sort workfile and must be described using SD entry in  
FILE SECTION.

file-2 is the input file for the SORT and must be described using an  
FD entry in FILE SECTION and SELECT clause in FILE CONTROL.

file-3 is the outfile from the SORT and must be described using an FD  
entry in FILE SECTION and SELECT clause in FILE CONTROL.

file-1, file-2 & file-3 should not be opened explicitly.

INPUT PROCEDURE is executed before the sort and records must be  
RELEASED to the sort work file from the input procedure.

OUTPUT PROCEDURE is executed after all records have been sorted.  
Records from the sort work file must be RETURNed one at a time to the  
output procedure.

16.How do you define a sort file in JCL that runs the COBOL program?

Use the SORTWK01, SORTWK02,..... dd names in the step. Number of sort  
datasets depends on the volume of data being sorted, but a minimum of  
3 is required.

17.What are the two ways of doing sorting in a COBOL program? Give  
the formats. - GS

See question 16.

18.Give the format of USING and GIVING in SORT statement. What are  
the restrictions with it? - GS

See question 16. Restrictions - Cannot massge records, canot select  
records to be sorted.

19.What is the difference between performing a SECTION and a  
PARAGRAPH? - GS

Performing a SECTION will cause all the paragraphs that are part of  
the section, to be performed.

Performing a PARAGRAPH will cause only that paragraph to be performed.

20.What is the use of EVALUATE statement? - GS

Evaluate is like a case statement and can be used to replace nested Ifs. The difference between EVALUATE and case is that no 'break' is required for EVALUATE i.e. control comes out of the EVALUATE as soon as one match is made.

21. What are the different forms of EVALUATE statement?

```
EVALUATE VALUATE SQLCODE ALSO FILE-  
STATUS  
WHEN A=B AND C=D WHEN 100 ALSO '00'  
imperative stmt imperative  
stmt  
WHEN (D+X)/Y = 4 WHEN -305 ALSO '32'  
imperative stmt imperative  
stmt  
WHEN OTHER WHEN OTHER  
imperative stmt imperative stmt  
END-EVALUATE END-EVALUATE
```

```
EVALUATE SQLCODE ALSO A=B EVALUATE SQLCODE ALSO TRUE  
WHEN 100 ALSO TRUE WHEN 100 ALSO A=B  
imperative stmt imperative stmt  
WHEN -305 ALSO FALSE WHEN -305 ALSO (A/C=4)  
imperative stmt  
imperative stmt  
END-EVALUATE END-EVALUATE
```

22. How do you come out of an EVALUATE statement? - GS

After the execution of one of the when clauses, the control is automatically passed on to the next sentence after the EVALUATE statement. There is no need of any extra code.

23. In an EVALUATE statement, can I give a complex condition on a when clause?

Yes.

24. What is a scope terminator? Give examples.

Scope terminator is used to mark the end of a verb e.g. EVALUATE, END-EVALUATE; IF, END-IF.

25.How do you do in-line PERFORM? - GS

```
PERFORM ... <UNTIL> ...  
<sentences>  
END PERFORM
```

26.When would you use in-line perform?

When the body of the perform will not be used in other paragraphs. If the body of the perform is a generic type of code (used from various other places in the program), it would be better to put the code in a separate para and use PERFORM paraname rather than in-line perform.

27.What is the difference between CONTINUE & NEXT SENTENCE ?

CONTINUE is like a null statement (do nothing) , while NEXT SENTENCE transfers control to the next sentence (!!) (A sentence is terminated by a period)

28.What does EXIT do ?

Does nothing ! If used, must be the only sentence within a paragraph.

29.Can I redefine an X(100) field with a field of X(200)?

Yes. Redefines just causes both fields to start at the same location.

For example:

```
01 WS-TOP PIC X(1)
```

```
01 WS-TOP-RED REDEFINES WS-TOP PIC X(2).
```

If you MOVE '12' to WS-TOP-RED,  
DISPLAY WS-TOP will show 1 while  
DISPLAY WS-TOP-RED will show 12.

30.Can I redefine an X(200) field with a field of X(100) ?

Yes.

30.What do you do to resolve SOC-7 error? - GS

Basically you need to correcting the offending data.

Many times the reason for SOC7 is an un-initialized numeric item.  
Examine that possibility first.

Many installations provide you a dump for run time abends ( it can

be generated also by calling some subroutines or OS services thru assembly language). These dumps provide the offset of the last instruction at which the abend occurred. Examine the compilation output XREF listing to get the verb and the line number of the source code at this offset. Then you can look at the source code to find the bug. To get capture the runtime dumps, you will have to define some datasets (SYSABOUT etc ) in the JCL.

If none of these are helpful, use judgement and DISPLAY to localize the source of error.

Some installtion might have batch program debugging tools. Use them.

31.How is sign stored in Packed Decimal fields and Zoned Decimal fields?

Packed Decimal fields: Sign is stored as a hex value in the last nibble (4 bits ) of the storage.

Zoned Decimal fields: As a default, sign is over punched with the numeric value stored in the last bite.

32.How is sign stored in a comp-3 field? - GS

It is stored in the last nibble. For example if your number is +100, it stores hex 0C in the last byte, hex 1C if your number is 101, hex 2C if your number is 102, hex 1D if the number is -101, hex 2D if the number is -102 etc...

33. How is sign stored in a COMP field ? - GS

In the most significant bit. Bit is on if -ve, off if +ve.

34.What is the difference between COMP & COMP-3 ?

COMP is a binary storage format while COMP-3 is packed decimal format.

35.What is COMP-1? COMP-2?

COMP-1 - Single precision floating point. Uses 4 bytes.

COMP-2 - Double precision floating point. Uses 8 bytes.

36.How do you define a variable of COMP-1? COMP-2?

No picture clause to be given. Example 01 WS-VAR USAGE COMP-1.

37.How many bytes does a S9(7) COMP-3 field occupy ?

Will take 4 bytes. Sign is stored as hex value in the last nibble.  
General formula is  $\text{INT}((n/2) + 1)$ , where  $n=7$  in this example.

38. How many bytes does a S9(7) SIGN TRAILING SEPARATE field occupy ?

Will occupy 8 bytes (one extra byte for sign).

39. How many bytes will a S9(8) COMP field occupy ?

4 bytes.

40. What is the maximum value that can be stored in S9(8) COMP?

99999999

41. What is COMP SYNC?

Causes the item to be aligned on natural boundaries. Can be SYNCHRONIZED LEFT or RIGHT.

For binary data items, the address resolution is faster if they are located at word boundaries in the memory. For example, on main frame the memory word size is 4 bytes. This means that each word will start from an address divisible by 4. If my first variable is x(3) and next one is s9(4) comp, then if you do not specify the SYNC clause, S9(4) COMP will start from byte 3 (assuming that it starts from 0). If you specify SYNC, then the binary data item will start from address 4. You might see some wastage of memory, but the access to this computational field is faster.

42. What is the maximum size of a 01 level item in COBOL I? in COBOL II?

In COBOL II: 16777215

43. How do you reference the following file formats from COBOL programs:

Fixed Block File - Use ORGANISATION IS SEQUENTIAL. Use RECORDING MODE IS F, BLOCK CONTAINS 0 .

Fixed Unblocked - Use ORGANISATION IS SEQUENTIAL. Use RECORDING MODE IS F, do not use BLOCK CONTAINS

Variable Block File - Use ORGANISATION IS SEQUENTIAL. Use RECORDING

MODE IS V, BLOCK CONTAINS 0. Do not code the 4 bytes for record length in FD ie JCL rec length will be max rec length in pgm + 4  
Variable Unblocked - Use ORGANISATION IS SEQUENTIAL. Use RECORDING MODE IS V, do not use BLOCK CONTAINS. Do not code 4 bytes for record length in FD ie JCL rec length will be max rec length in pgm + 4.  
ESDS VSAM file - Use ORGANISATION IS SEQUENTIAL.  
KSDS VSAM file - Use ORGANISATION IS INDEXED, RECORD KEY IS, ALTERNATE RECORD KEY IS  
RRDS File - Use ORGANISATION IS RELATIVE, RELATIVE KEY IS  
Printer File - Use ORGANISATION IS SEQUENTIAL. Use RECORDING MODE IS F, BLOCK CONTAINS 0. (Use RECFM=FBA in JCL DCB).

44.What are different file OPEN modes available in COBOL?

Open for INPUT, OUTPUT, I-O, EXTEND.

45.What is the mode in which you will OPEN a file for writing? - GS

OUTPUT, EXTEND

46.In the JCL, how do you define the files referred to in a subroutine?

Supply the DD cards just as you would for files referred to in the main program.

47.Can you REWRITE a record in an ESDS file? Can you DELETE a record from it?

Can rewrite(record length must be same), but not delete.

48.What is file status 92? - GS

Logic error. e.g., a file is opened for input and an attempt is made to write to it.

49.What is file status 39 ?

Mismatch in LRECL or BLOCKSIZE or RECFM between your COBOL pgm & the JCL (or the dataset label). You will get file status 39 on an OPEN.

50.What is Static,Dynamic linking ?

In static linking, the called subroutine is link-edited into the calling program , while in dynamic linking, the subroutine & the main

program will exist as separate load modules. You choose static/dynamic linking by choosing either the DYNAM or NODYNAM link edit option. (Even if you choose NODYNAM, a CALL identifier (as opposed to a CALL literal), will translate to a DYNAMIC call). A statically called subroutine will not be in its initial state the next time it is called unless you explicitly use INITIAL or you do a CANCEL. A dynamically called routine will always be in its initial state.

51. What is AMODE(24), AMODE(31), RMODE(24) and RMODE(ANY)? (applicable to only MVS/ESA Enterprise Server).

These are compile/link edit options.

AMODE - Addressing mode. RMODE - Residency mode.

AMODE(24) - 24 bit addressing. AMODE(31) - 31 bit addressing. AMODE (ANY) - Either 24 bit or 31 bit addressing depending on RMODE.

RMODE(24) - Resides in virtual storage below 16 Meg line. Use this for 31 bit programs that call 24 bit programs. (OS/VS Cobol pgms use 24 bit addresses only).

RMODE(ANY) - Can reside above or below 16 Meg line.

52. What compiler option would you use for dynamic linking?

DYNAM.

53. What is SSRANGE, NOSSRANGE ?

These are compiler options w.r.t subscript out of range checking.

NOSSRANGE is the default and if chosen, no run time error will be flagged if your index or subscript goes out of the permissible range.

54. How do you set a return code to the JCL from a COBOL program?

Move a value to RETURN-CODE register. RETURN-CODE should not be declared in your program.

55. How can you submit a job from COBOL programs?

Write JCL cards to a dataset with

//xxxxxxx SYSOUT=(A,INTRDR) where 'A' is output class, and dataset should be opened for output in the program. Define a 80 byte record layout for the file.

56. What are the differences between OS VS COBOL and VS COBOL II?



OS/VS Cobol pgms can only run in 24 bit addressing mode, VS Cobol II pgms can run either in 24 bit or 31 bit addressing modes.

Report writer is supported only in OS/VS Cobol.

USAGE IS POINTER is supported only in VS COBOL II.

Reference modification eg: WS-VAR(1:2) is supported only in VS COBOL II.

EVALUATE is supported only in VS COBOL II.

Scope terminators are supported only in VS COBOL II.

OS/VS Cobol follows ANSI 74 stds while VS COBOL II follows ANSI 85 stds.

Under CICS Calls between VS COBOL II programs are supported.

57.What are the steps you go through while creating a COBOL program executable?

DB2 precompiler(if embedded sql used), CICS translator (if CICS pgm), Cobol compiler, Link editor.  
If DB2 program, create plan by binding the DBRMs.

58.Can you call an OS VS COBOL pgm from a VS COBOL II pgm ?

In non-CICS environment, it is possible. In CICS, this is not possible.

VSAM

1.What are the different types of VSAM files available?

ESDS: Entry Sequence Data Set

KSDS: Key Sequence Data Set

RRDS: Relative Data Set

2.What is IDCAMS ?

IDCAMS is the Access Method Services program. You run the IDCAMS program and supply AMS commands thru SYSIN. (examples of AMS commands are DELETE, DEFINE, REPRO etc..).

3.Can AMS commands be run from the TSO prompt ?

Yes

4.Syntax of AMS modal commands ?

Note: these can be used only under IDCAMS and not from the TSO prompt.

IF LASTCC(or MAXCC) >(or <,<= etc..) value -

THEN -

DO -

command set (such as DELETE, DEFINE etc..)

ELSE -

DO -

command set

LASTCC - Condition code from the last function(such as delete) executed

MAXCC - Max condition code that was returned by any of the prev functions

SET is also a valid AMS command. SET LASTCC (or MAXCC) = value

The maximum condition code is 16. A cond code of 4 indicates a warning. A cond code of 8 is usually encountered on a DELETE of a dataset that is not present.

5.Under IDCAMS , multiple functions can be executed, each of which returns a cond code. What will be the condition code returned to the operating system ?

The maximum condition code generated is returned as the condition code of the IDCAMS step.

## 6.What is Control Interval, Control Area

Control Interval is analogous to a physical block for QSAM files. It is the unit of i/o. Must be between 512 bytes to 32 k. Usually either 2K or 4K. A larger control interval increases performance for sequential processing while the reverse is true for random access. Under CICS when a record is locked, the entire CI gets locked. Control area is a group of control intervals. CA is used during allocation. CA size is calculated based on the allocation type (cyl, tracks or records) and can be max of 1 cylinder

## 7.What is FREESPACE ?

Coded in the DEFINE as FREESPACE(ci ca) where ci is the percentage of each control interval to be left free for insertions, ca is the percentage of control intervals in each control area to be left empty.

## 8.How do you decide on optimum values for CI, FREESPACE etc...

CI size should be based on record length, type of processing. Usually CI is 4K. If record length is larger(>1K), chose 6K or 8K. FREESPACE should be large if more number of insertions are envisaged. Usual values are (20 20) when heavy updates are expected. CI size can be calculated.

## 9.Would you specify FREESPACE for an ESDS?

No. Because you cannot insert records in an ESDS, also when you rewrite a record, it must be of the same length. Thus putting any value for freespace does not make any sense.

## 10.What is SHAREOPTS ?

SHAREOPTS is a parameter in the DEFINE and specifies how an object can be shared among users. It is coded as SHAREOPTS(a b), where a is the cross region share option ie how two or more jobs on a single system can share the file, while b is the cross system share option ie how two or more jobs on different MVSES can share the file. Usual value is (2 3).

## 11.What is the meaning of each of the values in SHAREOPTS(2 3)?

Value of 2 for cross region means that the file can be processed simultaneously by multiple users provided only one of them is an updater. Value of 3 for cross system means that any number of jobs

can process the file for input or output (VSAM does nothing to ensure integrity).

12.How do you define a KSDS ?

DEFINE CLUSTER(cluster name) with the INDEXED parameter. Also specify the ds name for the DATA component & the ds INDEX component. Other important parms are RECORDSIZE, KEYS, SHAREOPTIONS.

13.How do you define an ALTINDEX ? How do you use ALTINDEXs in batch, CICS pgms ?

DEFINE ALTERNATEINDEX. Important parameters are RELATE where you specify the base cluster name, KEYS, RECORDSIZE, SHAREOPTIONS, UNIQUEKEY (or NONUNIQUEKEY), DATA(ds name for the data component), INDEX(ds name for the index component).

Then DEFINE PATH. Important parameters are NAME (ds name for the path), PATHENTRY (ds name of the alternate index name), UPDATE(or NOUPDATE) which specifies whether an alt index is updated when a update to the base cluster takes place.

Then BLDINDEX. Parameters are INDATASET(ds name of base cluster), OUTDATASET(ds name of AIX).

Using alternate indexes in batch pgms:

In the JCL, you must have DD stmts for the cluster and for the path (s). In the cobol pgm, SELECT .. ASSIGN TO ddname for base cluster RECORD KEY IS... ALTERNATE RECORD KEY IS..

Using alternate indexes in CICS pgms:

FCT entries must be created for both base cluster & the path. To read using the alternate index, use the dd name of the path in CICS file control commands.

14.What happens when you open an empty VSAM file in a COBOL program for input?

A VSAM file that has never contained a record is treated as unavailable. Attempting to open for input will fail. An empty file can be opened for output only. When you open for output, COBOL will write a dummy record to the file & then delete it out.

15.How do you initialize a VSAM file before any operation? a VSAM with alternate index?

Can write a dummy program that just opens the file for output & then closes it.

16. What does a file status of 02 on a VSAM indicate?

Duplicate alternate key . Happens on both input and output operation

17. How do you calculate record size of an alternate cluster? Give your values for both unique and non-unique.

Unique Case:  $5 + (\text{alt-key-length} + \text{primary-key})$

Nonunique Case:  $5 + (\text{alt-key-length} + n * \text{primary-key})$

where  $n = \#$  of duplicate records for the alternate key

???? Ramesh - can you explain ?

18. What is the difference between sequential files and ESDS files?

Sequential(QSAM) files can be created on tape while ESDS files cannot.

Also, you can have ALTINDEX for an ESDS while no such facility exists for QSAM files.

19. How do you load a VSAM data set with records ?

Using the REPRO command.

20. How do you define a GDG ?

Use the DEFINE GENERATIONDATAGROUP command. In the same IDCAMS step, another dataset must be defined whose DCB parameters are used when new generations of the GDG are created. This dataset is known as the model dataset. The ds name of this model dataset must be the same as that of the GDG, so use a disp of keep rather than catlg and also specify space=(trk,0)

21. Do all versions of the GDG have to be of the same record length ?

No, the DCB of the model dataset can be overridden when you allocate new versions.

22. How are different versions of GDG named ?

base-file-name.GnnnnnV00 where nnnn= generation number (upto 255). nnnn will be 0000 for the 1st generation.

23. Suppose 3 generations of a GDG exist. How would you reference the

1 st generation in the JCL? - GS

Use GDG name(-2).

24. Suppose a generation of GDG gets created in a particular step of a proc. How would you refer the current generation in a subsequent step? What would be the disposition of this generation now? - GS

Relative generation numbers are updated only at the end of the job, not at the end of a step. To allocate a new generation, we would be using (+1) with a DISP of (NEW,CATLG,DELETE). To refer to this in a subsequent step in the same job, we would again use (+1) but with a DISP of SHR or OLD.

25. What more info you should give in the DD statement while defining the next generation of a GDG? - GS

Give (+1) as the generation number, give (new,catlg) for disp, give space parameter, can give the dcb parameter if you want to override the dcb of the model dataset.

26. Assuming that the DEFINE jcl is not available, how do you get info about a VSAM file's organisation ?

Use the LISTCAT command.

27. During processing of a VSAM file, some system error occurs and it is subsequently unusable . What do you do ?

Run VERIFY.

JCL

1. What is primary allocation for a dataset?

The space allocated when the dataset is first created.

2.What is the difference between primary and secondary allocations for a dataset?

Secondary allocation is done when more space is required than what has already been allocated.

3.How many extents are possible for a sequential file ? For a VSAM file?

16 extents on a volume for a sequential file and 123 for a VSAM file.

4.What does a disposition of (NEW,CATLG,DELETE) mean? - GS

That this is a new dataset and needs to be allocated, to CATLG the dataset if the step is successful and to delete the dataset if the step abends.

5.What does a disposition of (NEW,CATLG,KEEP) mean? - GS

That this is a new dataset and needs to be allocated, to CATLG the dataset if the step is successful and to KEEP but not CATLG the dataset if the step abends. Thus if the step abends, the dataset would not be catalogued and we would need to supply the vol. ser the next time we refer to it.

6.How do you access a file that had a disposition of KEEP? - GS

Need to supply volume serial no. VOL=SER=xxxx.

7.What does a disposition of (MOD,DELETE,DELETE) mean ?

The MOD will cause the dataset to be created (if it does not exist), and then the two DELETES will cause the dataset to be deleted whether the step abends or not. This disposition is used to clear out a dataset at the beginning of a job.

8.What is the DD statement for a output file?

Unless allocated earlier, will have the foll parameters: DISP=(NEW,CATLG,DELETE), UNIT , SPACE & DCB .

9.What do you do if you do not want to keep all the space allocated to a dataset? - GS

Specify the parameter RLSE ( release ) in the SPACE e.g. SPACE=(CYL,(50,50),RLSE)

10. What is DISP=(NEW,PASS,DELETE)?

This is a new file and create it, if the step terminates normally, pass it to the subsequent steps and if step abends, delete it. This dataset will not exist beyond the JCL.

11. How do you create a temporary dataset? Where will you use them?

Temporary datasets can be created either by not specifying any DSNAME or by specifying the temporary file indicator as in DSN=\*\*TEMP. We use them to carry the output of one step to another step in the same job. The dataset will not be retained once the job completes.

12. How do you restart a proc from a particular step? - GS

In job card, specify RESTART=procstep.stepname  
where procstep = name of the jcl step that invoked the proc  
and stepname = name of the proc step where you want execution to start

13. How do you skip a particular step in a proc/JOB? - GS

Can use either condition codes or use the jcl control statement IF  
(only in ESA JCL)

14. A PROC has five steps. Step 3 has a condition code. How can you override/nullify this condition code? - GS

Provide the override on the EXEC stmt in the JCL as follows:

```
//STEP001 EXEC procname,COND.stepname=value
```

All parameters on an EXEC stmt in the proc such as COND, PARM have to be overridden like this.

15. How do you override a specific DDNAME/SYSIN in PROC from a JCL?

```
//<stepname.dd> DSN=...
```

16. What is NOTCAT 2 - GS

This is an MVS message indicating that a duplicate catalog entry exists. E.g., if you already have a dataset with dsn = 'xxxx.yyyy' and you try to create one with disp new,catalog, you would get this error. The program open and write would go through and at the end of the step the system would try to put it in the system catalog. At this point since an entry already exists the catalog would fail and give this message. You can fix the problem by deleting/uncataloging



the first data set and going to the volume where the new dataset exists(this info is in the msglog of the job) and cataloging it.

17.What is 'S0C7' abend? - GS

Caused by invalid data in a numeric field.

18.What is a S0C4 error ? - GS

Storage violation error - can be due to various reasons. e.g.:  
READING a file that is not open, invalid address referenced due to subscript error.

19.What are SD37, SB37, SE37 abends?

All indicate dataset out of space. SD37 - no secondary allocation was specified. SB37 - end of vol. and no further volumes specified.  
SE37 - Max. of 16 extents already allocated.

20.What is S322 abend ?

Indicates a time out abend. Your program has taken more CPU time than the default limit for the job class. Could indicate an infinite loop.

21.Why do you want to specify the REGION parameter in a JCL step? - GS

To override the REGION defined at the JOB card level.  
REGION specifies the max region size. REGION=0K or 0M or omitting REGION means no limit will be applied.

22.What does the TIME parameter signify ? What does TIME=1440 mean ?

TIME parameter can be used to overcome S322 abends for programs that genuinely need more CPU time. TIME=1440 means no CPU time limit is to be applied to this step.

23.What is COND=EVEN ?

Means execute this step even if any of the previous steps, terminated abnormally.

24.What is COND=ONLY ?

Means execute this step only if any of the previous steps, terminated abnormally.

25.How do you check the syntax of a JCL without running it?

TYPERUN=SCAN on the JOB card or use JSCAN.

26.What does IEBGENER do?

Used to copy one QSAM file to another. Source dataset should be described using SYSUT1 ddname. Destination dataset should be described using SYSUT2. IEBGENR can also do some reformatting of data by supplying control cards via SYSIN.

27.How do you send the output of a COBOL program to a member of a PDS?

Code the DSN as pds(member) with a DISP of SHR. The disp applies to the pds and not to a specific member.

28.I have multiple jobs ( JCLs with several JOB cards ) in a member. What happens if I submit it?

Multiple jobs are submitted (as many jobs as the number of JOB cards).

29.I have a COBOL program that ACCEPTs some input data. How do you code the JCL statment for this? ( How do you code instream data in a JCL? )

```
//SYSIN DD*  
input data  
input data  
/*
```

30.Can you code instream data in a PROC ?

No.

31. How do you overcome this limitation ?

One way is to code SYSIN DD DUMMY in the PROC, and then override this from the JCL with instream data.

32.How do you run a COBOL batch program from a JCL? How do you run a COBOL/DB2 program?

To run a non DB2 program,  
//STEP001 EXEC PGM=MYPROG

```
To run a DB2 program,  
//STEP001 EXEC PGM=IKJEFT01  
//SYSTSIN DD *  
DSN SYSTEM(....)  
RUN PROGRAM(MYPROG)  
PLAN(.....) LIB(....) PARMs(...)  
/*
```

33.What is STEPLIB, JOBLIB? What is it used for? - GS

Specifies that the private library (or libraries) specified should be searched before the default system libraries in order to locate a program to be executed.

STEPLIB applies only to the particular step, JOBLIB to all steps in the job.

34.What is order of searching of the libraries in a JCL? - GS

First any private libraries as specified in the STEPLIB or JOBLIB, then the system libraries such as SYS1.LINKLIB. The system libraries are specified in the linklist.

35.What happens if both JOBLIB & STEPLIB is specified ?

JOBLIB is ignored.

36.When you specify mutiple datasets in a JOBLIB or STEPLIB, what factor determines the order? - GS

The library with the largest block size should be the first one.

37.How to change default proclib ?

```
//ABCD JCLLIB ORDER=(ME.MYPROCLIB,SYS1.PROCLIB)
```

38.The disp in the JCL is MOD and the program opens the file in OUTPUT mode. What happens ? The disp in the JCL is SHR and the pgm opens the file in EXTEND mode. What happens ?

Records will be written to end of file (append) when a WRITE is done in both cases.

39.What are the valid DSORG values ?

PS - QSAM, PO - Partitioned, IS - ISAM

40. What are the differences between JES2 & JES3 ?

JES3 allocates datasets for all the steps before the job is scheduled. In JES2, allocation of datasets required by a step are done only just before the step executes.

????? Can anyone add more

DB2

1.How would you find out the total number of rows in a table? - GS

Use `SELECT COUNT(*) ...`

2.How do you eliminate duplicate values in SELECT? - GS

Use `SELECT DISTINCT ...`

3.How do you select a row using indexes? - GS

Specify the indexed columns in the WHERE clause.

4.What are aggregate functions?

Built-in mathematical functions for use in SELECT clause.

5.How do you find the maximum value in a column? - GS

Use `SELECT MAX(...`

6.Can you use MAX on a CHAR column?

YES.

7.My SQL statement `SELECT AVG(SALARY) FROM EMP` yields inaccurate results. Why?

Because SALARY is not declared to have NULLs and the employees for whom the salary is not known are also counted.

8.How do you retrieve the first 5 characters of FIRSTNAME column of EMP table?

`SELECT SUBSTR(FIRSTNAME,1,5) FROM EMP;`

9.How do you concatenate the FIRSTNAME and LASTNAME from EMP table to give a complete name?

`SELECT FIRSTNAME || ' ' || LASTNAME FROM EMP;`

10.What is the use of VALUE function?

1. Avoid -ve SQLCODEs by handling nulls and zeroes in computations
2. Substitute a numeric value for any nulls used in computation

11. What is UNION, UNION ALL? - GS

UNION : eliminates duplicates

UNION ALL: retains duplicates

Both these are used to combine the results of different SELECT statements.

12. Suppose I have five SQL SELECT statements connected by UNION/UNION ALL, how many times should I specify UNION to eliminate the duplicate rows? - GS

Once.

13. What is the restriction on using UNION in embedded SQL?

It has to be in a CURSOR.

14. In the WHERE clause what is BETWEEN and IN? - GS

BETWEEN supplies a range of values while IN supplies a list of values.

15. Is BETWEEN inclusive of the range values specified? - GS

Yes.

16. What is 'LIKE' used for in WHERE clause? What are the wildcard characters? - GS

LIKE is used for partial string matches. '%' ( for a string of any character ) and '\_' (for any single character ) are the two wildcard characters.

17. When do you use a LIKE statement?

To do partial search e.g. to search employee by name, you need not specify the complete name; using LIKE, you can search for partial string matches.

18. What is the meaning of underscore ( '\_' ) in the LIKE statement? - GS

Match for any single character.

19.What do you accomplish by GROUP BY ... HAVING clause? - GS

GROUP BY partitions the selected rows on the distinct values of the column on which you group by.

HAVING selects GROUPs which match the criteria specified

20.Consider the employee table with column PROJECT nullable. How can you get a list of employees who are not assigned to any project?

```
SELECT EMPNO  
FROM EMP  
WHERE PROJECT IS NULL;
```

21.What is the result of this query if no rows are selected:

```
SELECT SUM(SALARY)  
FROM EMP  
WHERE QUAL='MSC';
```

NULL

22.Why SELECT \* is not preferred in embedded SQL programs?

For three reasons:

- If the table structure is changed ( a field is added ), the program will have to be modified
- Program might retrieve the columns which it might not use, leading on I/O over head.
- The chance of an index only scan is lost.

.What are correlated subqueries? - GS

A subquery in which the inner ( nested ) query refers back to the table in the outer query. Correlated subqueries must be evaluated for each qualified row of the outer query that is referred to.

23.What are the issues related with correlated subqueries? - GS

24.What is a cursor? why should it be used? - GS

Cursor is a programming device that allows the SELECT to find a set of rows but return them one at a time.

Cursor should be used because the host language can deal with only one row at a time.

25.How would you retrieve rows from a DB2 table in embedded SQL? - GS

Either by using the single row SELECT statements,or by using the CURSOR.

26.Apart from cursor, what other ways are available to you to retrieve a row from a table in embedded SQL? - GS

Single row SELECTs.

27.Where would you specify the DECLARE CURSOR statement? - GS

See answer to next question.

28.How do you specify and use a cursor in a COBOL program? - GS

Use DECLARE CURSOR statement either in working storage or in procedure division(before open cursor), to specify the SELECT statement. Then use OPEN, FETCH rows in a loop and finally CLOSE.

29.What happens when you say OPEN CURSOR?

If there is an ORDER BY clause, rows are fetched, sorted and made available for the FETCH statement. Other wise simply the cursor is placed on the first row.

30.Is DECLARE CURSOR executable?

No.

31.Can you have more than one cursor open at any one time in a program ? - GS

Yes.

32.When you COMMIT, is the cursor closed?

Yes.

33.How do you leave the cursor open after issuing a COMMIT? ( for DB2 2.3 or above only )

Use WITH HOLD option in DECLARE CURSOR statement. But, it has not effect in psuedo-conversational CICS programs.

34.Give the COBOL definition of a VARCHAR field.



A VARCHAR column REMARKS would be defined as follows:

...

10 REMARKS.

49 REMARKS-LEN PIC S9(4) USAGE COMP.

49 REMARKS-TEXT PIC X(1920).

35. What is the physical storage length of each of the following DB2 data types:

DATE, TIME, TIMESTAMP?

DATE: 4bytes

TIME: 3bytes

TIMESTAMP: 10bytes

36. What is the COBOL picture clause of the following DB2 data types:

DATE, TIME, TIMESTAMP?

DATE: PIC X(10)

TIME : PIC X(08)

TIMESTAMP: PIC X(26)

37. What is the COBOL picture clause for a DB2 column defined as DECIMAL(11,2)? - GS

PIC S9(9)V99 COMP-3.

Note: In DECIMAL(11,2), 11 indicates the size of the data type and 2 indicates the precision.

38. What is DCLGEN ? - GS

DeCLarations GENerator: used to create the host language copy books for the table definitions. Also creates the DECLARE table.

39. What are the contents of a DCLGEN? - GS

1. EXEC SQL DECLARE TABLE statement which gives the layout of the table/view in terms of DB2 datatypes.

2. A host language copy book that gives the host variable definitions for the column names.

40. Is it mandatory to use DCLGEN? If not, why would you use it at all? - GS

It is not mandatory to use DCLGEN.

Using DCLGEN, helps detect wrongly spelt column names etc. during the

pre-compile stage itself ( because of the DECLARE TABLE ). DCLGEN being a tool, would generate accurate host variable definitions for the table reducing chances of error.

41.Is DECLARE TABLE in DCLGEN necessary? Why it used?

It not necessary to have DECLARE TABLE statement in DCLGEN. This is used by the pre-compiler to validate the table-name, view-name, column name etc., during pre-compile.

42.Will precompile of an DB2-COBOL program bomb, if DB2 is down?

No. Because the precompiler does not refer to the DB2 catalogue tables.

43.How is a typical DB2 batch pgm executed ?

1. Use DSN utility to run a DB2 batch program from native TSO. An example is shown:

```
DSN SYSTEM(DSP3)
RUN PROGRAM(EDD470BD) PLAN(EDD470BD) LIB('EDGS01T.OBJ.LOADLIB')
END
```

2. Use IKJEFT01 utility program to run the above DSN command in a JCL.

44.Assuming that a site's standard is that pgm name = plan name, what is the easiest way to find out which pgms are affected by change in a table's structure ?

Query the catalogue tables SYSPLANDEP and SYSPACKDEP.

45.Name some fields from SQLCA.

SQLCODE, SQLERRM, SQLERRD

46.How can you quickly find out the # of rows updated after an update statement?

Check the value stored in SQLERRD(3).

47.What is EXPLAIN? - GS

EXPLAIN is used to display the access path as determined by the optimizer for a SQL statement. It can be used in SPUFI (for single

SQL statement ) or in BIND step (for embedded SQL ).

48. What do you need to do before you do EXPLAIN?

Make sure that the PLAN\_TABLE is created under the AUTHID.

49. Where is the output of EXPLAIN stored? - GS

In userid.PLAN\_TABLE

50. EXPLAIN has output with MATCHCOLS = 0. What does it mean? - GS

a nonmatching index scan if ACESSTYPE = I.

51. How do you do the EXPLAIN of a dynamic SQL statement?

1. Use SPUFI or QMF to EXPLAIN the dynamic SQL statement
2. Include EXPLAIN command in the embedded dynamic SQL statements

52. How do you simulate the EXPLAIN of an embedded SQL statement in SPUFI/QMF? Give an example with a host variable in WHERE clause.)

Use a question mark in place of a host variable ( or an unknown value ). e.g.

```
SELECT EMP_NAME  
FROM EMP  
WHERE EMP_SALARY > ?
```

53. What are the isolation levels possible ? - GS

CS: Cursor Stability

RR: Repeatable Read

54. What is the difference between CS and RR isolation levels?

CS: Releases the lock on a page after use

RR: Retains all locks acquired till end of transaction

55. Where do you specify them ?

ISOLATION LEVEL is a parameter for the bind process.

56. When do you specify the isolation level? How?

During the BIND process. ISOLATION ( CS/RR )...

57. I use CS and update a page. Will the lock be released after I am done with that page?

No.

58. What are the various locking levels available?

PAGE, TABLE, TABLESPACE

59. How does DB2 determine what lock-size to use?

1. Based on the lock-size given while creating the tablespace
2. Programmer can direct the DB2 what lock-size to use
3. If lock-size ANY is specified, DB2 usually chooses a lock-size of PAGE

60. What are the disadvantages of PAGE level lock?

High resource utilization if large updates are to be done

61. What is lock escalation?

Promoting a PAGE lock-size to table or tablespace lock-size when a transaction has acquired more locks than specified in NUMLKTS. Locks should be taken on objects in single tablespace for escalation to occur.

62. What are the various locks available?

SHARE, EXCLUSIVE, UPDATE

63. Can I use LOCK TABLE on a view?

No. To lock a view, take lock on the underlying tables.

64. What is ALTER ? - GS

SQL command used to change the definition of DB2 objects.

65. What is a DBRM, PLAN ?

DBRM: DataBase Request Module, has the SQL statements extracted from the host language program by the pre-compiler.

PLAN: A result of the BIND process. It has the executable code for

the SQL statements in the DBRM.

66.What is ACQUIRE/RELEASE in BIND?

Determine the point at which DB2 acquires or releases locks against table and tablespaces, including intent locks.

67.What else is there in the PLAN apart from the access path? - GS

PLAN has the executable code for the SQL statements in the host program

68.What happens to the PLAN if index used by it is dropped?

Plan is marked as invalid. The next time the plan is accessed, it is rebound.

69.What are PACKAGES ? - GS

They contain executable code for SQL statements for one DBRM.

70.What are the advantages of using a PACKAGE?

1. Avoid having to bind a large number of DBRM members into a plan
2. Avoid cost of a large bind
3. Avoid the entire transaction being unavailable during bind and automatic rebind of a plan
4. Minimize fallback complexities if changes result in an error.

71.What is a collection?

a user defined name that is the anchor for packages. It has not physical existence. Main usage is to group packages.

72.In SPUFI suppose you want to select max. of 1000 rows , but the select returns only 200 rows. What are the 2 sqlcodes that are returned? - GS

100 ( for successful completion of the query ), 0 (for successful COMMIT if AUTOCOMMIT is set to Yes).

73.How would you print the output of an SQL statement from SPUFI? - GS

Print the output dataset.

74.How do you pull up a query which was previously saved in QMF ? - GS

??

75. Lot of updates have been done on a table due to which indexes have gone haywire. What do you do? - GS

Looks like index page split has occurred. DO a REORG of the indexes.

76. What is dynamic SQL? - GS

Dynamic SQL is a SQL statement created at program execution time.

77. When is the access path determined for dynamic SQL? - GS

At run time, when the PREPARE statement is issued.

78. Suppose I have a program which uses a dynamic SQL and it has been performing well till now. Off late, I find that the performance has deteriorated. What happened? - GS

Probably RUN STATS is not done and the program is using a wrong index due to incorrect stats.

Probably RUNSTATS is done and optimizer has chosen a wrong access path based on the latest statistics.

79. How does DB2 store NULL physically?

as an extra-byte prefix to the column value. physically, the null prefix is Hex '00' if the value is present and Hex 'FF' if it is not.

80. How do you retrieve the data from a nullable column? - GS

Use null indicators. Syntax ... INTO :HOSTVAR:NULLIND

81. What is the picture clause of the null indicator variable? - GS

S9(4) COMP.

82. What does it mean if the null indicator has -1, 0, -2? - GS

-1 : the field is null

0 : the field is not null

-2 : the field value is truncated

83. How do you insert a record with a nullable column?

To insert a NULL, move -1 to the null indicator  
To insert a valid value, move 0 to the null indicator

84.What is RUNSTATS? - GS

A DB2 utility used to collect statistics about the data values in tables which can be used by the optimizer to decide the access path. It also collects statistics used for space management. These statistics are stored in DB2 catalog tables.

85.When will you chose to run RUNSTATS?

After a load, or after mass updates, inserts, deletes, or after REORG.

86.Give some example of statistics collected during RUNSTATS?

- # of rows in the table
- Percent of rows in clustering sequence
- # of distinct values of indexed column
- # of rows moved to a nearby/farway page due to row length increase

87.What is REORG? When is it used?

REORG reorganizes data on physical storage to reclutser rows, positioning overflowed rows in their proper sequence, to reclaim space, to restore free space. It is used after heavy updates, inserts and delete activity and after segments of a segmented tablespace have become fragemented.

88.What is IMAGECOPY ? - GS

It is full backup of a DB2 table which can be used in recovery.

89.When do you use the IMAGECOPY? - GS

- To take routine backup of tables
- After a LOAD with LOG NO
- After REORG with LOG NO

90.What is COPY PENDING status?

A state in which, an image copy on a table needs to be taken, In this status, the table is available only for queries. You cannot update this table. To remove the COPY PENDING status, you take an image copy or use REPAIR utility.

91.What is CHECK PENDING ?

When a table is LOADED with ENFORCE NO option, then the table is left in CHECK PENDING status. It means that the LOAD utility did not perform constraint checking.

92.What is QUIESCE?

A QUIESCE flushes all DB2 buffers on to the disk. This gives a correct snapshot of the database and should be used before and after any IMAGECOPY to maintain consistency.

93.What is a clustering index ? - GS

Causes the data rows to be stored in the order specified in the index. A mandatory index defined on a partitioned table space.

94.How many clustering indexes can be defined for a table?

Only one.

95.What is the difference between primary key & unique index ?

Primary : a relational database constraint. Primary key consists of one or more columns that uniquely identify a row in the table. For a normalized relation, there is one designated primary key.

Unique index: a physical object that stores only unique values. There can be one or more unique indexes on a table.

96.What is sqlcode -922 ?

Authorization failure

97.What is sqlcode -811?

SELECT statement has resulted in retrieval of more than one row.

98.What does the sqlcode of -818 pertain to? - GS

This is generated when the consistency tokens in the DBRM and the load module are different.

99.Are views updatable ?

Not all of them. Some views are updatable e.g. single table view



with all the fields or mandatory fields. Examples of non-updatable views are views which are joins, views that contain aggregate functions(such as MIN), and views that have GROUP BY clause.

100.If I have a view which is a join of two or more tables, can this view be updatable? - GS

No.

101.What are the 4 environments which can access DB2 ?

TSO, CICS, IMS and BATCH

102.What is an inner join, and an outer join ?

Inner Join: combine information from two or more tables by comparing all values that meet the search criteria in the designated column or columns of one table with all the values in corresponding columns of the other table or tables. This kind of join which involves a match in both columns are called inner joins.

Outer join is one in which you want both matching and non matching rows to be returned. DB2 has no specific operator for outer joins, it can be simulated by combining a join and a correlated sub query with a UNION.

103.What is FREEPAGE and PCTFREE in TABLESPACE creation?

PCTFREE: percentage of each page to be left free

FREEPAGE: Number of pages to be loaded with data between each free page

104.What are simple, segmented and partitioned table spaces ?

Simple Tablespace:

Can contain one or more tables

Rows from multiple tables can be interleaved on a page under the DBAs control and maintenance

Segmented Tablespace:

Can contain one or more tables

Tablespace is divided into segments of 4 to 64 pages in increments of 4 pages. Each segment is dedicated to single table. A table can occupy multiple segments

Partitioned Tablespace:

Can contain one table

Tablespace is divided into parts and each part is put in a separate VSAM dataset.

105. What is filter factor?

one divided by the number of distinct values of a column.

106. What is index cardinality? - GS

The number of distinct values a column or columns contain.

107. What is a synonym ?

Synonym is an alternate name for a table or view used mainly to hide the leading qualifier of a table or view.. A synonym is accessible only by the creator.

108. What is the difference between SYNONYM and ALIAS?

SYNONYM: is dropped when the table or tablespace is dropped. Synonym is available only to the creator.

ALIAS: is retained even if table or tablespace is dropped. ALIAS can be created even if the table does not exist. It is used mainly in distributed environment to hide the location info from programs. Alias is a global object & is available to all.

109. What do you mean by NOT NULL WITH DEFAULT? When will you use it?

This column cannot have nulls and while insertion, if no value is supplied then it will have zeroes, spaces or date/time depending on whether it is numeric, character or date/time.

Use it when you do not want to have nulls but at the same time cannot give values all the time you insert this row.

110. What do you mean by NOT NULL? When will you use it?

The column cannot have nulls. Use it for key fields.

111. When would you prefer to use VARCHAR?

When a column which contains long text, e.g. remarks, notes, may have in most cases less than 50% of the maximum length.

112. What are the disadvantages of using VARCHAR?

1. Can lead to high space utilization if most of the values are close to maximum.
2. Positioning of VARCHAR column has to be done carefully as it has performance implications.
3. Relocation of rows to different pages can lead to more I/Os on retrieval.

113. How do I create a table MANAGER ( EMP#, MANAGER) where MANAGER is a foreign key which references to EMP# in the same table? Give the exact DDL.

First CREATE MANAGER table with EMP# as the primary key. Then ALTER it to define the foreign key.

114. When is the authorization check on DB2 objects done - at BIND time or run time?

At run time.

115. What is auditing?

Recording SQL statements that access a table. Specified at table creation time or thru alter.

1.How do you place the cursor on a particular position on the screen? - GS

Move -1 to the length attribute of the field and use the CURSOR option.

Define the field with IC in the BMS map.

Use CURSOR(n m)??

2.What are the two outputs created as a result of generation of a map? - GS

The map copybook and the load module.

3.What is the difference between physical map and symbolic map? - GS

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

4.How do you protect a field from being overlaid? - GS

5.What is the attribute byte? - GS

Defines the display/transmission of field. most cases is an output field from the program.

6.How do you use extended attributes ?

Define EXTATT=YES and the correct terminal type.

7.What are the 3 working storage fields used for every field on the map? - GS

Length, attribute and input/output field.

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

Modified Data Tag. Bit in the attribute byte indicating modification of field on screen. Happens on an input operation.

FSET. Sets MDT on to ensure field is transmitted. Happens on an output operation.

FRSET. Resets MDT. Until this happens, field continues to be sent.

9.What is the use of DSECT parameter in BMS?

Is the parameter to generate a symbolic map.

10.Do you receive the attribute byte in the symbolic map?

On EOF yes.

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

Use ASIS???

12. What is effect on RECEIVE MAP when

- PF key is pressed? Data transmission may happen,
- PA key is pressed? Data transmission will not happen.
- .

13. What are SEND MAP MAPONLY & SEND MAP DATAONLY ?

14. What is the difference between a PF key & a PA key ?

PF keys wake up the task and transmit modified data, PA keys only wake up the task.

15. Name the macros used to define the following:

MAP MAPSET FIELD

DFHMSD DFHMDI DFHMDF

16. Can you use OCCURS in a BMS map? If you do, what are the issues related with its use?

Yes. cannot use group by clause???

17. Can you define multiple maps in a BMS mapset?

Yes.

18. How is the storage determined in the symbolic map, if you have multiple maps?

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

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

Data was not entered in the field

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

No, not if ERASE EOF was used.

21. What do you do if you do not want characters entered by the user to be folded to uppercase ?

Use ASIS option on RECEIVE.

22. What does the BUFFER option in RECEIVE mean ?

Brings the entire datastream from the terminal buffer.

23. What are the steps you go through to create a BMS executable?

Assemble to create CSECT and Link

24. When you compile a CICS program, the (pre)compiler puts an extra chunk of code. Where does it get included and what is it called?

What is its length? - GS

DFHEIBLK, DFHCOMMAREA.

25. List all the CICS tables and explain their contents. - GS

PPT SIT

PCT JCT

FCT SNT

DCT SRT

RCT TCT

26. I have written a CICS program. What tables should I setup to run this program? - GS

PPT, PCT, (FCT, DCT, RCT (if needed)).

27. In which table would you make an entry for a BMS map? - GS

PPT

28. What is the content of the PPT entry? - GS

Length, Source, Use count, Lang, Res count DFHRPL number

29. For a CICS-DB2 program, how is the plan referenced? - GS

Uses a RCT table.

30. How is dynamic memory allocated within a CICS application program? - GS

Use a GETMAIN

31. What are the restrictions while using GETMAIN and FREEMAIN? - GS

33. What is the use of a TDQ, TSQ? - GS

Temporary data stores.

34. How do you read from a TSQ? - GS

Temp storage read command

35. If I create a TSQ from one transaction, can I read it from another transaction? - GS

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

36. What are extra partition & intra partition TDQs?

Extra partition TDQs are datasets used for communication b'n CICS and other CICS/Batch regions. Intrapartition TDQs are queues for communication within regn.

37. What is trigger level in the context of TDQs?

For intrapartition TDQs specify the # records at which ATI happens.  
not applicable for extra partition TDQs.

38. How do you fire a batch job from a CICS txn ?

Define an extrapartition TDQ as an internal reader and write the JCL to it. Terminate the JCL with /\*EOF.

39. What is ATI? What kind of TDQ can be used?

Automatic Task Initiation. Intra partition TDQ.

40. Do you require a table entry for a TSQ?

If recovery is needed.

41. Is there any entry for TSQs in CICS tables?

Yes in the DFHTST.

42. What is the use of DCT?

Destination Control Table used to define TDQs

43. What is ENQ, DEQ ?

Task control commands to make resources serially reusable.

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

45. Can you issue SQL COMMIT from a CICS program? - GS

Yes.

46. What is the other way of terminating a transaction? - GS

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

47. What is an ASRA abend ?

Any data exception problem SOC7, SOC4 etc.

48. What is an AEY9 abend ?

DB2/IDMS not up.

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

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

50. What is 2 phase commit?

51. What is EXEC CICS RETRIEVE ?

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

52.Name some important fields in the EIB block ?

EIBRESP, EIBCALEN, EIBRRCDE, EIBTASK, EIBDATE, EIBTIME

53.Can you use DYNAMIC calls in CICS ?

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

54.How do you handle errors in CICS pgms ?

Check EIBRESP after the call or use the HANDLE condition.

55.Suppose pgm A passes 30 bytes to pgm B thru commarea and pgm B has defined its DFHCOMMAREA to be 50 bytes . Is there a problem ?

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

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

No, No, Yes.

57.How do you execute a background CICS txn ?

With a START or ATI.

58.Can a CICS region be attached to more than one DB2 subsystem ?

59.What determines the DB2 subsystem to which a particular CICS region is attached ?

60.What is the DSNB transaction used for ?

61.How do you handle error in a CICS program?

Same as 36.

62.What is the difference between START and XCTL ?

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.

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

Language interface and call parameters???

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

Yes. Needs to be preprocessed.



65.What is an AICAabend?  
Runaway Task.

66.How would you resolve an ASRAabend?  
In COBOL II start with CEBR, and get the offset/instruction.

67.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?  
Junk may get moved in. Will cause Storage violation. ????

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

69.When you do a START, what will the value of EIBCALEN?  
Zero.

70.How are VSAM files Read in CICS pgms? - GS  
File Control Commands. Random, Sequential, forward and backward.

71.How will you access a VSAM file using an alternate index?  
Thru the path. Define path as an FCT and use normal File control  
commands.

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

73.I have done a START BROWSE on a VSAM dataset. Can I do another  
START BROWSE without doing an END BROWSE?  
No.

74.Can you access QSAM (seq ) files from CICS ?  
No.

75.Can you access ESDS files from CICS ?  
Yes.

=====

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? 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. E) 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, XTIOAPFX=YESMAP1 DFHMDI SIZE=(24,80) DFHMDI POS=(5,1), ATTRB=UNPROT, LENGTH=1 FIELD2 DFHMDI POS=(5,3), ATTRB=UNPROT, LENGTH=1 FIELD3 DFHMDI POS=(5,5), ATTRB=(UNPROT, IC), LENGTH=1 FIELD4 DFHMDI POS=(5,7), ATTRB=ASKIP, LENGTH=1 FIELD5 DFHMDI POS=(5,9), ATTRB=UNPROT, LENGTH=1, INITIAL='Z' DFHMDI POS=(5,11), ATTRB=ASKIP, LENGTH=1 DFHMSD TYPE=FINAL A) In the field with a POS=(5,1) B) In FIELD2. C) In FIELD3. D) In FIELD4. E) In FIELD5.

Answer: E) In FIELD5

Question: How can you accomplish brackpoint in intertest?

Answer: U-for unconditional brackpoint, C-for conditional brackpoint, and A-for automatic brackpoint

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 destructive.

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 item OR when arithmetic calculations performed on nonnumeric data item OR when an attempt made to read an occurrence of a table beyond the defined occurrences. 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: Answer to ANON's 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: I just wanted to add something to the answer given by Brian on June 25, 1998 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 delete the records sequentially.. For example if one wants to delete 10th record directly it is not possible with this..

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Answer: Answer: READQ TD, the read is destructive. Yes it is correct but there is a restriction. U 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.

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.

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## Q'S ON COBOL

Question: What is the difference between Structured Cobol Programming and Object Oriented COBOL programming ?

Answer: Structured programming is a Logical way of programming, you divide the functionalities into modules and code logically. OOP is a Natural way of programming, you identify the objects first, then write functions, procedures around the objects. Sorry, this may not be an adequate answer, but they are two different programming paradigms which is difficult to put in a sentence or two.

Question: what is difference between next sentence and continue

Answer: They appear to be similar, that is, the control goes to the next sentence in the paragraph. But, Next Sentence would take the control to the sentence after it finds a fullstop (.). Check out by writing the following code example, one if sentence followed by 3 display statements (sorry they appear one line here because of formatting restrictions) If 1 > 0 then next sentence end if display 'line 1' display 'line 2'. display 'line 3'. \*\*\* Note- there is a dot (.) only at the end of the last 2 statements, see the effect by replacing Next Sentence with Continue \*\*\* Hope this helps!

Question: what is difference between next sentence and continue

Answer: i don't know

Question: I understand the possible causes for S0C1 & S0C4 abends, but what are they really?

Answer: A S0C1 occurs if the CPU attempts to execute binary code that isn't a valid machine instruction; e.g. if you attempt to execute data. A S0C4 is a memory protection violation. This occurs if a program attempts to access storage beyond the areas assigned to it.

Question: which type of sort do you know?

Answer: internal sort and external sort.



Question: What is the difference between Structured Cobol Programming and Object Oriented COBOL programming ?

Answer: ?????????

Question: I HAVE HEARD ABOUT VSCOBOL AND COBOL II. IS THERE ANY OTHER CATEGORY/CLASSIFICATION IN COBOL ? KINDLY GIVE ME A DETAILED EXPLANATION. I WOULD ALSO LIKE TO KNOW WHAT COBOL 370 IS.

Answer: ???????????

Question: Can you use INSPECT command under CICS? Is it costly?

Answer:

Question: What is SET Logic TO TRUE?

Answer: ?

Question: PIC S9(4)COMP IS USED INSPITE OF COMP-3 WHICH OCCUPIES LESS SPACE.WHY?

Answer: The Q&A submitted by sivakumar on March 24,1998 is absolutely wrong. Dear Sivakumar, for your kind information: 9(4) COMP uses only 2 bytes and 2 bytes is not = 4 words. 9(4) COMP-3 uses 3 bytes. 3 bytes is more than 2 bytes. Hence COMP is preferred over COMP-3 in this case.

Question: What divisions,sections and paragraphs are mandatory for a COBOL program?

Answer: IDENTIFICATION DIVISION and PROGRAM-ID paragraph are mandatory for a compilation error free COBOL program.

Question: Can JUSTIFIED be used for all the data types?

Answer: No,it can be used only with alphabetic and alphanumeric data types.

Question: Ans we to bala s bandlas question what happens when we move a comp-3 field to an edited ( say z(9).zz-)

Answer: the editing characters r to be used with data items with usage clause as display which is the default.when u try displaying a data item with usage as computational it does not give the desired display format becoz the data item is stored as packed decimal.So if u want this particular data item to be edited u have to move it into a data item whose usage is display and then have that particular data item edited in the format desired.

Question: rrr

Answer: Planning and Implementation Guide for prasad question: On the web at [www.ibm.com/year2000](http://www.ibm.com/year2000) [www.year2000.com](http://www.year2000.com) [www.ita.org/index.html](http://www.ita.org/index.html)

Question: what happens when we move a comp-3 field to an edited ( say z(9).zz- ) ?

Answer: ????

Question: What are the causes for S0C1, S0C4, S0C5, S0C7, S0CB abends

Answer: S0C1 - May be due to 1.Missing or misspelled DD name

2.Read/Write to unopened dataset 3.Read to dataset opened output

4.Write to dataset opened input 5.Called subprogram not foundS0C4 may

be due to 1.Missing Select statement(during compile) 2.Bad

Subscript/index 3.Protection Exception 4.Missing parameters on called

subprogram 5.Read/Write to unopened file 6.Move data from/to unopened file  
S0C5 May be due to 1.Bad Subscript/index 2.Close an unopen dataset 3.Bad exit from a perform 4.Access to I/O area(FD) before read  
S0C7 may be due to 1.Numeric operation on non-numeric data 2.Un-initialize working-storage 3.Coding past the maximum allowed sub script  
S0CB may be due to 1.Division by Zero

Question: Question: What will happen if you code GO BACK instead of STOP RUN in a stand alone COBOL program i.e. a program which is not calling any other program.

Answer: Both give the same results when a program is not calling any other program. The answer given by Mr.Krishnan that when go back is coded the program goes into infinite loop is not correct. Goback will give the control to the system even though it is a single program.

Question: WHAT IS THE DIFFERENCE BETWEEN EXTERNAL AND GLOBAL VARIABLES?

Answer: Global variables are accessible only to the batch program whereas external variables can be referenced from any batch program residing in the same system library.

Question: yOU ARE WRITING REPORT PROGRAM WITH 4 LEVELS OF TOTALS:CITY,STATE,REGION AND COUNTRY. tHE CODES BEING USED CAN BE THE SAME OVER THE DIFFERENT LEVELS, MEANING A CITY CODE OF 01 CAN BE IN ANE NUMBER OF STATES, AND THE SAME APPLIES TO STATE AND REGION CODES  
HOW DO YOU DO YOUR CHEKING FOR BREAKS AND HOW DO YOU DO ADD TO EACH LEVEL?

Answer: ALWAYS COMPARE ON THE HIGHEST LEVEL FIRST, BECAUSE IF YOU HAVE A BREAK AT A HIGHEST LEVEL, EACH LEVEL BENEATH IT MUST ALSO BREAK. ADD TO THE LOWEST LEVEL FOR EACH REC BUT ADD TO THE HIGHER LEVEL ONLY ON A BREAK.

Question: What is difference between COBOL and VS COBOL II?.

Answer: In using COBOL on PC we have only flat files and the programs can access only limited storage, whereas in VS COBOL II on M/F the programs can access upto 16MB or 2GB depending on the addressing and can use VSAM files to make I/O operations faster.

Question: Why occurs can not be used in 01 level ?

Answer: because, Occurs clause is there to repeat fields with same format, not the records.

Question: WHAT IS REPORT-ITEM?

Answer: A REPORT-ITEM IS A FIELD TO BE PRINTED THAT CONTAINS EDIT SYMBOLS

Question: What is PSB & ACB?

Answer: PSB : Program specification block. Infor about how a specific program is to be access one or more IMS DB. It consist of PCB(Prg Communication Block). Information to which which segment in DB can be accessed, what the program is allowed to do with those segment and how the DB is to be accessed. ACB : Access Control Blocks are

generated by IMS as an expansion of information contained in the PSB in order to speed up the access to the applicable DBD's.

Question: Question: What's a LDS(Linear Data Set) and what's it used for ?

Answer: LDS is a VSAM dataset in name only. It has unstructured 4k (4096 bytes) fixed size CIs which do not contain control fields and therefore from VSAM's standpoint they do not contain any logical records. There is no freespace, and no access from Cobol. Can be accessed by DB2 and IMS fast path datasets. LDS is essentially a table of data maintained on disk. The 'table entries' must be created via a user program and can only be logically accessed via a user program. When passed, the entire LDS must be mapped into storage, then data is accessed via base and displacement type processing.

Question: answer to anon question for difference between next and continue clause

Answer: FOR ANON , Dear friend the difference between the next and continue verb is that in the continue verb it is used for a situation where there is no eof condition that is the records are to be accessed again and again in an file , whereas in the next verb the indexed file is accessed sequentially ,hence when index clause is accessed sequentially read next record command is used,i hope that is satisfactory

Question: What is the Importance of GLOBAL clause According to new standards of COBOL

Answer: When any data name, file-name , Record-name, condition name or Index defined in an Including Program can be referenced by a directly or indirectly in an included program, Provided the said name has been declared to be a global name by GLOBALFormat of Global Clause is01 data-1 pic 9(5) IS GLOBAL.

Question: What is the Purpose of POINTER Phrase in STRING command

Answer: The Purpose of POINTER phrase is to specify the leftmost position within Receiving field where the first transferred character will be stored

Question: How do we get currentdate from system with century?

Answer: By using Intrinsic function, FUNCTION CURRENT-DATE

Question: what is the difference between search and search all in the table handling?

Answer: search is a linear search and search all is a binary search.

Question: What is the maximum length of a field you can define using COMP-3?

Answer: 10 Bytes (S9(18) COMP-3).

Question: What will happen if you code GO BACK instead of STOP RUN in a stand alone COBOL program i.e. a program which is not calling any other program.

Answer: The program will go in an infinite loop.

Question: Q.HOW MANY SECTIONS ARE THERE IN DATA DIVISION?.

Answer: SIX SECTIONS1.FILE SECTION2.WORKING-STORAGE SECTION3.LOCAL-STORAGE SECTION4.SCREEN SECTION5.REPORT SECTION6.LINKAGE SECTION

Question: How can I tell if a module is being called DYNAMICALLY or STATICALLY?

Answer: The ONLY way is to look at the output of the linkage editor (IEWL)or the load module itself. If the module is being called DYNAMICALLY then it will not exist in the main module, if it is being called STATICALLY then it will be seen in the load module.Calling a working storage variable, containing a program name, does not make a DYNAMIC call. This type of calling is known as IMPLICIT calling as the name of the module is implied by the contents of the working storage variable. Calling a program name literal (CALL

Question: What is the difference between a DYNAMIC and STATIC call in COBOL.

Answer: To correct an earlier answer:All called modules cannot run standalone if they require program variables passed to them via the LINKAGE section. DYNAMICally called modules are those that are not bound with the calling program at link edit time (IEWL for IBM) and so are loaded from the program library (joblib or steplib) associated with the job. For DYNAMIC calling of a module the DYNAM compiler option must be chosen, else the linkage editor will not generate an executable as it will expect ull address resolution of all called modules. A STATICally called module is one that is bound with the calling module at link edit, and therefore becomes part of the executable load module.

Question: What is the difference between PIC 9.99 and 9v99?

Answer: PIC 9.99is a FOUR-POSITION field that actually contains a decimal point where as PIC 9v99 is THREE-POSITION numeric field with implied or assumed decimal position.

Question: How is PIC 9.99 is different from PIC 9v99?

Answer: PIC 9.99 is a four position field that actually contains a decimal point where as 9v99 is a three position numeric field with an implied or assumed decimal point.

Question: what is Pic 9v99 Indicates?

Answer: PICTURE 9v99 is a three position Numeric field with an implied or assumed decimal point after the first position; the v means an implied decimal point.

Question: WHAT GUIDELINES SHOULD BE FOLLOWED TO WRITE A STRUCTURED COBOL PRG'M?

Answer: 1) USE 'EVALUATE' STMT FOR CONSTRUCTING CASES. 2) USE SCOPE TERMINATORS FOR NESTING. 3)USE IN LINE PERFORM STMT FOR WRITING 'DO ' CONSTRUCTIONS. 4)USE TEST BEFORE AND TEST AFTER IN THE PERFORM STMT FOR WRITING DO-WHILE CONSTRUCTIONS.

Question: read the following code. 01 ws-n pic 9(2) value zero. a-para move 5 to ws-n. perform b-para ws-n times.b-para. move 10 to ws-n.how many times will b-para be executed ?

Answer: 5 times only. it will not take the value 10 that is initialized in the loop.

Question: What is the difference between SEARCH and SEARCH ALL? What is more efficient?

Answer: SEARCH is a sequential search from the beginning of the table. SEARCH ALL is a binary search, continually dividing the table in two halves until a match is found. SEARCH ALL is more efficient for tables larger than 70 items.

Question: What are some examples of command terminators?

Answer: END-IF, END-EVALUATE

Question: What care has to be taken to force program to execute above 16 Meg line?

Answer: Make sure that link option is AMODE=31 and RMODE=ANY. Compile option should never have SIZE(MAX).BUFSIZE can be 2K, efficient enough.

Question: Give some advantages of REDEFINES clause.

Answer: 1. You can REDEFINE a Variable from one PICTURE class to another PICTURE class by using the same memory location. 2. By REDEFINES we can INITIALISE the variable in WORKING-STORAGE Section itself. 3. We can REDEFINE a Single Variable into so many subvariables. (This facility is very useful in solving Y2000 Problem.)

Question: Why do we code s9(4)comp. In spite of knowing comp-3 will occupy less space.

Answer: Here s9(4)comp is small integer, so two words equal to 4 bytes totally it will occupy 2 bytes (4 words). Here in s9(4) comp-3 as one word is equal to 1/2 byte. 4 words equal to 2 bytes and sign will occupy 1/2 byte so totally it will occupy 3 bytes.

Question: The maximum number of dimensions that an array can have in COBOL-85 is \_\_\_\_\_.

Answer: SEVEN in COBOL - 85 and THREE in COBOL - 84

Question: What is the LINKAGE SECTION used for?

Answer: The linkage section is used to pass data from one program to another program or to pass data from a PROC to a program.

Question: Describe the difference between subscripting and indexing

Answer: Indexing uses binary displacement. Subscripts use the value of the occurrence.

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Q'S ON JCL

Question: Can you execute a PROC from another PROC? (Entered on:

November 27, 1999 by lugo)

Answer: Nesting is allowed. I think upto 15 levels. Please check out.

Question: What is a DD statement?

Answer: Data Definition

Question: Can you execute a PROC from another PROC?

Answer: I did not know the answer and my interviewer said NO. Later I tried and executed PROC from a PROC, three levels deep. Manuals do not state any limit on PROC calling PROC, or nesting.

Question: what is dd statement

Answer: lkjkj

Question: what is dd statement

Answer: ddd

Question: What will happen if you attempt to restart a job in the middle of a JCL // IF .... // ENDIF?

Answer: Job will fall through to the ENDIF (not executing any steps), then resume execution with the first step AFTER the // ENDIF.

Question: WHAT IS A FILE?

Answer: A FILE IS A COLLECTIVE GROUP OF RECORDS. THE NUMBER OF RECORDS ON A FILE DEPENDS ENTIRELY ON THE APPLICATION ASSOCIATED WITH THE FILE. FILES MAY CONTAIN A FEW RECORDS, THOUSANDS, OR EVEN MILLIONS OF RECORDS.

Question: HOW MANY POSITIONAL PARAMETERS ARE THERE IN JOBSTATEMENT?

Answer: THERE ARE TWO POSITION PARAMETERS IN JOB STATEMENT.

Question: What are three parameters you can specify on Job statement as well as on exec stmt ?

Answer: Time , Region and Cond parameters

Question: How can you trap abends in the JCL?

Answer: Use IF ABEND statement in the JCL.

Question: How do you restart a step in JCL?

Answer: Use RESTART=step name.

Question: how do you pass parameters to the program as the job is being executed ?

Answer: by using 'parm' parameter in exec statement. the value mentioned here should be declared in linkage section in the program and process thru procedure division. this technique is very useful when you do not know the parameters at the time of coding the programs.

Question: Why do you use a controlcard?

Answer: A controlcard can be a member of a pds or a sequential dataset and is used for storing the data fields, Definitions of VSAM files....etc. You use controlcard because you cannot use an instream procedure in a procedure. Generally you will be calling a Proc from your Jcl and you cannot code instream procedure in the Proc and so you will point to the dataset which is called controlcard.

Question: How do you submit JCL via a Cobol program? For the above question the solution is as follows..

Answer: In your JCL define as//JOBA JOB 1111,JOB1//STEP01 EXEC PGM=PROG1//ddname DD SYSOUT=(\*,INTRDR)....and your COBOL(PROG1) should look like thisSELECT JCL-FILE ASSIGN TO ddname.Open this file and write the JCL statements into this file.Example.MOVE '//TESTJOB JOB 1111,VISVEISH' TO JCL-REC.MOVE '//STEP01 EXEC PGM=IEFBR14' TO JCL-REC.and close this file.Then TESTJOB will be submitted.

Question: How do you submit a JCL under CICS environment?

Answer: pass all the jcl codes to a COBOL variable (should be declare using OCCURS clas) and the write the line one by one to the spool using CICS commands like SPOOLClose SPOOLOpen SPOOLWrite. For more help reffer CECI of CICS or CICS manual

Question: What is the parameter to be passed in the job card for the unlimited time , irrespective of the job class

Answer: TIME=1440

Question: Definition of COND p-r in JCL and a correction to a previously posted question

Answer: COND is a condition parameter, consists of 2 subparameters, 1st - return code from the previous step, 2nd - condition. If COND is true, the step on which COND is coded will be BYPASSED.

Question: Q) WHAT IS MEANT BY S07C AND S0C30 SYSTEM ABEND CODES (QUESTION ASKED BY Mr. PRAVEEN)?

Answer: A) S0C7 - Data exception error - you will get it whenever you are trying to move the low values or spaces into the numeric field, or compare the numeric fields with low values, or try to do some arithmetic operations on the low values. To avoid this you have to always initialize the numeric fields otherwise they will contain the low values.S0C 30 - I have never heard of it, let you know if I come accross it.

Question: How to pass the temp dataset form one JOB step to another?

Answer: By specifying the DISP as PASS for the temp dataset

Question: What is a COND parameter in JCL?

Answer: COND means condition parameter. It is compared with systemreturn code of previous step.//step1 exec pgm=abcd//step2 exec pgm=xyz, cond=(4,lt)step2 will be executed when system return code of step1 isless than 4.

Question: WRITE A JCL TO EXECUTE A JOB BY 7 A.M ON JAN 20,1986 ?

Answer: THE code IS : //\*MAIN DEADLINE=(0700,B,012086)

Question: HOW MANY TYPES OF LIBRARIES ARE THERE IN JCL ?

Answer: LIBRARIES ARE OF THREE TYPES.1.SYTEM LIBRARIES: SUCH AS SYS1.LINKLIB2.PRIVATE LIBRARIES: SPECIFIED IN A JOBLIB OR STEPLIB DD STATEMENTS.3.TEMPORARY LIBRARIES:CREATED IN A PREVIOUS STEP OF THE JOB.

Question: WHAT U MEAN BY INCLUDE STATEMENT IN JCL ?

Answer: AN INCLUDE STATEMENT IDENTIFIES A MEMBER PF A PDS OR PDSE THAT CONTAINS.THIS SET OF JCL STATEMENTS IS CALLED AN INCLUDE GROUP.THE SYSTEM REPLACES THE INCLUDE STATEMENT WITH THE

## STATEMENTS

### IN THE INCLUDE GROUP.

Question: THE MAXIMUM NUMBER OF IN-STREAM PROCEDURE YOU CAN CODE IN ANY JCL IS ?

Answer: 15.

Question: What you mean by skeleton JCL?

Answer: Jcl which changes during run time ie the values for the jcl such as pgm name ,dd name will change .ie same jcl can be used for various job, equivalent to dynamic sql...

Question: How do you submit a JCL under CICS environment ?

Answer: Edit the JCL in Extra partition TDQ and submit the same using some system command (not sure) under CICS subsystem. This is what i think, please clarify....

Question: what is jcl

Answer: it is interface between operating system(mvs) & application program. when 2 related programs are combined together on control statements is called job control language

Question: What is the max blocksize for a Tape file?

Answer: It is 32,760. Based on that we can calculate efficient number of Records in a Block

Question: What are the basic JCL Statements for a Job?

Answer: 1.JOB : Identifies a job and supplies accounting info 2.EXEC : Identifies a job step by indicating the name of the program to be executed. 3.DD : Identifies a data set to be allocated for the job step 4.Delimiter (/): Marks the end of an in-stream dataset 5.Null (//): Marks the end of a job 6.Comments(//): Provides Comments 7.PROC : Marks the beginning of a procedure 8.PEND : Marks the end of a procedure 9.OUTPUT: Supplies options for SYSOUT processing.

Question: What does the statements: typrun=scan and typrun=hold do in a JCL statement

Answer: typrun=scan checks the JCL for errors, typrun=hold holds the job until further notice.

Question: Which of the following is Online transaction? CICS, DB2 and JCL

Answer: CICS

Question: How many PERFORM's are there in COBOL-II?

Answer: 5

Question: which is the most widely used batch performance monitor for DB2?

Answer: DB2PM

Question: What is QSAM error usually when it occurs?

Answer: Usually it occurs at the time of job submission.

Question: what is the purpose of include statement in a jcl?

Answer: It is used as an alternative for steplib. When we specify the dataset name in include ,it will search in all the datasets specified



in the include dataset.

Question: IS IT POSSIBLE TO KNOW THE REMAINING FREE SPACE IN AN CONTROL INTERVAL/CONTROL AREA ONCE AN INSERTION HAS BEEN MADE.

Answer: NOT POSSIBLE

Question: what does soc04 error mean?

Answer: this error is faced when we execute the cobol program.the main reason for this error is that a variable is defined with less characters and we are trying to move data which is larger than the actual storage space.

Question: What is JCL

Answer: JCL is Job Control Language and is used for Batch processing. The startup procedures of OS and standard products like CICS etc are written in JCL.

Question: In which table PLAN is registered in ?

Answer: RCT

Question: GDG?

Answer: GDG - group of dataset that are logically or chronologically related, referred by name and a relative generation number - an integer which identifies the generation of a dataset and is coded in parentheses after dataset name. Absolute GDG name - GxxxxVyy, where xxxx-absolute gen.number, yy-version number. Can be sequential, direct, partitioned. (VSAM - no). Must always be cataloged.

Advantage - all datasets have the same name and system keeps track of adding new and retaining previous generations and deleting oldest successive generation. To create a GDG we create a GDG index in the system catalog with IDCAMS utility and then a model (prototype, DSCB) on the same volume to supply DCB information. Empty - when limit is reached all members are removed from the index, otherwise-only oldest. Scratch-removed members are uncataloged & deleted, otherwise - removed & uncataloged, but remain in the system (not members of GDG any more). GDG number is updated at the end of the job. If number is not specified all generations will be processed from the beginning

Question: what is jcl

Answer: it is used to communicate between the terminals.

Question: what do you mean By spooling? Expand SPOOL?

Answer: This is managed by JES.This is used for Queuing the Outputs that are intended for Printing and are first stored in SPOOLDASD.

This can be managed Using

Question: How many Instream-Procedures(procs) can be Coded in a single Job?

Answer: The Answer is: 15

Question: FOR HOW LONG A JOB CAN BE EXECUTED CONTINUEOUSLY IN A MAINFRAME

Answer: 248 DAYS

Question: How may divisions are there in JCL-COBOL?

Answer: SIX

Question: MAX. NO OF DD STATEMENTS IN A JOB

Answer: 3273

Question: HOW MUCH SPACE OS ALLOCATES WHEN YOU CREATE A PS OR PDS?

Answer: 56 KB

Question: MIN NO OF DATASET NAMES(PDS) IN ONE DIRECTORY BLOCK?

Answer: SIX

Question: THE MAXIMUM NUMBER OF STEPS IN A JOB?

Answer: 255

Question: How much is memory space involved, when we code  
BLOCKSIZE,TRK & CYL

Answer: One block constitutes 32KB of formatted memory/ 42KB of  
Unformatted memory,6 blocks makes one Track & 15 Tracks makes one  
cylinder.

Question: Corrections in the answers.

Answer: I think the answer for the question by Kyati on march 19/1998  
about Maximum number of extents in secondary allocation is 16 & not  
one.I think there is a missing Disposition parameter for the question  
by Anon on march 11/1998-- Please add PASS.

Question: What is DSNDB06 ?

Answer: This is the Place where DB2 Catalog resides

Question: What is the use of DSNDB07 ?

Answer: This is the area where sorting takes place in DB2

Question: What is the purpose of Identification Division?

Answer: Documentation.

Question: What is JCL?

Answer: job control language

Question: WHAT IS DATACOM DB?

Answer: IT IS A DATABASE USED WITH VSE.

Question: What is a Dummy Utility and what it does ?

Answer: IEFBR14 is a Dummy utility and it is used for the sake of EXEC  
PGM= .... statment in JCL[when used it wouldn't perform any task].  
e.g. While Allocating a dataset you don't have to run any utility  
[this could be done by giving disp=new in DD statment]. But for a PGM  
name must be given in EXEC statment, it is used.

Question: What 3 guidelines do we have to follow when concatenating  
DD statements?

Answer: 1. Datasets must be of the same type (disk or tape) 2. All  
datasets must have the same logical record length 3 The dataset with  
the largest blocksize must be listed first.

Question: On the DD statement, what is the main difference between  
creating a new sequential flat file and a partitioned dataset?

Answer: SPACE=(n,m) for a sequential file, SPACE=(n,m,p) for a PDS  
where n, m, and p are numbers. The p designates how many directory  
blocks to allocate.

Question: What is the difference between IEBGENER, IEBCOPY and REPRO  
in IDCAMS utility?

Answer: IEBGENER -- This is a dataset utility for copying sequential datasets which produces a PDS or a member from a sequential dataset. IEBCOPY -- This is a dataset utility for copying one PDS to another or to merge PDSs. REPRO -- This is for copying sequential datasets. More or less same as the IEBGENER. RAVI

Question: How do you submit JCL via a Cobol program?

Answer: Use a file //dd1 DD sysout=(\*,intrdr) write your JCL to this file. Pl some one try this out.

Question: How to execute a set of JCL statements from a COBOL program

Answer: Using EXEC CICS SPOOL WRITE(var-name) END-EXEC command. var-name is a COBOL host structure containing JCL statements.

Question: What is the difference between static call & Dynamic call

Answer: In the case of Static call, the called program is a stand alone program, it is an executable program. During run time we can call it in our called program. As about Dynamic call, the called program is not an executable program it can be executed thru the called program

Question: What is the difference between cataloged procedure and In-Stream procedure?

Answer: In Stream procedures are set of JCL statements written between JOB and EXEC statements, start with PROC and end with PEND statement. Mainly used to test cataloged procedures. Cataloged procedure is cataloged on the procedure library and is called by specifying the procedure name on the EXEC statement.

Question: What do you feel makes a good program?

Answer: a program that follows a top down approach. It is also one that other programmers or users can follow logically and is easy to read and understand.

Question: can we browse or edit the GDG dataset if it is a tape entry?

Answer: No,

Question: What are the maximum and minimum sizes of any CONTROL AREA (VSAM datasets) ?

Answer: Minimum Size : 1 track Maximum size : 1 cylinder

Question: HOW TO GET CURSOR POSITION FROM SYSTEM IN CICS ENVIRONMENT ?

Answer: GET IT FROM EIBCURPOS !

Question: How many parameters are there to a DISP statement and what are their uses.

Answer: There are three(3) parameters. Parameter 1: current data set disposition(new, shr, old, mod) Parameter 2: normal close action for data set (catlg, keep, delete) Parameter 3:abend action for data set (catlg, keep, delete).

Question: What is the error code SOC01 indicate ?

Answer: Operation exception error For eg a dataset open error

Question: WHAT IS COMM?

Answer: COMM - HALF WORD BINARY

Question: What is a procedure?

Answer: A set of precoded JCL that can be modified through the use of parameters or override cards. Note: Procedures can be catalogued or instream.

Question: What is the difference between specifying DISP=OLD and DISP=SHR for a dataset?

Answer: OLD specifies exclusive use of a dataset, SHR allows multiple jobs to concurrently access the dataset Note: When updating a dataset, you would normally use OLD.

Question: What are the three basic types of statements in a jobstream?

Answer: JOB(one per jobstream)EXEC(one or more per job)DD(one or more per jobstep)

Question: What does SYSIN \* indicate?

Answer: Instream data follows this card and is terminated when followed by a card containing // or /\* in columns 1 and 2.

Question: What are three major types of JCL statements? What are their functions?

Answer: JOB, EXEC, DD. JOB - indicates start of jobstream to the operating system and through parms coded on it, certain details about the job (time, region, message level, job accounting data). EXEC - indicates the start of execution of a particular job step, be that step a program or a proc.DD - is a data definition, which is used to describe the attributes of a data set (name, unit, type, space, disposition).

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## QUESTIONS

1) Can we override different data sets which are concatenated(3rd)?

Ans : Yes . We have to maintain the order

2)Tsqr and TDQ.

3)Force and Purge (difference)

Ans: Consider using the FORCE command as a last resort when the CANCEL command still fails to perform its function after you have issued it several times. FORCE is not a substitute for CANCEL. Unless you issue CANCEL first for a cancelable job, the system issues error message IEE838I. The steps to use in the process are:

4)SYMBOLIC PARAMETERS.

5)Difference b/w ISAM and VSAm files.

6)Difference between SYSABEND and SYSDUMP

SYSABEND DD

statement

Produces a dump of user and system areas; this dump contains all the areas dumped in a SYSUDUMP

SYSMDUMP DD

statement

Produces a dump of the system areas and the program's address space The dump is unformatted and machine-readable; to be used, it must be printed by the interactive problem control system (IPCS).

SYSUDUMP DD statement

Produces a dump of user areas. The dump is formatted, so that it can be printed directly.

8)SYSin in proc

Ans: Sysin cannot be used in instream procedure. They can be used only in cataloged procedures.

9)Cursor positioning -Different ways.

How to position it randomly on some space on screen.

Ans: (i) Code IC attribute in the field for initial positioning.

(ii) Move -1 to the length field of the symbolic map field.

(Each field has 3 parts, length, attribute and data).

10)How you debug the program using Xpeditor CICS.

11)What are the ways to debug CICS with out debugging tool.

Ans: CEDF and TSQ.

12)What is the Version Control tool

Ans: Changeman, Endeavour, etc. Endeavour maintains versions for all test, development and prod. datasets, but Changeman maintains versions only when it is baselines, i.e. moved to production.

13) GDG Base created. Can we have diff. length records as versions.

How you are going to handle in the program considering they are fixed block records.

14)What you do for data integrity in VASM files in CICS program.

15)You want to edit the data in VASM file (Which is CICS region)how you do that?

16)what is the significance of 49 level item in DB2.

Ans:-VARCHAR and VAR GRAPHIC data.: first 49 level contains the length of the field and the second 49 level Contains the actual data.

17) How to count the records in temp file.

18) What happens if you don't close the cursor?

Ans: If you want to use the cursor(re-open) again, it will give an error. Incase of no reuse, DB2 will close the cursor when the program terminates.

19) Can we use working storage variables instead of DCLGEN variables in DB2 application program?

Ans: Yes, we can use provided the data type and length matches.

20)When you will get SOC04 and SOC 01.

Ans:

21) How you will recognize weather a program is called dynamically or statically by just observing the code.

Ans : You can specify both static and dynamic CALL statements in the same program if you compile the program with the NODYNAM compiler option. In this case, with the CALL literal statement the called subprogram will be link-edited with the main program into one load module. The CALL identifier statement results in the dynamic invocation of a separate load module.

22) How you will come to know whether it is called or calling program by seeing the code.

Ans: No specific source code statements or options identify a COBOL program as a main program or a subprogram.

Whether a COBOL program is a main program or a subprogram can be significant for either of two reasons:

- Effect of program termination statements
- State of the program when it is reentered after returning

23) What CANCEL will do in COBOL.

Ans: The CANCEL statement ensures that the next time the referenced subprogram is called it will be entered in its initial state. After a

CANCEL statement for a called subprogram has been executed, that subprogram no longer has a logical connection to the program. The contents of data items in external data records described by the subprogram are not changed when that subprogram is canceled. If a CALL statement is executed later by any program in the run unit naming the same subprogram, that subprogram will be entered in its initial state. When a CANCEL statement is executed, all programs contained within the program referenced by the CANCEL statement are also canceled. The result is the same as if a valid CANCEL were executed for each contained program in the reverse order in which the programs appear in the separately compiled program. A CANCEL statement closes all open files that are associated with an internal file connector in the program named in the explicit CANCEL statement. Any USE procedures associated with any of these files are not executed.

24) Can you override STEPLIB in JCL.

Ans : Yes

25) How you will override a dataset in proc from a JCL.

Ans: Yes, stepname.ddname dd dsn=datasetname

26) What is FREESPACE.

Ans: FREESPACE(CI-percent[ CA-percent])0 0) specifies the percentage of each control interval and control area that is to be set aside as free space when the cluster is initially loaded, during a mass insert, and after any split of control intervals (CI-percent) and control areas (CA-percent). Empty space in the control interval and control area is available for data records that are updated and inserted after the cluster is initially loaded. This parameter applies only to key-sequenced clusters and relative-record clusters with variable-length records. CI-percent translates into a number of bytes that is equal to or slightly less than the percentage value of CI-percent. CA-percent translates into a number of control intervals that is equal to or less than the percentage value of CA-percent.

27) What is the Special DD name used for DB2 application program JCL (JOB).

(i.e., to pass the Run card)

Ans : SYSTSIN

28) What is SYSIN?

Ans: The SYSIN DD statement is used to identify in-stream data sets.

The

data sets are marked by a DD \* or a DD DATA parameter. Actually,

these  
DD statements can have any DD name and SYSIN can be one of these  
DD  
names.

```
//SYSIN DD  
DATA ,DLM=xx
```

In the above syntax, the following subparameters are  
used:

\* - indicates data than terminates with the /\*  
Statement.  
DATA - indicates the data may contain special  
characters.  
DLM - indicates the two characters in the data that will  
terminate  
the data  
set

30) What are the advantages of PROCEDURES (iePROC)?  
Ans: If the proc is cataloged then multiple JOBS can use it.

31)How you will specify variable length records while creating a VSAM  
file.  
Ans: By specifying AVGREC,MAXREC

32)How you will INVOKE a JCL from COBOL program?

33)How you will maintain data integrity for VSAM files in CICS  
application program.

35)Can you do some thing to maintain DATA integrity while creating  
the VSAM files?

38) What is the use of SET in jcl's (PROC)?  
Ans: To set values for symbolic variables.

39) What is EIBCALEN ?  
Ans: contains the length of the communication area that has been  
passed to the application program from the last program, using the  
COMMAREA and LENGTH options. If no communication area is passed, this  
field contains  
zeros.

COBOL: PIC S9(4)  
COMP. .



40) What are IMBEDD and REPLICATE in VSAM?

Ans: IMBED]NOIMBED : specifies whether the sequence set (the lowest level of the index) is to be placed with the data component. IMBED : specifies that the sequence-set record for each control area is written as many times as it will fit on the first track adjacent to the control area. If the allocation is less than a cylinder, one track will be added to the primary and secondary allocation quantities. USED DURING DEFINING CLUSTER.

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## CICS QUESTIONS

### CICS

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...

EIB Examples

- EIBAID
- EIBCALEN
- EIBDATE

- EIBFN
- EIBRCODE
- EIBTASKN
- Attention-id (1 byte)
- length of DFHCOMMAREA (S9(4) COMP)
- Date when this task started (S9(7) COMP-3, 000yyddd+)
- Function code of the last command (2 bytes)
- Response code of the last command (6 bytes)
- Task number of this task (S9(7) COMP-3)

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 CIC