

# Gate 2022 EE 25

HIBA MUHAMMED  
EE23BTECH11026

## PROBLEM STATEMENT

For the circuit shown below with ideal diodes, the output will be :

- (A)  $V_{\text{out}} = V_{\text{in}}$  for  $V_{\text{in}} > 0$
- (B)  $V_{\text{out}} = V_{\text{in}}$  for  $V_{\text{in}} < 0$
- (C)  $V_{\text{out}} = -V_{\text{in}}$  for  $V_{\text{in}} > 0$
- (D)  $V_{\text{out}} = -V_{\text{in}}$  for  $V_{\text{in}} < 0$

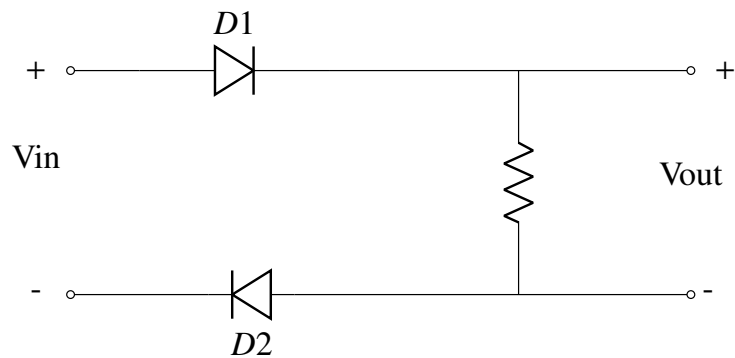


Fig. 1. Gate EE 25 fig-1

## SOLUTION

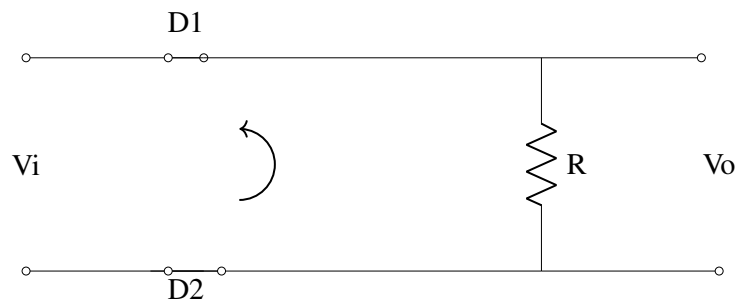


Fig. 2. Gate EE fig-2

Postive Half Cycle-  $D_1$  and  $D_2$  will be ON

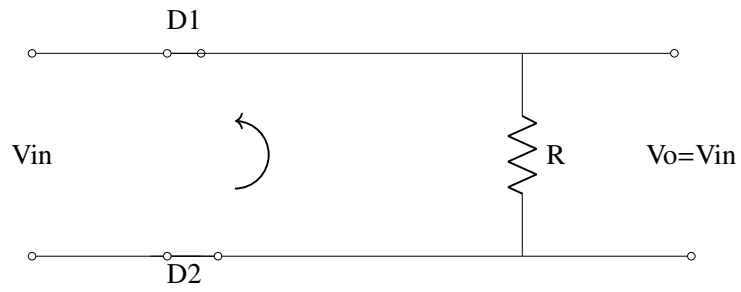


Fig. 3. Gate EE fig-3

Negative Half Cycle-  $D_1$  and  $D_2$  will be OFF,  $V_o = 0$  at  $V_{in} < 0$

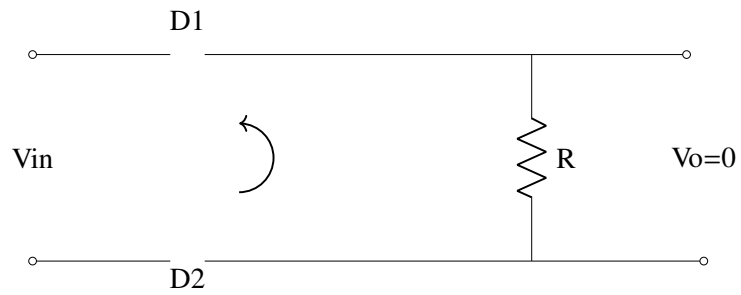


Fig. 4. Gate EE fig-4

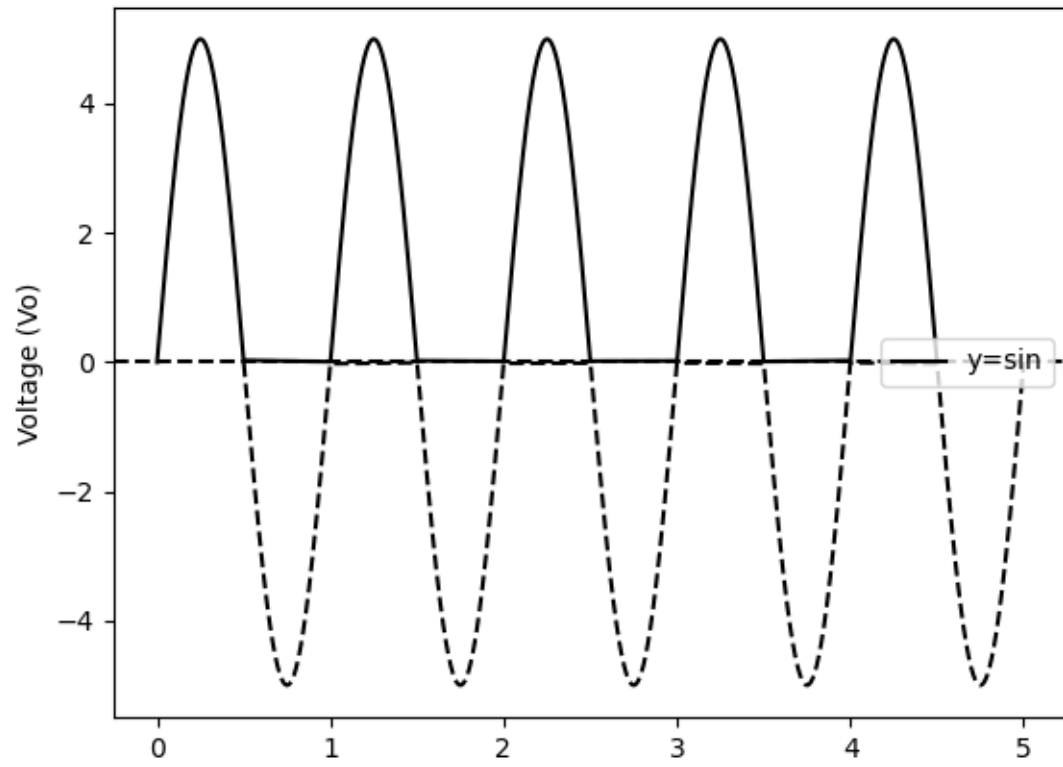


Fig. 5. Output Waveform

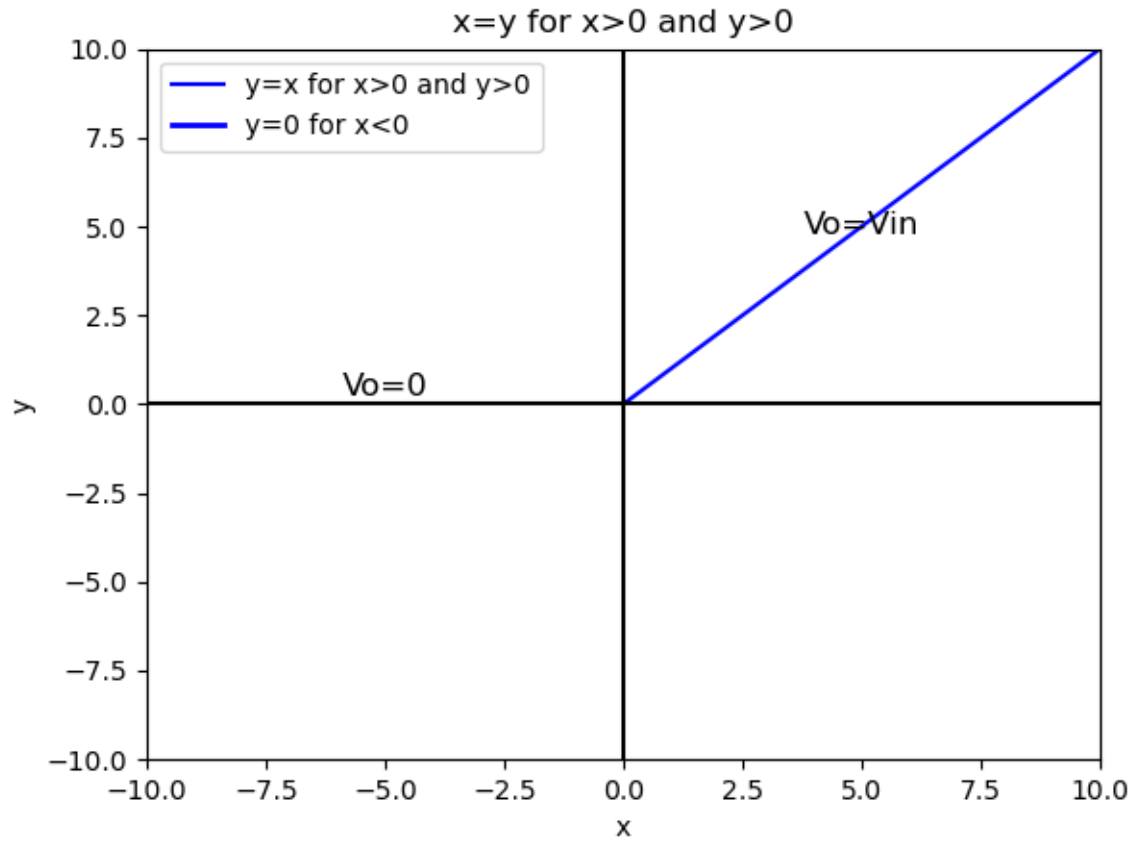


Fig. 6. charecterstic graph

The solution is Option A