

## Elec Eng 2E15

### Lab 5: Transistor amplifiers

#### Deliverables and Evaluation

##### 1. Summary

For this lab:

- Tasks 1 & 2 are required
- Task 3 is completely optional and for your own benefit – do not include it in your report
- You get 75% of the marks based on your data
- You get the remaining 25% for discussion

##### 2. Deliverables

Do not submit a report.

Submit a record of the data gathered and/or determined during the experiment (i.e. Bode plots, the gain of each circuit, etc.). Include screen captures of the waveforms in Tasks 1 & 2 and the Excel plot obtained in Task 2.

Submit a single page with a maximum of two paragraphs discussion of the effect on gain and linearity of including an emitter resistor that is not bypassed for small signals.

##### 3. Evaluation

Evaluation is based on the submitted data and discussion as follows:

Task 1:

- |   |    |
|---|----|
| • DC bias   | 5  |
| • Bode plots                                      | 10 |
| • Gain and corner frequencies from the Bode plots | 5  |
| • Phase in midband and at corner frequencies      | 5  |
| • Magnitude and phase of gain at 10kHz from scope | 10 |
| • Screenshots of waveforms with 20mV amplitude    | 10 |

Task 2:

- |  |   |
|--|---|
| • Bode plots   | 5 |
| • Gain and corner frequencies from the Bode plots      | 5 |
| • Phase in midband and at corner frequencies           | 5 |
| • Magnitude and phase of gain at 10kHz from scope      | 5 |
| • Screenshots of waveforms with 30mV amplitude         | 5 |
| • Lowest input amplitude that causes output distortion | 5 |

Discussion                      25