Exam starts here

Question 1: (5 marks)
Run your project with the following input and write the output you get in the ***Ouput*** box and then optimize it:

Input	Output	Optimization

if (x-3) then
begin
x=3* y;
while (2+x)
do
y=y-1;
end		

Question 2: we change the grammar of phase 4 as it is shown in the rule 2. Answer the following questions: (15 marks: A(5), B(5), C(5))

1. Start → stmt eof
2. Stmt → id = expr
| if (**logexpr**) then stmt
| while (expr) do stmt
| begin CS end
 	
3. CS → stmt ; CS | □
4. **logexpr** ->expr **rest30**
5. **rest30**→ **=** expr **{lgex(0)}** |
< expr **{lgex(1)}** |
> expr **{lgex(2)}** |
$ {lgex(3)}
 	
void lgex(int relop)
{
switch(relop) {
case 0: printf("pop r2\npop r1\ncmp r1,r2\nbne else\n");
break;
case 1: printf("pop r2\npop r1\ncmp r1,r2\nbl else\n");
break;
case 2: printf("pop r2\npop r1\ncmp r1,r2\nbg else\n");
break;
case 3: printf("pop r2 \ncmp r2,0 \nbe else\n");
}
}
	Parse.h

B- *What has to be modified in the next files:*

Global.h	Init.c

C- *Give the output of the following input:*

Input	Output	

if(x>1) then
if(y=x+2) then
  y=y*x		