

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Course Code & Name : **23ECT203 & Linear Integrated Circuits**

Course Faculty : **Ms.V.Aishwarya AP/ECE**

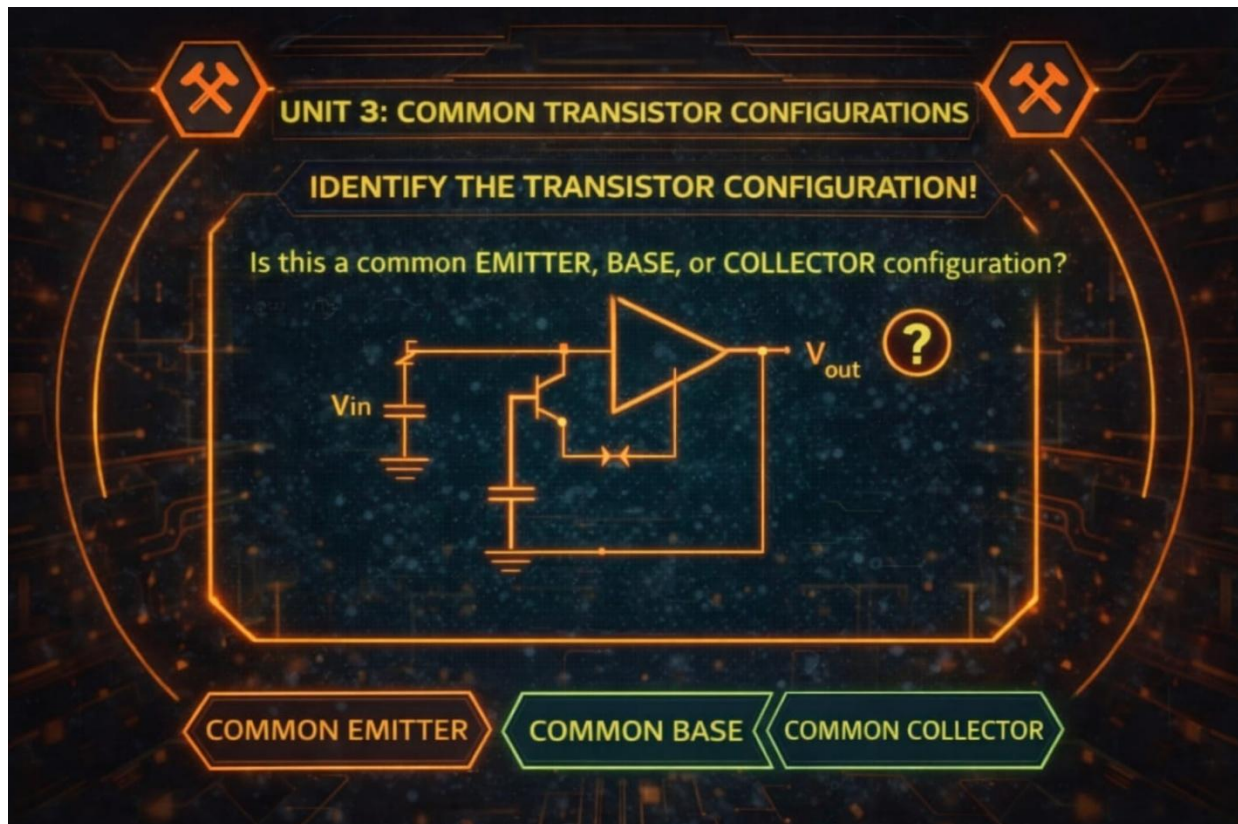
Puzzles / In Class Activities

Topics Covered: **Unit 3- ANALOG MULTIPLIER AND PLLR**

Puzzle 1

Question: Identify The Transistor Configuration-Is this

common Emmitter or Collector.



UNIT 3: COMMON TRANSISTOR CONFIGURATIONS


IDENTIFY THE TRANSISTOR CONFIGURATION!

Is this a common **EMITTER**, **BASE**, or **COLLECTOR** configuration?

V_{in} V_{out} ?

COMMON EMITTER **COMMON BASE** **COMMON COLLECTOR**

Answer :



ANSWER:

COMMON EMITTER

Reason:

- Input is applied at the base
- Output is taken from the collector
- Emitter is common (grounded) for input and output

Fits the characteristics of a Common Emitter circuit:
high voltage gain, phase inversion

Puzzle 2

Question : What is the output voltage V_0 for the analog multiplier?

UNIT 3: ANALOG MULTIPLIER AND PLL

IDENTIFY THE OUTPUT VOLTAGE FORMULA!

What is the output voltage V_0 for the analog multiplier?

V_1 → V_2 → V_0 ?

$V_{out} = V_2 \frac{V_1}{R_2}$ $V_{out} = V_2 V_2$

Answer:

UNIT 3: ANALOG MULTIPLIER AND PLL

CORRECT!

The output voltage V_o is:

V_1 → V_2 → V_o ✓

$V_o = V_1 V_2$