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CS401 final Term Papers By Axxad

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cs401 current paper 12-Sep-2020

Q) Format of DOS input buffer:

Answer:-

Offset Size Description

00 1 maximum characters buffer can hold

01 1 number of chars from last input which may be recalled

OR number of characters actually read, excluding CR

02 n actual characters read, including the final carriage

return

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Q) Describe MOVS instructions

Answer:- (Page 92) MOVS MOVS transfers a byte or word from the source location DS:SI to the destination ES:DI and updates SI and DI to point to the next locations. MOVS is used to move a block of memory. The DF is important in the case of overlapping blocks.

Q) How interrupts are handled in protected mode & IDTR.

Answer:- (Page 182)

Handling interrupts in protected mode is also different.

Instead of the IVT at physical address 0 there is the IDT

(interrupt descriptor table) located at physical address

stored in IDTR, a special purpose register. The IDTR is

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also a 48bit register similar in structure to the GDTR and loaded with another special instruction LGDT.

Q) VESA service "INT 10 - VESA - Get SuperVGA

Information" uses which registers to return the result?

Answer:- (Page 180) To return the result,

"INT 10 - VESA - Get SuperVGA Information" uses: Return:

AL = 4Fh if function supported AH = status

INT 10 - VESA - Get SuperVGA Information

AX = 4F00h

ES:DI -> buffer for SuperVGA information

Return:

AL = 4Fh if function supported

AH = status

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Q) define interrupt INT 0*80

Answer:-

int 0x80 ; multitasking kernel interrupt

Q) Define HOOKING And Unhooking

HOOKING AN INTERRUPT

To hook an interrupt we change the vector corresponding to that interrupt. As soon as the interrupt vector changes, that interrupt will be routed to the new handler. By hooking this interrupt a debugger can get control after every instruction and display the registers etc

Unhooking Interrupt

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We now add the interrupt restoring part to our program. This code resets the interrupt vector to the value it had before the start of our program.

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Q) INT 14 READ OPERATION from SERIAL PORT

Answer:-

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The BIOS INT 14 provides serial port services. We will use a mix of BIOS services and direct port access for our example.

A major limitation in using BIOS is that it does not allow interrupt driven data transfer, i.e. we are interrupted whenever a byte is ready to be read or a byte can be transferred since the previous transmission has completed. To achieve this we have to resort to direct port access.

Important BIOS services regarding the serial port

INT 14 - SERIAL - READ CHARACTER FROM PORT

AH = 02h

DX = port number (00h-03h)

Return:

AH = line status

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AL = received character if AH bit 7 clear

Q) What is EAX

AX register is extended 32 bit register is renamed as EAX

Q) Define multitasking, its environment and conditions

Answer:-

Multitasking:

*A multitasking environment allows applications to be constructed as a set of independent tasks, each with a separate thread of execution and its own set of system resources. The inter-task communication facilities allow these tasks to synchronize and coordinate their activity.

*Multitasking provides the fundamental mechanism for an application to control and react to multiple, discrete real-

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world events and is therefore essential for many real-time applications.

*Multitasking creates the appearance of many threads of execution running concurrently when, in fact, the kernel interleaves their execution on the basis of a scheduling algorithm. This also leads to efficient utilization of the CPU time and is essential for many embedded applications where processors are limited in computing speed due to cost, power, silicon area and other constraints.

To realize such a system, the following major functional conditions are to be carried out.

A.Process Management

- interrupt handling

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- Task scheduling and dispatch
- create/delete, suspend/resume task
- manage scheduling information - priority, scheduling policy, etc

B. Inter-process Communication and Synchronization

- Code, data and device sharing
- Synchronization, coordination and data exchange mechanisms
- Deadlock and Live-lock detection

C. Memory Management

- Dynamic memory allocation
- Memory locking

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- Services for file creation, deletion, reposition and protection

D.Input/Output Management

- Handles request and release functions and read, write functions for a variety of peripherals

Q) write a program add 10 numbers using register + offset addressing mode in assembly language

CS401 past papers

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Cs401 important topics

Interrupts, INT 1,INT 3, INT 10,INT 13, INT 14,INT

21/service 04

Programmable Interrupt Controller (PIC) and IRQ

Interrupt hooking , Unhooking Interrupt

Terminate and Stay Resident (TSR)

BIOS video services

DOS VIDEO SERVICES

Multitasking complete concept

Chapter 13 (secondary storage)

Serial communication

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IDT (interrupt descriptor table)

Lecture 17

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CS401 VU Current Final Term 2020 (10 September onward)

50 questions

40 mcqs 80% from past papers

1. In truncated file service which register read service and

file attributes

2.SACS instruction works?

3.which interrupt is called scheduler.which main purpose of

that.

4.which interrupt interrupt and control back to dos.write

name of interrupt and service number.

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5. serial port initialization service number and also write

attributes of it with service number those initialize them.

6. physical address bitna tha

7. data movement instruction de v thi un ka bitna tha k kon sy

processor me use hoti hain.

8. code dia hua tha bitna tha k instruction kya kam kr rhi us me.

9. code likhna tha apna name on top of screen show krny ka.

10. code likhna tha aik array ka jis me 128 elements ho har

element 4 byte ka ho or har element ki value 0 ho.

Overall paper bhut easy tha..

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Mcqs past papers sa tha

3marks questions:

Diff between serial and parallel port communication.

How to speed up multitasking.

Ik program code aya tha for cant remember the condition.

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Cs401 today paper 2020

30 se 33 tak mcqs past papers main se the muaaz k

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Baki concept base the

Relationship b/w IRQ and INT

Rotate through carry right

C and pascal convention

Al,Ah .ch ki instructions lekni thi

2 progam the jab krne hi nahi the to pare nahi

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30% mcqs from moaz file

2 short and 2 long also from moaz file

2 from handout

What is Stack overflow

Answer:- (Page 187)

The strong argument in favour of callee cleared stacks is that the arguments were placed on the stack for the subroutine, the caller did not need them for itself, so the subroutine is responsible for removing them.

Removing the arguments is important as if the stack is not cleared or is partially cleared the stack will

eventually become full, SP will reach 0, and thereafter wraparound producing unexpected results.

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Who is responsible for removing the parameter from the stack when we call a function in C and Pascal?

Answer:- (Page 187)

In C the caller removes the parameter while in Pascal the callee removes them. The C scheme has reasons pertaining to its provision for variable number of arguments.

28. DOS allocate memory for program execution and then de-allocate , explain memory management in

DOS (5 marks)

Answer:- (Page 121)

At physical address zero is the interrupt vector table. Then are the BIOS data area, DOS data area, IO.SYS,

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MSDOS.SYS and other device drivers. In the end there is

COMMAND.COM command interpreter. The

remaining space is called the transient program area as

programs are loaded and executed in this area and the

space reclaimed on their exit. A freemem pointer in DOS

points where the free memory begins. When DOS

loads a program the freemem pointer is moved to the end of

memory, all the available space is allocated to it,

and when it exits the freemem pointer comes back to its

original place thereby reclaiming all space. This action

is initiated by the DOS service 4C. The second method to

legally terminate a program and give control back to

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DOS is using the service 31. Control is still taken back but the memory releasing part is modified. A portion of the allocated memory can be retained. So the difference in the two methods is that the freemem pointer goes back to the original place or a designated number of bytes ahead of that old position.

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