

Program: BE Electronics and Telecommunication Engineering

Curriculum Scheme: Revised 2016

Examination: Second Year Semester III

Course Code: ECC301, Course Name: EDC-I

Time: 1 hour

Max. Marks: 20

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Note to the students:- All the Questions are compulsory and carry equal marks .

Q1.	In cut off region what is the status of BE junction & CB junction of transistor
Option A:	Reverse bias, Reverse Bias
Option B:	Reverse bias, Forward Bias
Option C:	Forward bias, Reverse Bias
Option D:	Forward bias, Forward Bias
Q2.	If external potential of V volts is applied across PN Junction such that positive terminal is connected to n type of material and negative terminal to p type of material, this condition is called as
Option A:	No Bias Condition
Option B:	Reverse Bias Condition
Option C:	Forward Bias Condition
Option D:	Ideal Bias Condition
Q3.	Select the correct option from following for the current relations of BJT
Option A:	$I_E = I_C + I_B$
Option B:	$I_E = I_C - I_B$
Option C:	$I_B = I_C + I_E$
Option D:	$I_C = I_E + I_B$
Q4.	Which diode that has been optimized for operation in the breakdown region
Option A:	PN Junction Diode
Option B:	Zener Diode
Option C:	Tunnel Diode
Option D:	Light Emitting Diode
Q5.	For zener diode to operate in zener region which from the following condition is required?
Option A:	$I_{ZMIN} < I_Z < I_{ZMAX}$
Option B:	$0 < I_Z < I_{ZMAX}$
Option C:	$I_{ZMIN} < I_Z > I_{ZMAX}$

Option D:	$I_z < I_{ZMAX}$
Q6.	In the transfer characteristics of a MOSFET, the threshold voltage is the measure of the
Option A:	minimum voltage to induce a n-channel/p-channel for conduction
Option B:	minimum voltage till which temperature is constant
Option C:	minimum voltage to turn off the device
Option D:	none of the above mentioned is true
Q7.	Identify the difference point between MOSFET and JFET?
Option A:	JFET has a p-n junction
Option B:	They are both the same
Option C:	JFET is small in size
Option D:	MOSFET has a base terminal
Q8.	For n- channel JFET, V_{gs} voltage is
Option A:	Zero
Option B:	Negative
Option C:	Positive
Option D:	None of above
Q9.	V_{be} voltage decreases at a rate of..... with increase in temperature
Option A:	2.7mV/°C
Option B:	2.5 mA/°C
Option C:	2.7 mA/°C
Option D:	2.5 v/°C
Q10.	Design a Fixed bias circuit for CE amplifier such that $V_{ce}=8v$, $I_c=2mA$ $V_{cc}=15v$ & silicon transistor with $B(\beta)=100$, consider $V_{be}=0.6v$
Option A:	$R_C= 3.5 Kohm$, $R_B= 720 Kohm$
Option B:	$R_C= 35K$, $R_B= 820 ohm$
Option C:	$R_C= 3.5 ohm$, $R_B= 720 Kohm$
Option D:	$R_C= 3.5K$, $R_B= 720 ohm$
Q11.	The RMS value of a half wave rectifier current is 10 A. Its value for full wave rectification would be
Option A:	10 A
Option B:	14.14 A
Option C:	$20/\pi$ A
Option D:	20 A
Q12.	In a photodiode, when there is no incident light, the reverse current is almost negligible and is called
Option A:	Zener current
Option B:	Dark current

Option C:	Photocurrent
Option D:	PIN current
Q13.	For BJT amplifiers, the _____ gain typically ranges from a level just less than 1 to a level that may exceed 1000.
Option A:	voltage
Option B:	current
Option C:	impedance
Option D:	power
Q14.	Which of the h-parameters corresponds to r_e in a common-base configuration?
Option A:	h_{ib}
Option B:	h_{fb}
Option C:	h_{rb}
Option D:	h_{ob}
Q15.	What is the typical value of the current gain of a common-base configuration?
Option A:	Less than 1
Option B:	Between 1 and 50
Option C:	Between 100 and 200
Option D:	Undefined
Q16.	For DC Analysis, the current in a coupling circuit is
Option A:	Zero
Option B:	Maximum
Option C:	Minimum
Option D:	Average
Q17.	The gate voltage in JFET at which drain current becomes zero isvoltage
Option A:	Saturation
Option B:	Pinch-off
Option C:	Active
Option D:	cutoff
Q18.	Amplification factor is defined as the ratio of change in.....to change in.....,at a constant value of.....
Option A:	V_{gs}, V_{ds}, I_d
Option B:	V_{ds}, V_{gs}, I_d
Option C:	I_d, V_{gs}, V_{ds}
Option D:	V_{ds}, I_d, V_{gs}
Q19.	JFET operates as voltage variable resistance in

Option A:	Saturation
Option B:	Active
Option C:	Cutoff
Option D:	ohmic
Q20.	Find the value of transconductance for N-channel JFET with $I_{DSS} = 9 \text{ mA}$, $V_p = -2\text{V}$, $V_{GS} = -1 \text{ V}$.
Option A:	7.5 mS
Option B:	6.5 mS
Option C:	4.5 mS
Option D:	5.5 mS
Q21.	Which type of JFET amplifier circuit is also known as Source Follower
Option A:	Common Source amplifier
Option B:	Common Drain amplifier
Option C:	Common Gate amplifier
Option D:	Common emitter amplifier
Q22.	Which from the following is current generating parameter in common drain JFET amplifier?
Option A:	$g_m V_i$
Option B:	$g_m V_{gs}$
Option C:	$g_m r_d$
Option D:	$g_m (1 + V_{gs})$
Q23.	When R_E of an amplifier is unbypassed, its voltage gain
Option A:	Is increased
Option B:	Is reduced
Option C:	Remains the same
Option D:	Is unaffected
Q24.	The voltage gain of an emitter follower is
Option A:	Much less than 1
Option B:	Approximately equal to 1
Option C:	Greater than 1
Option D:	Very large
Q25.	Which of the following is true?
Option A:	$I_b = \beta I_c$
Option B:	$I_b = \beta + 1 / I_c$
Option C:	$I_b = I_c / \beta$
Option D:	$I_b = I_c / \beta - 1$