

# Department of Computer Science and Engineering

## Indian Institute of Technology, Kharagpur

### Compiler Theory: CS31003

3rd year CSE, 5th Semester

*Assignment - 6: IC Translation (Control)*

*Marks: 10*

Assign Date: October 13, 2020

Submit Date: 10:55, October 21, 2020

Mode: Individual Submission

1. Translate the following expressions using the goto.

$3 \times 2 = 6$

- a) if (a==b && c==d || e==f) x = 1;
- b) if (a==b || c==d || e==f) x = 1;
- c) if (a==b && c==d && e==f) x = 1;

2. Consider the following grammar and translate the following to the three-address codes with the steps of reduction and annotated parse tree. Modify the grammar to introduce back-patching. 4

```
S -> while E do S1
S -> if E then S1 else S2
S -> if E then S1
```

```
while a < b do
  If c < d then
    x = y + z
  else
    x = y - z
```

*Note: Please submit your answer handwritten in paper. Upload your answer in .pdf format in the moodle server. File name should be named as ass1-roll.pdf, where "roll" is your roll number.*