

Solution A

(5) Question 1. **const**
 (5) Question 2. **static**
 (5) Question 3. \$1234
 (5) Question 4. \$3800
 SP-> data -2,x
RegX-> oldX 0,x
 Ret 2,x
 in 4,x

(5) Question 5. **xxx = -2**
 (5) Question 6. **yyy = 4**
 (5) Question 7. $5V/1024 = 5mV$
 (5) Question 8. minimally intrusive
 (5) Question 9. stabilization
 (5) Question 10. **Stop,Run**
 (5) Question 11. **staa PTT**
 (5) Question 12. **ldaa 0,x**
 (5) Question 13. **ldx 1,x**
 (5) Question 14. $(5-1.5-0.5)/0.002$
 = 1500Ω

(10) Question 15.
ADC_In movb #\$84,ATDCTL5
loop ldaa ATDSTAT0
 bpl loop
 ldx ATDDR0
 rts

(10) Question 16.
;SP-> ret 0,s
; ptr 2,s
ptr set 2
SCI_Out ldx ptr,s
loop ldaa 1,x+ ;data
 beq done ;null?
wait ldab SCISR1 ;tdre
 bpl wait
 staa SCIDRL
 bra loop
done rts

(10) Question 17.
SWIhan movw TCNT,3,sp
;place return value on stack
 rti
 org \$FFF6
 fdb SWIhan

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Solution B

(5) Question 1. **volatile**
 (5) Question 2. **static**
 (5) Question 3. \$ABCD
 (5) Question 4. \$3900
 SP-> data -1,x
RegX-> oldX 0,x
 Ret 2,x
 in 4,x

(5) Question 5. **yyy = 4**
 (5) Question 6. **xxx = -1**
 (5) Question 7. $2.5V/256 = 10mV$
 (5) Question 8. monitor
 (5) Question 9. intrusive
 (5) Question 10. **10**
 (5) Question 11. **staa PTT**
 (5) Question 12. **ldaa 0,y**
 (5) Question 13. **ldy 1,y**
 (5) Question 14. $(5-2.5-0.5)/0.02$
 = 100Ω

(10) Question 15.
ADC_In movb #\$83,ATDCTL5
loop ldaa ATDSTAT0
 bpl loop
 ldx ATDDR0
 rts

(10) Question 16.
;SP-> ret 0,s
; ptr 2,s
ptr set 2
SCI_Out ldx ptr,s
loop ldaa 1,x+ ;data
 beq done ;null?
wait ldab SCISR1 ;tdre
 bpl wait
 staa SCIDRL
 bra loop
done rts

(10) Question 17.
SWIhan movw TCNT,5,sp
;place return value on stack
 rti
 org \$FFF6
 fdb SWIhan

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Solution C

(5) Question 1. **static**
 (5) Question 2. **const**
 (5) Question 3. \$3800
 (5) Question 4. \$1234
 SP-> data -2,x
RegX-> oldX 0,x
 Ret 2,x
 in 4,x

(5) Question 5. **yyy = 4**
 (5) Question 6. **xxx = -2**
 (5) Question 7. $2.5V/1024 = 2.5mV$
 (5) Question 8. stabilization
 (5) Question 9. minimally intrusive
 (5) Question 10. **Turn,Run**
 (5) Question 11. **stab PTM**
 (5) Question 12. **ldab 0,x**
 (5) Question 13. **ldx 1,x**
 (5) Question 14. $(5-2.5-0.5)/0.002$
 = 1000Ω

(10) Question 15.
ADC_In movb #\$85,ATDCTL5
loop ldaa ATDSTAT0
 bpl loop
 ldy ATDDR0
 rts

(10) Question 16.
;SP-> ret 0,s
; ptr 2,s
ptr set 2
SCI_Out ldx ptr,s
loop ldaa 1,x+ ;data
 beq done ;null?
wait ldab SCISR1 ;tdre
 bpl wait
 staa SCIDRL
 bra loop
done rts

(10) Question 17.
SWIhan movw TCNT,3,sp
;place return value on stack
 rti
 org \$FFF6
 fdb SWIhan

10am

Solution D

(5) Question 1. **static**
 (5) Question 2. **volatile**
 (5) Question 3. \$5678
 (5) Question 4. \$3A00
 SP-> data -1,x
RegX-> oldX 0,x
 Ret 2,x
 in 4,x

(5) Question 5. **xxx = -1**
 (5) Question 6. **yyy = 4**
 (5) Question 7. $5V/256 = 20mV$
 (5) Question 8. intrusive
 (5) Question 9. monitor
 (5) Question 10. **10**
 (5) Question 11. **stab PTT**
 (5) Question 12. **ldab 0,y**
 (5) Question 13. **ldy 1,y**
 (5) Question 14. $(5-1.5-0.5)/0.02$
 = 150Ω

(10) Question 15.
ADC_In movb #\$82,ATDCTL5
loop ldaa ATDSTAT0
 bpl loop
 ldx ATDDR0
 rts

(10) Question 16.
;SP-> ret 0,s
; ptr 2,s
ptr set 2
SCI_Out ldx ptr,s
loop ldaa 1,x+ ;data
 beq done ;null?
wait ldab SCISR1 ;tdre
 bpl wait
 staa SCIDRL
 bra loop
done rts

(10) Question 17.
SWIhan movw TCNT,5,sp
;place return value on stack
 rti
 org \$FFF6
 fdb SWIhan

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