**برنامه محک**

**کد ماشین به همراه اسمبلی و نتایج:**

1. 32'b1110\_00\_1\_1101\_0\_0000\_0000\_000000010100; //MOV R0 ,#20 //R0 = 20
2. 32'b1110\_00\_1\_1101\_0\_0000\_0001\_101000000001; //MOV R1 ,#4096 //R1 = 4096
3. 32'b1110\_00\_1\_1101\_0\_0000\_0010\_000100000011; //MOV R2 ,#0xC0000000 //R2 = -1073741824
4. 32'b1110\_00\_0\_0100\_1\_0010\_0011\_000000000010; //ADDS R3 ,R2,R2 //R3 = -2147483648
5. 32'b1110\_00\_0\_0101\_0\_0000\_0100\_000000000000; //ADC R4 ,R0,R0 //R4 = 41
6. 32'b1110\_00\_0\_0010\_0\_0100\_0101\_000100000100; //SUB R5 ,R4,R4,LSL #2 //R5 = -123
7. 32'b1110\_00\_0\_0110\_0\_0000\_0110\_000010100000; //SBC R6 ,R0,R0,LSR #1 //R6 = 10
8. 32'b1110\_00\_0\_1100\_0\_0101\_0111\_000101000010; //ORR R7 ,R5,R2,ASR #2 //R7 = -123
9. 32'b1110\_00\_0\_0000\_0\_0111\_1000\_000000000011; //AND R8 ,R7,R3 //R8 = -2147483648
10. 32'b1110\_00\_0\_1111\_0\_0000\_1001\_000000000110; //MVN R9 ,R6 //R9 = -11
11. 32'b1110\_00\_0\_0001\_0\_0100\_1010\_000000000101; //EOR R10,R4,R5 //R10 = -84
12. 32'b1110\_00\_0\_1010\_1\_1000\_0000\_000000000110; //CMP R8 ,R6
13. 32'b0001\_00\_0\_0100\_0\_0001\_0001\_000000000001; //ADDNE R1 ,R1,R1 //R1 = 8192
14. 32'b1110\_00\_0\_1000\_1\_1001\_0000\_000000001000; //TST R9 ,R8
15. 32'b0000\_00\_0\_0100\_0\_0010\_0010\_000000000010; //ADDEQ R2 ,R2,R2 //R2 = -1073741824
16. 32'b1110\_00\_1\_1101\_0\_0000\_0000\_101100000001; //MOV R0 ,#1024 //R0 = 1024
17. 32'b1110\_01\_0\_0100\_0\_0000\_0001\_000000000000; //STR R1 ,[R0],#0 //MEM[1024] = 8192
18. 32'b1110\_01\_0\_0100\_1\_0000\_1011\_000000000000; //LDR R11,[R0],#0 //R11 = 8192
19. 32'b1110\_01\_0\_0100\_0\_0000\_0010\_000000000100; //STR R2 ,[R0],#4 //MEM[1028] = -1073741824
20. 32'b1110\_01\_0\_0100\_0\_0000\_0011\_000000001000; //STR R3 ,[R0],#8 //MEM[1032] = -2147483648
21. 32'b1110\_01\_0\_0100\_0\_0000\_0100\_000000001101; //STR R4 ,[R0],#13 //MEM[1036] = 41
22. 32'b1110\_01\_0\_0100\_0\_0000\_0101\_000000010000; //STR R5 ,[R0],#16 //MEM[1040] = -123
23. 32'b1110\_01\_0\_0100\_0\_0000\_0110\_000000010100; //STR R6 ,[R0],#20 //MEM[1044] = 10
24. 32'b1110\_01\_0\_0100\_1\_0000\_1010\_000000000100; //LDR R10,[R0],#4 //R10 = -1073741824
25. 32'b1110\_01\_0\_0100\_0\_0000\_0111\_000000011000; //STR R7 ,[R0],#24 //MEM[1048] = -123
26. **32'b1110\_00\_1\_1101\_0\_0000\_0001\_000000000100; //MOV R1 ,#4 //R1 = 4**
27. 32'b1110\_00\_1\_1101\_0\_0000\_0010\_000000000000; //MOV R2 ,#0 //R2 = 0
28. 32'b1110\_00\_1\_1101\_0\_0000\_0011\_000000000000; //MOV R3 ,#0 //R3 = 0
29. 32'b1110\_00\_0\_0100\_0\_0000\_0100\_000100000011; //ADD R4 ,R0,R3,LSL #2
30. 32'b1110\_01\_0\_0100\_1\_0100\_0101\_000000000000; //LDR R5 ,[R4],#0
31. 32'b1110\_01\_0\_0100\_1\_0100\_0110\_000000000100; //LDR R6 ,[R4],#4
32. 32'b1110\_00\_0\_1010\_1\_0101\_0000\_000000000110; //CMP R5 ,R6
33. 32'b1100\_01\_0\_0100\_0\_0100\_0110\_000000000000; //STRGT R6 ,[R4],#0
34. 32'b1100\_01\_0\_0100\_0\_0100\_0101\_000000000100; //STRGT R5 ,[R4],#4
35. 32'b1110\_00\_1\_0100\_0\_0011\_0011\_000000000001; //ADD R3 ,R3,#1
36. 32'b1110\_00\_1\_1010\_1\_0011\_0000\_000000000011; //CMP R3 ,#3
37. 32'b1011\_10\_1\_0\_111111111111111111110111 ; //BLT #-9
38. 32'b1110\_00\_1\_0100\_0\_0010\_0010\_000000000001; //ADD R2 ,R2,#1
39. 32'b1110\_00\_0\_1010\_1\_0010\_0000\_000000000001; //CMP R2 ,R1
40. **32'b1011\_10\_1\_0\_111111111111111111110011 ; //BLT #-13**
41. 32'b1110\_01\_0\_0100\_1\_0000\_0001\_000000000000; //LDR R1 ,[R0],#0 //R1 = -2147483648
42. 32'b1110\_01\_0\_0100\_1\_0000\_0010\_000000000100; //LDR R2 ,[R0],#4 //R2 = -1073741824
43. 32'b1110\_01\_0\_0100\_1\_0000\_0011\_000000001000; //LDR R3 ,[R0],#8 //R3 = 41
44. 32'b1110\_01\_0\_0100\_1\_0000\_0100\_000000001100; //LDR R4 ,[R0],#12 //R4 = 8192
45. 32'b1110\_01\_0\_0100\_1\_0000\_0101\_000000010000; //LDR R5 ,[R0],#16 //R5 = -123
46. 32'b1110\_01\_0\_0100\_1\_0000\_0110\_000000010100; //LDR R6 ,[R0],#20 //R6= 10
47. 32'b1110\_10\_1\_0\_111111111111111111111111 ; //B #-1