

EE 2905

Dr. Johnson

Homework 8

1 – Match each term to its description.

40 pts

- | | | |
|-------------------------|----------------------------|---|
| A) Service(ing) | <input type="checkbox"/> J | The activity that creates an interrupt |
| B) Flag (interrupt bit) | <input type="checkbox"/> B | A bit in a register to indicate a specific event has occurred |
| C) Nested | <input type="checkbox"/> A | Act of running the code associated with the interrupt |
| D) Context switch | <input type="checkbox"/> G | Order in which events (interrupts) are serviced |
| E) Maskable | <input type="checkbox"/> C | A higher priority interrupt can “interrupt” an active, lower priority interrupt |
| F) Non-maskable | <input type="checkbox"/> E | these interrupts can be selectively enabled or disabled |
| G) Priority | <input type="checkbox"/> F | these interrupts cannot be disabled |
| H) Active | <input type="checkbox"/> I | An interrupt that has occurred but has not yet been serviced by the processor |
| I) Pending | <input type="checkbox"/> H | Currently being serviced |
| J) Event | <input type="checkbox"/> K | The code run when an interrupt is Active |
| K) ISR | <input type="checkbox"/> D | All the activity associated with changing from one task to another |

a) Describe 2 ways in which an ISR is different from any other common function

Not called from within our program (called from outside our program)

No possible parameters – must use global variable if needed

Need to make it as fast as possible

Interrupts our program

b) Describe 2 ways in which an ISR is similar to any other common function

Single copy stored in a different section of program memory

Needs a return type

Needs a declaration (prototype) and definition

All normal C commands work

3 – Short answer

20 pts

Compare the operation of a Timer, Ticker, and Timeout object

Timer is free (continuous) running, can be read, and does not create an interrupt

Ticker is free running, cannot be read, and does create an interrupt

Timeout is run-once, cannot be read, and does create an interrupt