Test Program:

Assembly

1. addi r0, 2 //load r0 with 2

2. addi r1, 2 //load r1 with 2

3. addi r2, 3 //load r2 with 3

4. addr r3, r0, r1 //load r3 with 4 = 2 + 2

5. and r4, r2, r1 //load r4 with 2

6. or r5, r3, r2 //load r5 with 7

7. shl r0 //load r0 with 4

8. shr r0 //load r0 with 2

9. jump 45 //load PC with 45

10. bre 4, r0, r1 //branch to address PC + 4

11. bre 4, r1, r2 //don't branch (PC + 1)

12. brne 4, r0, r1 //don't branch (PC + 1)

13. brne 4, r1, r2 //branch to address PC + 4

14. brlt 4, r0, r1 //don’t branch (PC + 1)

15. brlt 4, r1, r2 //branch PC + 4

16. brge 4, r0, r1 //branch PC + 4

17. brge 4, r2, r0 //branch PC + 4

18. brge 4, r0, r2 //don't branch PC +1

19. subr r6, r2, r1 //load r6 with 1

20. xor r7, r5, r2 //load r7 with 4

Binary

1. 0100 0000 0000 0010

2. 0100 0000 0001 0010

3. 0100 0000 0010 0011

4. 0011 0011 0000 0001

5. 0101 0100 0010 0001

6. 0110 0101 0011 0010

7. 0111 0000 0000 0000

8. 1000 0000 0000 0000

9. 1001 0000 1011 0100

10. 1010 0100 0000 0001

11. 1010 0100 0001 0010

12. 1011 0100 0000 0001

13. 1011 0100 0001 0010

14. 1100 0100 0000 0001

15. 1100 0100 0001 0010

16. 1101 0100 0000 0001

17. 1101 0100 0010 0000

18. 1101 0100 0000 0010

19. 1110 0110 0010 0001

20. 1111 0111 0101 0010