EDC-II (CBCGS-ECC 402)

Set-I

Mock Paper

Q.1 -Q.17 carry 1M each

Q.18-Q.23 carry 2M each

Q.24-Q.30 carry 3M each

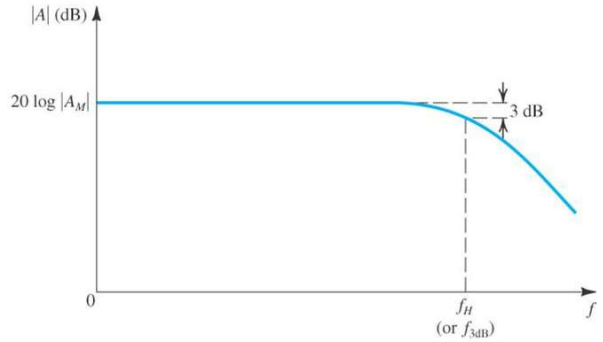
1) The basic difference between D-MOSFET and E-MOSFET is
   a) The absence of channel in E-MOSFET
   b) High input impedance in D-MOSFET
   c) The SiO_2 layer present in E-MOSFET
   d) The presence of body in D-MOSFET
2) For current conduction in E-MOSFET
   a) V_{GS} is negative
   b) V_{GS} is positive
   c) V_{GS} can be negative and positive
   d) It can operate with both V_{GS} negative and positive
3) Accumulation layer in NMOS is formed when
   a) Positive voltage is applied to the gate
   b) Negative voltage is applied to the gate
   c) The gate is grounded
   d) Accumulation does not depend on the gate voltage
4) Transformer coupling is used in
   a) Linear integrated circuits
   b) Audio amplifiers
   c) Power amplifiers
   d) Modulation circuits
5) CE-CB configuration is an example of
   a) Cascode amplifiers
   b) Cascade amplifiers
   c) Darlington amplifiers
   d) Power amplifiers
6) To design an amplifier to get A_V>1000 which configuration should be used
   a) CS-CS
   b) CE-CE
   c) CS-CE
   d) CE-CS
7) If the Q point is located at the cut-off region it is_____ power amplifier
   a) Class D
   b) Class B
   c) Class C
   d) Class AB

8) _____Power amplifier has maximum efficiency and distortion.
   a) Class A
   b) Class D
   c) Class C
   d) Class AB
9) For class A power amplifier
   a) $P_{d(max)}=0.2P_{ac(max)}$
   b) $P_{d(max)}=2P_{ac(max)}$
   c) $P_{d(max)}=4P_{ac(max)}$
   d) $P_{d(max)}=0.4P_{ac(max)}$
10) Negative feedback tends to
   a) Decreases gain and Bandwidth, increase stability
   b) Increases gain and Bandwidth, increase stability
   c) Decreases gain, increases bandwidth and stability
   d) Decreases gain and stability, increases bandwidth
11) Increase in the input impedance and decrease in the output impedance is achieved in
   a) Current series amplifier
   b) Current shunt amplifier
   c) Voltage series amplifier
   d) Voltage shunt amplifier
12) In RC phase shift oscillator, which type of feedback is used
   a) Current series amplifier
   b) Current shunt amplifier
   c) Voltage series amplifier
   d) Voltage shunt amplifier
13) In oscillators_____ acts as the input signal
   a) DC voltage
   b) Noise signal
   c) The AC voltage applied
   d) Amplified signal as feedback
14) The crystal oscillator behaves as an inductor when the oscillator operating frequency is _____
   a)Greater than parallel resonance frequency
   b) Less than series resonance frequency
   c) In between parallel resonance frequency and series resonance frequency
   d) Greater than series resonance frequency
15) For the cascaded FET amplifier, the higher cut-off frequency(f_{Hn}) of cascaded amplifier is
   a) $f_{H_n} = f_H * \sqrt{2^{1/n} - 1}$
   b) $f_{H_n} = \frac{f_H}{\sqrt{2^{1/n}-1}}$
   c) $f_{H_n} = f_H * \sqrt{2^{(1/n-1)}}$
   d) $f_{H_n} = \frac{f_H}{\sqrt{2^{(1/n-1)}}}$
16) _____ feedback is used in Wien bridge oscillator.
   a) Only positive
   b) Only negative

c) Both positive and negative

d) None of the above

17) The following response is of



a) Direct coupled
b) Transformer coupled
c) RC coupled
d) LC coupled

18) If V_{CC}= 10V and I_C=0.8mA, the power rating of power transistor is(2M)
a) 8mW
b) 4mW
c) 80mW
d) 40mW

19) If A_{V1}=2dB, A_{V2}=5dB and A_{V3}=6dB, the total gain is (2M)
a) 60dB
b) 13dB
c) 10dB
d) 42.42dB

20) An amplifier with feedback has a gain of 20 and the feedback fraction is 0.02, what is the gain without feedback. (2m)
a) 33.33
b) 14.28
c) -47.5
d) -33.33

21) If β1=150 and β2=200, the current gain of Darlington amplifier is (2M)
a) 350
b) 30k
c) 22.5k
d) 40k

22) For a power MOSFET θ°dev-case = 1.75°C/W, θ°case-sink = 1°C/W, θ°sink-amb = 5°C/W. θ°case-amb = 50°C/W .The ambient temperature is 30°C. The maximum junction or device temperature is 150°C. The maximum power dissipation in the transistor when a heat sink is used is(2M)
a) 2.32W
b) 15.48W
c) 57.75W
d) 2.077W

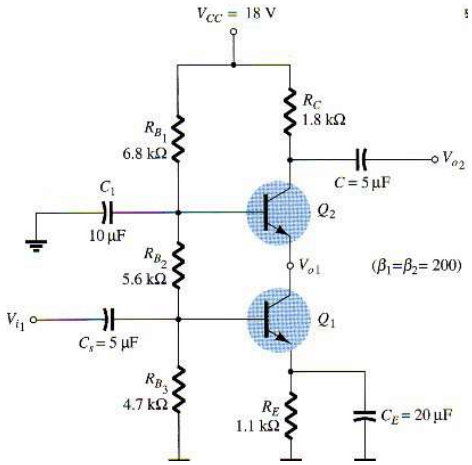
23) An amplifier consists of 4 identical stages in cascade, the bandwidth of overall- amplifier extends from 20Hz to 20kHz. The bandwidth of individual stage is(2M)

a) 45.96k
b) 8.94k
c) 20k
d) 20Hz

24) For Class B amplifier, Vo=4 Sinwt, R_L= 100Ω, Vcc=5V, the efficiency is (3M)

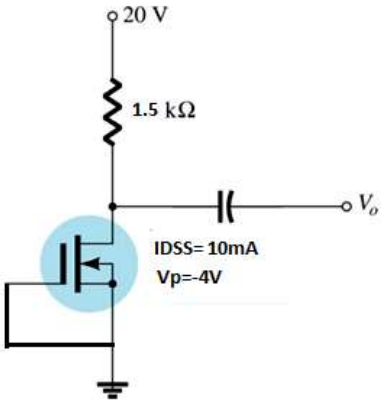
a) 1.58
b) 62.99%
c) 98.43%
d) 1.016

25) The voltage gain of the cascode circuit shown is (3M)



a) -265
b) 265
c) 70.225k
d) -70.225k

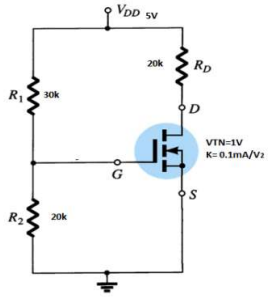
26) For the given MOSFET, the value of V_{DS} is(3M)



a) 20V

b) 0V
c) 5V
d) 15V

27) For the given circuit V_{GSQ} is (3M)



a) 3V
b) 2V
c) 1V
d) 0.5V

28) For the RC phase shift oscillator if R=10KΩ and C=0.1μF, the frequency of oscillation is:(3M)
a) 65kHz
b) 65Hz
c) 159.23Hz
d) 159.23KHz

29) For the negative feedback amplifier circuit if input signal applied has a magnitude of 40mV, Av=100 and β (feedback fraction) = 0.03, the value of feedback voltage is (3M)
a)0.03V
b) 0.06V
c) 0.09V
d) 0.12V

30) Find the value of resistor R_C in two stage CE-CE amplifier where A_{VTotal}=1600, h_{fe}=100 and hie=4.5k. (3M)
a) 1.8kΩ
b) 0.88Ω
c) 72kΩ
d) 2.8kΩ