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SARDAR PATEL UNIVERSITY
BSc (IV Sem.) Examination
Wednesday, 10th April 2013
11 am - 2 pm
US04CELE01 – Electronics Devices and Applications
Total Marks: 70

Note: Figures to the right indicate full marks.

Q.1 Multiple Choice Questions: [10]

(1) In a frequency response curve the output normally remains constant over the _____ range of frequencies.
(i) high (ii) low (iii) middle

(2) Decibel is a whit of _____ change.
(i) Voltage (ii) Current (iii) Power

(3) The _____ is sometimes called anipolar transistor.
(i) BJT (ii) FET (iii) UJT

(4) In an enhancement mode MOSFET The conductivity of the channel is enhanced by the positive bias on the _____.
(i) drain (ii) gate (iii) source

(5) _____ is the best FET biasing circuit.
(i) self bias (ii) potential divider bias (iii) fixed voltage bias

(6) In enhancement depletion mOSFET drain current is _____ when vgs=0.
(i) absent (ii) present (iii) non-continuous

(7) The common source circuit is also called _____ circuit.
(i) source follower (ii) grounded source (iii) grounded drain

(8) The dynodes are electrodes which are treated to produce _____.
(i) primary (ii) secondary (iii) neutron

(9) In common source circuit the input and output signals are _____ phase with each other.
(i) 90^0 out of (ii) 180^0 out of (iii) 270^0 out of

(10) The cadmium sulfide photoconductive cell responds to _____ light.
(i) ultraviolet (ii) visible (iii) infrared

Q.2 Answer **any ten** questions in brief. [20]

(1) Define bias point.
(2) Why does the amplifier gain falls at low frequencies?
(3) Give the constructional details of n-channel JFET.
(4) Define decibels.
(5) Draw the common source ac equivalent circuit.
(6) Draw the self bias circuit using n-channel JFET.
(7) Draw the potential divider circuit using p-channel JFET.
(8) Why common drain circuit is called source follower?
(9) Draw the common drain ad equivalent circuit.
(10) What is an LED?
(11) State the used of photoconductive cell.
(12) What is dynamic scattering?

Q.3

(a) Explain the frequency response curve of an amplifier. [06]

(b) Explain the drain characteristics of an n-channel JFET with an external bias. [04]

OR

Q.3

(a) Discuss in detail the drain characteristics of n-channel JFET when VGS=0. [05]

(b) Discuss in detail the depletion regions of n-channel JFET. [05]

Q.4

(a) Discuss in detail the enhancement mode MOSFET. [06]

(b) Explain the self bias circuit of FET. [04]

OR

Q.4

(a) Discuss in detail the depletion enhancement mode MOSFET. [06]

(b) Draw the potential divides bias circuit for a FET and explain its working. [04]

Q.5

(a) Draw the circuit of common Gate Amplifier and explain its working. [06]

(b) Draw the circuit of common Drain Amplifier and explain its working. [04]

OR

Q.5 Draw the circuit of common Source Amplifier and explain its working. [10]

Q.6

(a) Discuss in detail the Photomultiplier Tube. [07]

(b) Write a note on Optoelectronic Coupler. [03]

OR

Q.6

(a) Discuss in detail the Photoconductive Cell. [06]

(b) Write a note on Solar Cell. [04]

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