

EECE.3170: Microprocessor Systems Design I

Summer 2017

Lecture 5: Key Questions

May 24, 2016

1. Explain the operation of the bit test instructions (BT, BTR, BTS, BTC)

2. Explain the operation of the bit scan instructions (BSF, BSR).

3. **Example:** Given the following initial state, list all changed registers and/or memory locations and their new values. Where appropriate, you should also list the state of the carry flag (CF).

Initial state:

EAX: 00000000h
EBX: 0000000Ah
ECX: 00000000h
EDX: 00000000h
CF: 0
ESI: 00000008h
EDI: FFFF0000h

Address

21100h	04	00	10	10
21104h	89	01	20	40
21108h	02	00	00	16
2110Ch	17	03	FF	00
21110h	1E	00	06	00
21114h	08	00	0A	00

Instructions:

```
BT      WORD PTR [21102h], 4
BTC     WORD PTR [21110h], 1
BTS     WORD PTR [21104h], 1
BSF     CX, WORD PTR [2110Eh]
BSR     DX, WORD PTR [21109h]
```