

Government College of Engineering

Government College of Engineering, Amravati  
Department of Information Technology  
Class Test-II (W-17)

Time: 1 hour

Sub: ETU 311 COA

Marks: 15

Solve Any Three

- Q.1 Explain working of Common base Amplifier with its input and output characteristics.
- Q.2 How operating point is ensured/ calculated in Voltage divider biasing method? Explain with diagram.
- Q.3 Explain working of RC coupled amplifier with its advantages and limitations.
- Q.4 Derive the expression for Input impedance and Voltage gain for Common emitter configuration using H-parameter model.

$$\begin{aligned}h_{11} &= h_{ie} \\h_{12} &= h_{re} \\h_{21} &= h_{fe} \\h_{22} &= h_{oe}\end{aligned}$$



Government College of Engineering, Amravati  
An Autonomous Institute of Government of Maharashtra

09

**Government College of Engineering, Amravati**  
Department of Information Technology  
Class Test-II

Course Code: ETU311

Course: Electronic Devices and Circuits

Note: Attempts any three from Q.1 to Q.4

Date: 07/10/2016

Time: 9:00-10:00AM

Max. Marks: 15

- Q.1** Describe in brief working of n-channel JFET. Also draw its V-I Characteristics. 5
- Q.2** Derive general expression for stability factor. Determine Q point and stability factor of the shown figure 1, assume transistor to be a silicon transistor and  $\beta=100$  5
- Q.3** Derive the expression of  $I_C$  and  $V_{CE}$  for voltage divider bias with neat diagram. If  $R_1=47K$ ,  $R_2=6.2K$ ,  $R_C=2.7K$ ,  $R_E=1.5K$ ,  $\beta=100$ ,  $V_{CC}=20V$ . Calculate  $I_C$ ,  $I_B$ ,  $V_{CE}$ , and  $V_E$ . 5
- Q.4** Differentiate JFET and MOSFET. Also define the transconductance, drain resistance and amplification factor of FET. 5

100 and a relation R on S where

A+B =