SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)
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COIMBATORE-641 035, TAMIL NADU

COURSE NAME : 23ITT202 – COMPUTER ARCHITECTURE

II YEAR/ III SEMESTER

UNIT – V I/O ORGANIZATION, PARALLELISM AND GPU

Topic: Question Bank

PART - A

1.   What is IO mapped input output?
A memory reference instruction activated the READ M (or)WRITE M control line and does not affect the IO device. Separate IO instruction are required to activate the READ IO and WRITE IO lines ,which cause a word to be transferred between the address aio port and the CPU. The memory and IO address space are kept separate.

2.   Specify the three types of the DMA transfer techniques?
--Single transfer mode(cyclestealing mode)
--Block Transfer Mode(Brust Mode)
--Demand Transfer Mode
--Cascade Mode

3.   What is an interrupt?
An interrupt is an event that causes the execution of one program to be suspended and another program to be executed.

4.   What are the uses of interrupts?
*Recovery from errors
*Debugging
*Communication between programs
*Use of interrupts in operating system

5.   Define vectored interrupts.
In order to reduce the overhead involved in the polling process, a device requesting an interrupt may identify itself directly to the CPU. Then, the CPU can immediately start executing the corresponding interrupt-service routine. The term vectored interrupts refers to all interrupthandling schemes base on this approach.

6.   Name any three of the standard I/O interface.
*SCSI (small computer system interface),bus standards

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*Back plane bus standards
*IEEE 796 bus (multibus signals)
*NUBUS & IEEE 488 bus standard

7.   What is an I/O channel?
An i/o channel is actually a special purpose processor, also called peripheral processor.The main processor initiates a transfer by passing the required information in the input output channel. the channel then takes over and controls the actual transfer of data.

8.   Why program controlled I/O is unsuitable for high-speed data transfer?
In program controlled i/o considerable overhead is incurred..because several program instruction have to be executed for each data word transferred between the external devices and MM.Many high speed peripheral; devices have a synchronous modes of operation.that is data transfer are controlled by a clock of fixed frequency, independent of the cpu.

9.   what is the function of i/o interface?
The function is to coordinate the transfer of data between the cpu and external devices.

10.   Name some of the IO devices.
*Video terminals
*Video displays
*Alphanumeric displays
*Graphics displays
* Flat panel displays
*Printers
*Plotters

11.   What are the steps taken when an interrupt occurs?
*Source of the interrupt

*The memory address of the required ISP
* The program counter &cpu information saved in subroutine
*Transfer control back to the interrupted program

12.   Define interface.
The word interface refers to the boundary between two circuits or devices

13.   What is programmed I/O?
Data transfer to and from peripherals may be handled using this mode. Programmed I/O operations are the result of I/O instructions written in the computer program.

14.   What is DMA?
A special control unit may be provided to enable transfer a block of data directly between an external device and memory without contiguous intervention by the CPU. This approach is called DMA.

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PART B

1. .List the different types of interrupts. Explain briefly about mask able interrupt.
2. What is DMA? Explain the block diagram of DMA .Also describe how DMA is used to
3. transfer data from peripherals.
4. Expalin input/output processors