Course/Branch : B.E/ EEE	**Year / Semester** : II/III	Format No.	NAC/TLP-07a.13
Subject Code :EC8353	**Subject Name** **:** Electronic Devices & Circuits	Rev. No.	02
Unit No : III	**Unit Name** **:** Amplifiers	Date	30.09.2020

OBJECTIVE TYPE QUESTION BANK

S. No.	Objective Questions (MCQ /True or False / Fill up with Choices)	BTL
1	A transistor with ß = 120 is biased to operate at a dc collector current of 1.2 mA. Find the value of gm. A) 12ma/V B) 24 Ma/V C) 36 Ma/V **D) 48 Ma/V**	L2
2	A transistor with ß = 120 is biased to operate at a dc collector current of 1.2 mA. Find the value of Rp? A) 625 Ohm B) 1250 Ohm **C) 2500 Ohm** D) 5000 Ohm	L2
3	A transistor with ß = 120 is biased to operate at a dc collector current of 1.2 mA. Find the value of Re. A) 2.5 Ohm **B) 20.6 Ohm** C) 25.2 Ohm D) 30.4 Ohm	L2
4	A transistor operating with nominal gm of 60 mA/V has a ß that ranges from 50 to 200. Also, the bias circuit, being less than ideal, allows a 20% variation in Ic. What is the smallest value found of the resistance looking into the base? A) 347 Ohm **B) 694 Ohm** C) 1041 Ohm D) 1388 Ohm	L2
5	A transistor operating with nominal gm of 60 mA/V has a ß that ranges from 50 to 200. Also, the bias circuit, being less than ideal, allows a 20% variation in Ic. What is the largest value found of the resistance looking into the base? A) 1050 Ohm B) 21000 Ohm C) 3150 Ohm **D) 4200 Ohm**	L2

Course/Branch : B.E/ EEE	**Year / Semester** : II/III	Format No.	NAC/TLP-07a.13
Subject Code :EC8353	**Subject Name** **:** Electronic Devices & Circuits	Rev. No.	02
Unit No : III	**Unit Name** **:** Amplifiers	Date	30.09.2020

OBJECTIVE TYPE QUESTION BANK

6	A designer wishes to create a BJT amplifier with a gm of 50 mA/V and a base input resistance of 2000 O or more. What is the minimum ß he can tolerate for the transistor used? **A) 100** B) 150 C) 200 D) 250	L2
7	A designer wishes to create a BJT amplifier with a gm of 50 mA/V and a base input resistance of 2000 O or more. What emitter bis current should he choose? A) 1.06 ma B) 1.16 ma **C) 1.26 ma** D) 1.36 ma	L2
8	Which of the following is true? A) Ib = ß Ic B) Ib = ß + 1/ Ic **C) Ib = Ic/ß** D) Ib = Ic/ ß – 1	L2
9	The SI units of transconductance is **A) Ampere/ Volt** B) Volt/ Ampere C) Ohm D) Siemens	L2
10	Which of the following represents the correct mathematical form of the term denoted by the symbol Rp? A) ß/Gm B) Vt/Ib **C) All Of The Mentioned** D) None Of The Mentioned	L2
11	What is trans-conductance? A) Ratio Of Change In Drain Current To Change In Collector Current **B) Ratio Of Change In Drain Current To Change In Gate To Source Voltage** C) Ratio Of Change In Collector Current To Change In Drain Current d) Ratio of change in collector current to change in gate to source voltage	L2

Course/Branch : B.E/ EEE	**Year / Semester** : II/III	Format No.	NAC/TLP-07a.13
Subject Code :EC8353	**Subject Name** : Electronic Devices & Circuits	Rev. No.	02
Unit No : III	**Unit Name** : Amplifiers	Date	30.09.2020

OBJECTIVE TYPE QUESTION BANK

12	For a FET, graph is drawn by taking voltage V_{GS} in X axis and drain current in Y axis, if the value of X changes from 10 to 20 results in change in value of Y axis from 2 to 3. What is the value of trans conductance? A) 1 B) 2 **C) 0.1** D) 0.01	L2
13	The slope obtained in V_{GS} vs I_D was 0.002. What is the value ofg_m? A) 1 B) 2 **C) 0.002** D) 0	L2
14	Which of the following is an expression for g_{m0}? A) $G_{m0} = I_{DSS}/V_p$ **B) $G_{m0} = 2I_{DSS}/\|V_p\|$** C) $G_{m0} = I_{DSS}/5V_p$ D) $G_{m0} = I_{DSS}/2V_p$	L2
15	Find the maximum value of g_m for FET with I_{DSS}=10mA, V_p=-2V, V_{GS}=5V? **A) 10ms** B) 20ms C) 1ms D) 0	L2
16	Find the value of g_m for FET with I_{DSS}=8mA, V_p=4V, V_{GS}=-0.5V? A) 1ms B) 2ms C) 3ms **D) 3.5ms**	L2
17	A FET has $I_{DSS}=4I_D$ and g_{m0} = 10mS then g_m = _____ A) 10ms B) 20ms **C) 5ms** D) 14ms	L2

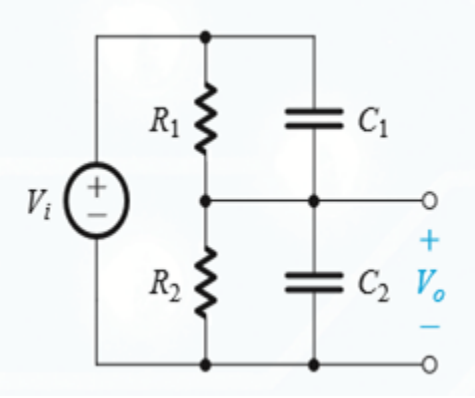
Course/Branch : B.E/ EEE	**Year / Semester** : II/III	Format No.	NAC/TLP-07a.13
Subject Code :EC8353	**Subject Name** **:** Electronic Devices & Circuits	Rev. No.	02
Unit No : III	**Unit Name** **:** Amplifiers	Date	30.09.2020

OBJECTIVE TYPE QUESTION BANK

18	Determine the value of output impedance for JFET, if the value of g_m =1mS? **A) 1Kohm** B) 0 C) 100Kohm D) 5Kohm	L2
19	In a small signal equivalent model of an FET, What does $g_m V_{GS}$ stand for? A) A Pure Resistor **B) Voltage Controlled Current Source** C) Current Controlled Current Source D) Voltage Controlled Voltage Source	L2
20	Given y_{fs} = 3.6mS and y_{os} = 0.02mS, determine r_0? A) 100Kohm B) 50Mohm **C) 50Kohm** D) 20Kohm	L2
21	Consider a voltage amplifier having a frequency response of the low-pass STC type with a dc gain of 60 dB and a 3-dB frequency of 1000 Hz. Then the gain db at A) F = 10 Hz Is 55 Db B) F = 10 Khz Is 45 Db C) F = 100 Khz Is 25 Db **D) F = 1Mhz Is 0 Db**	L2
22	STC networks can be classified into two categories: low-pass (LP) and high-pass (HP). Then which of the following is true? A) HP Network Passes Dc And Low Frequencies And Attenuate High Frequency And Opposite For LP Network **B) LP Network Passes Dc And Low Frequencies And Attenuate High Frequency And Opposite For HP Network** C) HP Network Passes Dc And High Frequencies And Attenuate Low Frequency And Opposite For LP Network D) LP Network Passes Low Frequencies Only And Attenuate High Frequency And Opposite For HP Network	L2

Course/Branch : B.E/ EEE	**Year / Semester** : II/III	Format No.	NAC/TLP-07a.13
Subject Code :EC8353	**Subject Name** : Electronic Devices & Circuits	Rev. No.	02
Unit No : III	**Unit Name** : Amplifiers	Date	30.09.2020

OBJECTIVE TYPE QUESTION BANK

23	Single-time-constant (STC) networks are those networks that are composed of, or can be reduced to **A) One Reactive Component (L Or C) And A Resistance (R)** B) Only Capacitive Component (C) And Resistance (R) C) Only Inductive Component (L) And Resistance (R) D) Reactive Components (L, C Or Both L And C) And Resistance (R)	L2
24	The signal whose waveform is not effected by a linear circuit is A) Triangular Waveform Signal B) Rectangular Waveform Signal **C) Sine/Cosine Wave Signal** D) Sawtooth Waveform Signal	L2
25	Which of the following is not a classification of amplifiers on the basis of their frequency response? A) Capacitively Coupled Amplifier B) Direct Coupled Amplifier C) Band pass Amplifier **D) None Of The Mentioned**	L2
26	General representation of the frequency response curve is called **A) Bode Plot** B) Miller Plot C) Thevenin Plot D) Bandwidth Plot	L2
27	Under what condition can the circuit shown be called a compensated attenuator.  **A) C1R1 = C2R2**	L2

Course/Branch : B.E/ EEE	**Year / Semester** : II/III	Format No.	NAC/TLP-07a.13
Subject Code :EC8353	**Subject Name** **:** Electronic Devices & Circuits	Rev. No.	02
Unit No : III	**Unit Name** **:** Amplifiers	Date	30.09.2020

OBJECTIVE TYPE QUESTION BANK

	B) C1R2 = C2R1 C) C1C2 = R1R2 D) R1 = 0	
28	When a circuit is called compensated attenuator? A) Transfer Function Is Directly Proportional To The Frequency B) Transfer Function Is Inversely Proportional To The Frequency **C) Transfer Function Is Independent Of The Frequency** D) Natural Log Of The Transfer Function Is Proportional To The Frequency	L2
29	Which of the following is true? A) Coupling Capacitors Causes The Gain To Fall Off At High Frequencies B) Internal Capacitor Of A Device Causes The Gain To Fall Off At Low Frequencies C) All Of The Mentioned **D) None Of The Mentioned**	L2
30	Which of the following is true? A) Monolithic IC Amplifiers Are Directly Coupled Or Dc Amplifiers B) Televisions And Radios Use Tuned Amplifiers C) Audio Amplifiers Have Coupling Capacitor Amplifier **D) All Of The Mentioned**	L2
31	We cannot use h-parameter model in high frequency analysis because _____ A) They All Can Be Ignored For High Frequencies **B) Junction Capacitances Are Not Included In It** C) Junction Capacitances Have To Be Included In It D) Ac Analysis Is Difficult For High Frequency Using It	L2
32	Consider a CE circuit, where trans-conductance is $50m\Omega^{-1}$, diffusion capacitance is 100 pF, transition capacitance is 3 pF. $I_B = 20\mu A$. Given base emitter dynamic resistance, $r_{be} = 1000\ \Omega$, input V_I is $20*\sin(10^7 t)$. What is the short circuit current gain? A) 30 **B) 35** C) 40 D) 100	L2

Course/Branch : B.E/ EEE	**Year / Semester** : II/III	Format No.	NAC/TLP-07a.13
Subject Code :EC8353	**Subject Name** **:** Electronic Devices & Circuits	Rev. No.	02
Unit No : III	**Unit Name** **:** Amplifiers	Date	30.09.2020

OBJECTIVE TYPE QUESTION BANK

33	Given that transition capacitance is 5 pico F and diffusion capacitance is 80 pico F, and base emitter dynamic resistance is 1500 Ω, find the β cut-off frequency. **A) 7.8 X 10^6 Rad/S** B) 8.0 X 10^6 Rad/S C) 49.2 X 10^6 Rad/S D) 22.7 X 10^6 Rad/S	L2
34	For given BJT, β=200. The applied input frequency is 20 Mhz and net internal capacitance is 100 pF. What is the CE short circuit current gain at β cut-off frequency? A) 200 B) 100 **C) 141.42** D) 440.2 View Answer	L2
35	Given that β=200, input frequency is f= 20Mhz and short circuit current gain is A=100. What is the unity gain frequency? **A) 2300 Mhz** B) 2000 Mhz C) 2500 Mhz D) 3000 Mhz	L2
36	Gain bandwidth frequency is GBP= 3000 Mhz. The cut-off frequency is f=10Mhz. What is the CE short circuit current gain at the β cutoff frequency? **A) 212** B) 220 C) 300 D) 200	L2
37	Which of the statement is incorrect? A) At Unity Gain Frequency The CE Short Circuit Current Gain Becomes 1 B) Unity Gain Frequency Is The Same As Gain Bandwidth Product Of BJT C) Gain Of BJT Decreases At Higher Frequencies Due To Junction Capacitances **D) B- Cut-Off Frequency Is One Where The CE Short Circuit Current Gain Becomes B/2**	L2

Course/Branch : B.E/ EEE	**Year / Semester** : II/III	Format No.	NAC/TLP-07a.13
Subject Code :EC8353	**Subject Name** **:** Electronic Devices & Circuits	Rev. No.	02
Unit No : III	**Unit Name** **:** Amplifiers	Date	30.09.2020

OBJECTIVE TYPE QUESTION BANK

38	Given a MOSFET where gate to source capacitance is 300 pF and gate to drain capacitance is 500 pF. Calculate the gain bandwidth product if the transconductance is 30 $m\Omega^{-1}$. **A) 5.98 Mhz** B) 4.9 Mhz C) 6.5Mhz D) 5.22Mhz	L2
39	In an RC coupled CE amplifier, when the input frequency increases, which of these are incorrect? A) Reactance C_{SH} Decreases **B) Voltage Gain Increases** C) Voltage Gain Decreases Due To Shunt Capacitance D) An RC Coupled Amplifier Behaves Like A Low Pass Filter	L2
40	Consider an RC coupled amplifier at low frequency. Internal voltage gain is -120. Find the voltage gain magnitude, when given that collector resistance = 1kΩ, load = 9kΩ, collector capacitance is 0. is 0.1μF, and input frequency is 20Hz. A) 120 B) 12 **C) 15** D) -12	L2