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Define the multitasking (2)
Answer:- Click here for detail
Multitasking is processing multiple tasks at one time

Define the protected mode (3)
Answer:- (Page 175)
Switching processor in the newer 32bit mode is a very easy task. Just turn on the least significant bit of a new register called CR0 (Control Register 0) and the processor switches into 32bit mode called protected mode.

What is disk driver and why disk driver are necessary in BIOS (5)
Answer:- (Page 156)
BIOS disk services used to directly see the data stored in the directory entries by DOS. For this purpose we will be using the BIOS disk services.

Writ the code of break point interrupt routine (5)
Answer: Page 136 (Example 10.2)

Define the trap flag (3)
Answer:- (Page 133)
If the trap flag is set, the after every instruction a type 1 interrupt will be automatically generated. This is like the divide by zero interrupt which was never explicitly invoked but it came itself.

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From what purpose INT 1 is reserved (2)
Answer:- (Page 105)
This interrupt is used in debugging with the trap flag. If the trap flag is set the Single Step Interrupt is generated after every instruction. By hooking this interrupt a debugger can get control after every instruction and display the registers etc.

Write two examples of Instructions relating data movement used in "sun SPARK Processor". (2 Marks)
Answer:- rep

When we multiply two 8 bit numbers, in how many bits there answer will be? (2 Marks)
Answer:-
16 bit

What is trap flag? (2 Marks)
Answer:- rep

Define serial port? (2 Marks)
Difference between serial and parallel communication.
Answer:- (Page 171)
Serial port is a way of communication among two devices just like the parallel port

How to reset disk file system using INT 13 Disk Rest services? (3 Marks)
Answer:- (Page 156)
INT 13 - DISK - RESET DISK SYSTEM
AH = 00h
DL = drive
Return:
CF = error flag
AH = error code

Why IF & TF are cleared? (3 Marks)
Answer:- (Page 133)
The interrupt mechanism automatically clears IF and TF otherwise there would an infinite recursion of the single step interrupt. The TF is set in the flags on the stack so another interrupt will comes after one more instruction is executed after the return of the interrupt.

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Describe "Indexed Register Indirect + offset" addressing mode with example? (3 Marks)
Answer:- (Page 136)
An index register is used with a constant offset in this addressing mode. The value contained in the index register is added with the constant offset to get the effective address. For example "mov [si+300], ax" moves the word contained in AX to the offset attained by adding 300 to SI in the current data segment and the instruction "mov [di+300], al" moves the byte contained in AL to the offset attained by adding 300 to DI in the current data segment.

Write the algorithm of bubble sort in your words? (5 Marks)
Answer:- (Page 46)
In this algorithm we compare consecutive numbers. If they are in required order e.g. if it is a descending sort and the first is larger then the second, then we leave them as it is and if they are not in order, we swap them. Then we do the same process for the next two numbers and so on till the last two are compared and possibly swapped.

List only five BIOS video services used in text mode? (5 Marks)
Answer:- (Page 149)
INT 10 - VIDEO - SET TEXT-MODE CURSOR SHAPE
INT 10 - VIDEO - SET CURSOR POSITION
INT 10 - VIDEO - SCROLL UP WINDOW
INT 10 - VIDEO - SCROLL DOWN WINDOW
INT 10 - VIDEO - WRITE STRING

Write main characteristic of SUN SPARK Processor? (5 Marks)
Answer:- rep

Write the code of "break point Interrupt routine". (5 Marks)
Answer:- rep

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1. Define multitasking? 3 marks
Answer:- rep

2. What is the function of selector and descriptor? 3 marks
Answer:- rep

4 what is the difference in Motorola 64 k and x86 processors? 5 marks
Answer:- (Page 191)
The instructions are very similar however the difference in architecture evident. 68K processors have 16 23bit general purpose registers named from A0-A7 and D0-D7. A0-A7 can hold addresses in indirect memory accesses. These can also be used as software stack pointers. Stack in 68K is not as rigit a structure as it is in x86.

5. Which register is called a scratch register? 2 marks
Answer:- (Page 187)
EAX, ECX, EDX, FS, GS, EFLAGS, and any other registers.

What is scheduler
Answer:- (Page 141)
INT 08 that is saving and restoring the registers is called the scheduler.

VESA INT 10 service
Answer:- (Page 180)
INT 10 – VESA – Get SuperVGA Infromation
INT 10 – VESA – Get SuperVGA Mode Information
INT 10 – VESA – Set VESA Video Mode

Draw the DB-9 pin Connector and writ each PIN
Answer:- rep

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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 needed 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. This is called stack overflow.

Difference between naming conversion of C language & Pascal (5).

Answer:- (Page 187)

C pretends an underscore to every function or variable name while Pascal translates the name to all uppercase. C++ has a weird name mangling scheme that is compiler dependent. To avoid it C++ can be forced to use C style naming with extern "C" directive.

Difference between Data Bus & Control bus (5).

Answer:- (Page 9)

Data bus is used to move the data from the memory to the processor in a read operation and from the processor to the memory in a write operation. While one line of the bus is used to inform the memory about whether to do the read operation or the write operation. These lines are collectively known as the control bus

Define protected mode (3)

Answer:- rep

In what order C & Pascal instruction are passed to routines. (3).

Answer:- (Page 187)

In C parameters are pushed in reverse order with the rightmost being pushed first. While in Pascal they are pushed in proper order with the leftmost being pushed first.

Describe Debugger in the term of Trap Flag (5).

Answer:- (Page 133)

If the trap flag is set, the after every instruction a type 1 interrupt will be automatically generated. The debugger is made using this interrupt. It allows one instruction to be executed and then return control to us. It has its display code and its code to wait for the key in the INT 1 handler. Therefore after every instruction the values of all registers are shown and the debugger waits for a key.

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Define Multithreading (3).
Answer:- rep

What the processor vision about video devices. (3).
Answer:- (Page 80)
The video device is seen by the computer as a memory area containing the ASCII codes that are currently displayed on the screen and a set of I/O ports controlling things like the resolution, the cursor height, and the cursor position.

lds si, [bp+4] from DS and SI will load? (2)
Answer:- (Page 97)
lds si, [bp+4]" will load SI from BP+4 and DS from BP+6.

What is processor control block answer in one line (2).
Answer:- (Page 140)
The space where all registers of a task are stored is called the process control block or PCB.

Name the five video text mode of BIOS only list (5).
Answer:- rep

Define context switching 2 marks
Answer:- (Page 141)
INT 08 that is saving and restoring the registers is called the scheduler and the whole event is called a context switch.

Make Diagram of Serial port and give pin names. 5 marks
Answer:- rep

3 common services given by video text mode. 2 marks
Answer:- rep

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Format of the interrupt descriptor
Answer:- (Page 182)

interrupt gate descriptor

offset	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
+4	OFFSET (bit31..16)																P	DPL		S = 0		D		G = 1	10	reserved							
+0	CS selector																OFFSET (bit15..0)																

1. Define Faulty Instructions [3maks]

2. Define Protected mode [3 marks]
Answer:- rep

3a. What are the ranges of addressable memory in protected mode?

5. Define Device drivers. Why device drivers are used when BIOS already have all available codes. write its need[5marks]
Answer:- (Page 166)
Device drivers are operating system extensions that become part of the operating system and extend its services to new devices. Device drivers in DOS are very simple. They just have their services exposed through the file system interface.

6. Write Bubble sort algorithm in your own words. [5 marks]
Answer:- rep

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7. Fill in the blanks with proper words[solved] [5 marks]
Answer:- (Page 150)
AH = -09h --
AL = -- character to display --
BH = - page number ---
BL = --- attribute ---
CX =--- number of times to write character –
(09h, page number, number of times to write character, attribute ,character to display,)

8. How can we increase speed of multitasking process? [2marks]
Answer:- rep

Qno.41 How cam we improve the spec of the multitasking? (2)
Answer:- rep

Qno.42 What do you mean by data label and code label? (2)
Answer:- (Page 32)
Labels can be used on code as well. Just like data labels they remember the address at which they are used. The assembler does not differentiate between code labels and data labels. The programmer is responsible for using a data label as data and a code label as code.

Qno.43 What is system descriptor? (2)
Answer:- rep

Qno.44 What are device driver, Give your answer in two or three lines (2)
Answer:- rep

Qno.45 In what order the parameters are passed to routine in Pascal and C Language (3)
Answer:- rep

Qno.46 What is multitasking (3)
Answer:- rep

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Qno.47 Difference between wraparound and physical wraparound and physical wraparounds

Qno.49 How to load AND/ OR execute program using INT 21 services (5)
Answer:- (Page 165)
INT 21 - LOAD AND/OR EXECUTE PROGRAM
AH = 4Bh
AL = type of load (0 = load and execute)
DS:DX -> ASCIZ program name (must include extension)
ES:BX -> parameter block
Return:
CF = error flag
AX = error code

Qno.50 Describe the format of interrupt descriptor (5)
Answer:- rep

Qno.51 Following piece of code is taken from the program of scrolling up the screen write against each instruction what it does (5)

Mov ax 80
Mu byte [bp+4]
Mov si, ax
Push si
Shl si1

Answer:- (Page 150)
mov ax, 80 ; load chars per row in ax
mul byte [bp+4] ; calculate source position
mov si, ax ; load source position in si
push si ; save position for later use
shl si, 1 ; convert to byte offset

Qno.52 In context of video service write character and attribute at cursor position using INT 10 pick up correct statement given between and put it is proper blank spaces

AH…….
AL…….
BH…….
BH…….
BL…….
CX…….
(5)
*

Answer:- rep

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Question No: 42 (Marks: 2) -
INT 14 - SERIAL - READ CHARACTER 8 bit register return result in?
Answer:- (Page 172)
Return:
AH = line status
AL = received character if AH bit 7 clear

Question No: 43 (Marks: 2) -
What is the process control back answer in single line
Answer:- rep

Question No: 44 (Marks: 2) -
Explain Divide overflow
Answer:- (Page 85)
If a large number is divided by a very small number it is possible that the quotient is larger than the space provided for it in the implied destination. In this case an interrupt is automatically generated and the program is usually terminated as a result. This is called a divide overflow error;

Question No: 45 (Marks: 2)
What is the system descriptor?
Answer:- rep

Question No: 46 (Marks:3)
It is the part of Multitasking TSR caller, what will do these instructions comment against them
Mov al, [chars+bx]
Mov [es:40],al
Inc bx
Answer:- rep

Question No: 48 (Marks:3)
Three basic steps B/w memory and processor to communicate.
Answer:- (Page 9)
The group of bits that the processor uses to inform the memory about which element to read or write is collectively known as the address bus. Another important bus called the data bus is used to move the data from the memory to the processor in a read operation and from the processor to the memory in a write operation. The third group consists of miscellaneous independent lines used for control purposes.

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Question No: 49 (Marks:3)
What is baud rate, tell the parity bit function.
Answer:- (Page 171)
The data starts with a 1 bit called the start bit, then five to eight data bits, an optional parity bit, and one to two 0 bits called stop bits.
The number of data bits, parity bits, and the number of stop bits have to be configured at both ends. Also the duration of a bit must be precisely known at both ends called the baud rate of the communication.

Question No: 50 (Marks:5)
Write the instruction of following
Copy BL into CL
Answer: mov cl, bl

Copy DX into AX
Answer: mov ax, dx

Store 0x12 into AL
Answer: mov al, 0x12

Store 0x1234 into AX
Answer: mov ax, 0x1234

Store 0xFFFF into AX
Answer: mov ax, 0xFFFF

Question No: 51 (Marks:5)
9 pin DB9 connector , write function of any five
Answer:- rep

Question No: 52 (Marks:5)
Fill in the blanks with proper words
AH =
AL =
BH =
BL =
CX =
(09h, page number, number of times to write character, attribute ,character to display,)
Answer:- rep

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Question No: 52 (Marks:5)
Fill in the blanks with proper words
The GDT itself is an array of descriptors where each descriptor is an 8byte entry.
The base and limit of GDT is stored in a 48bit register called the GDTR.
This register is loaded with a special instruction LGDT and is given a memory address from where the 48bits are fetched.

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