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GIET UNIVERSITY, GUNUPUR – 765022

B. Tech (Third Semester – Regular) Examinations, December – 2020

BPCEC 3020 – ANALOG ELECTRONIC CIRCUITS

(ECE)

Time: 2hrs

Maximum: 50 Marks

The figures in the right hand margin indicate marks.

PART – A: (Multiple Choice Questions)(1 x 10 =10 Marks)

Q.1. Answer ALL questions

- a. The most stable biasing technique used is

(i) voltage divider bias	(ii) base bias
(iii) collector bias	(iv) emitter bias
- b. Which of the following configurations has the lowest output impedance?

(i) Fixed bias	(ii) Voltage divider
(iii) voltage follower	(iv) emitter follower
- c. For a common-emitter amplifier, the purpose of the emitter bypass capacitor is

(i)no purpose, since it is shorted out by RE.	(ii)to reduce noise.
(iii)to despite the supply voltage.	(iv)to maximize amplifier gain.
- d. The differential amplifier has

(i)one input and one output.	(ii)two inputs and two outputs.
(iii)two inputs and one output.	(iv)one input and two outputs.
- e. The MOSFET combines the areas of _____ & _____

(i) field effect & MOS technology	(ii)semiconductor & TTL
(iii)mos technology & CMOS technology	(iv)none of the mentioned
- f. The controlling parameter in MOSFET is

(i)V _{ds}	(ii)I _g
(iii)V _{gs}	(iv) I _s
- g. The unwanted characteristics of amplifier output apart from the desired output is collectively termed as _____

(i) Fault	(ii) Inefficiency
(iii) Damage	(iv) Distortion
- h. For a perfect power amplifier output power rating will be _____ if the output impedance is halved.

(i) Halved	(ii) Doubled
(iii) Squared	(iv) Square rooted
- i. Gain stability in an oscillator can be achieved by

(i)Using low-Q circuits	(ii)Using low-Q circuits
(iii)Providing negative feedback	(iv)Controlling the gain
- j. In oscillator circuits the energy feedback to its input terminal from output is

(i)Always in phase with the input signal	(ii)270° out of phase with the input signal
(iii)180° out of phase with the input signal	(iv)90° out of phase with the input signal

PART – B: (Short Answer Questions)

(2 x 5=10 Marks)

Q.2. Answer ALL questions

- a. Distinguish JFET and MOSFET
- b. Draw the circuit diagram for BJT in CE configuration
- c. What is power amplifier?
- d. Define Phase locked loop
- e. Explain Conversion efficiency of power amplifier?

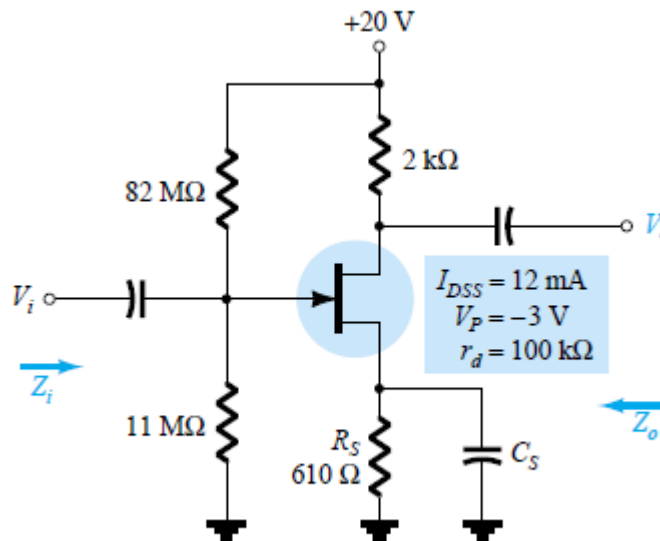
PART – C: (Long Answer Questions)

(6 x 5=40 Marks)

Answer ANY FIVE questions

Marks

- 3. Write short notes on emitter bias and voltage divider bias (6)
- 4. Explain bias stabilization and its need (6)
- 5. Determine Z_i , Z_o , A_v and V_o for the network if $V_i = 20$ mV. (6)



- 6. Describe Darlington connection with its advantages and disadvantages (6)
- 7. For a class B amplifier providing a 22-V peak signal to an 8Ω load and a power supply of $V_{CC} = 25$ V, determine:
 - (a) Input power.
 - (b) Output power.
 - (c) Circuit efficiency.(6)
- 8. Enumerate Class A and Class B Amplifier circuits (6)
- 9. Explain Miller Effect Capacitance and square wave testing (6)
- 10. Explain the principles of Phase shift and crystal oscillator (6)

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