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[20 / A-14]

No. Of Printed Pages: 2

SARDAR PATEL UNIVERSITY
BSc (IV Semester) Examination
2016

Saturday, 9th April
10.30 am to 1.30 pm

US04CELE01 – Electronics Devices and Applications

Total Marks: 70

Q.1 Multiple Choice Questions.

[10]

1. At _____ voltage the channel in FET is completely closed.
(a) Current- ON (b) Switch ON (c) Pinch off
2. In a frequency response curve the output normally remains constant over the _____ range of frequencies.
(a) High (b) Middle (c) Low
3. In the symbol of enhancement mode MOSFET the line representing the channel is broken to indicate that channel does not exist until the _____ potential is applied.
(a) Drain (b) Gate (c) Source
4. In N channel enhancement mode MOSFET the substrate is made of _____ type semiconductor.
(a) PN (b) P (c) N
5. In common source circuit the input and output signals are _____ phase with each other.
(a) 90° out of (b) 180° out of (c) 270° out of
6. The common source circuit is also called _____ circuit.
(a) Grounded Drain (b) Source follower (c) Grounded source
7. The dynodes are electrodes which are treated to produce _____ emission.
(a) Primary (b) Secondary (c) Neutron
8. In common source amplifier output is amplified and _____ phase compared to input.
(a) Out of (b) In same (c) In same & out of
9. Devices for operation as solar energy converters require _____ surface area.
(a) Thick (b) Large (c) Small
10. LEDs made from _____ emits infrared radiation.
(a) GaAsP (b) GaP (c) GaAs

Q.2 Answer Any Ten questions in brief.

[20]

1. Give the constructional detail of N channel JFET.
2. List different parameters of FET.

4. Why the potential divider biasing circuit is better than self bias circuit?
5. Draw the symbols of depletion enhancement mode MOSFET.
6. Draw the Self-bias circuit using N channel JFET.
7. Draw the ac equivalent circuit of common gate amplifier.
8. Draw the common drain ac equivalent circuit.
9. Why common drain circuit is called Source follower ?
10. What is dynamic scattering ?
11. What does photoconductive cell consist of ?
12. What is an LED ?

Q.3 Why the frequency response of the BJT amplifier falls at lower and higher frequency ends. Explain giving necessary figures. [10]

OR

Q.3 (a) Discuss in detail the drain characteristics of N channel JFET when $V_{GS} = 0$. [05]
(b) Explain in detail the depletion regions of N channel JFET. [05]

Q.4 Explain in detail the enhancement mode MOSFET giving necessary figures. [10]

OR

Q.4 Explain in detail depletion enhancement mode MOSFET giving necessary diagram. [10]

Q.5 (a) Give the circuit of common gate amplifier and explain its working. [05]
(b) Draw the circuit of common drain amplifier and explain its working. [05]

OR

Q.5 Give the circuit of common source amplifier and explain its working. [10]

Q.6 Discuss in detail Liquid crystal display. [10]

OR

Q.6 Discuss in detail the photomultiplier tube. [10]

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