Experimental Procedure:

6.4.1 Set the transistor curve tracer menu as follows: **Type** = npn; \( V_{CE_{max}} = 20 \text{ V} \); \( I_{c_{max}} = 10 \text{ mA} \); \( I_{B/step} = 5 \text{ \(\mu\)A} \); **Steps** = 10; \( R_{Load} = 0.25 \text{ \(\Omega\)} \); and \( P_{max} = 0.1 \text{ W} \).

   a) Use \( V_{CC} = 16 \text{ V} \) and \( R_C = 1.6 \text{ k\(\Omega\)} \).

6.4.2 Use a ¼ Watt, 1.6 k\(\Omega\) ±5% resistor for \( R_C \). Be sure to measure its resistance before inserting it into the circuit. Note that it is easy to supply too much base current and overdrive the transistor, which will either burn it out or alter its characteristics. With \( V_{CC} \) set to the proper voltage and the decade box set at 999,999 \( \Omega \) as specified in the manual, slowly reduce \( R_{DB} \) until the BJT is biased at the proper \( V_{CEQ} \) voltage. **Note that if you don’t follow these instructions and burn up your transistor, you will have to start the whole experiment over, so be careful.** Be sure to let the transistor reach temperature equilibrium before taking data after making any change.

6.4.3 Use ±5 \(\mu\)A changes in \( I_B \) instead of ±20% changes.

6.4.4 Skip this part of the experiment.

Report Grading:

- **Data Sheets:** 10 points
- **Section 6.5.1:** 14 points
- **Section 6.5.2:** 18 points
- **Section 6.5.3:** 8 points
- **Section 6.5.4:** 6 points
- **Section 6.5.5:** 8 points
- **Section 6.5.6:** 16 points
- **Section 6.5.7:** 10 points
- **Section 6.5.8:** Skip this part
- **Section 6.5.9:** 10 points