5. Design and develop an assembly language program to read the current *Time and Date* from the system and display it in the standard format on the screen.

```
.model small

initds macro
    mov ax,@data      ; initializing the data segment
    mov ds,ax         ; it is ds, not dx
endm

printf macro msg
    lea dx,msg        ; load the effective address to dx
    mov ah,9          ; function number is 9
    int 21h           ; using dos interrupt 21h
endm

putchar macro char
    mov dl,char      ; load the printable character's hex value in dl
    mov ah,2          ; function number is 9
    int 21h           ; using dos interrupt 21h
endm

accesstime macro
    mov ah,2ch        ; time interrupt  ch=hours; cl=minutes
    int 21h           ;                 dh=seconds; dl=milliseconds
endm

accessdate macro      ; date interrupt  dl=day; dh=month; cx=year
    mov ah,2ah
    int 21h
endm

display macro value
    mov al,value      ; copy the passed value to AL bcoz next
                        instruction (aam) works only on AL

    aam               ; split al into ah & al
    add ax,3030h      ; convert ah & al to ascii
    mov bx,ax         ; copy ax to bx to be safe
    putchar bh        ; print first digit
    putchar bl        ; print second digit
endm

exit macro
    mov ah,4ch        ; to terminate
    int 21h
endm
```

```
time macro
    printf timemsg    ; print "current time is"
    accesstime        ; call accesstime macro
    display ch        ; display hours
    putchar ':'       ; print ':
    display cl        ; display minutes
endm

date macro
    printf datemsg    ; print "current date is"
    accessdate        ; call accessdate macro
    display dl        ; display day
    putchar ':'       ; print ':'
    display dh        ; display month
endm

;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;


.data

    timemsg db 10,13,"current time is $"
    datemsg db 10,13,"current date is $"


.code

    initds            ; initialze data segment
    time              ; time task
    date              ; date task
    exit              ; bye bye!


end
```