

# SAMPLE FUNDAMENTALS OF ENGINEERING EXAMINATION

## -- AFTERNOON SESSION ONLY - ELECTRICAL

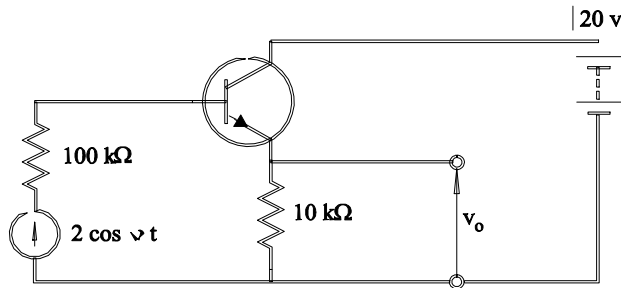
Questions 1 through 4 pertain to the simplified circuit shown below. The biasing resistors have been omitted because of their large value and negligible effect on the circuit. The input signal is from a constant current generator and the magnitude is expressed in micro-amperes. The transistor parameters are as shown below:

$$h_{ic} = 1,550 \Omega$$

$$h_{oc} = 55 \mu S$$

$$h_{re} = 100 \times 10^{-6}$$

$$h_{fe} = 75$$



1. The type of transistor used is:  
  - (A) PNP
  - (B) NPN
  - (C) PPN
  - (D) none of the above
  
2. The circuit configuration of the transistor is: (CB, CC or CE?)  
  - (A) AB
  - (B) CB
  - (C) CC
  - (D) CE
  
3. If you complete the battery connection the polarity of the collector voltage is most nearly:  
  - (A) +20 V
  - (B) -20 V
  - (C) +10 V
  - (D) -10 V