

SEAT No. _____

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[14]

SARDAR PATEL UNIVERSITY
B.Sc. (4th Semester) Examination
Tuesday, 10th April 2018
10:00 am to 01:00 pm

Electronics

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) Pinch off (b) Switch ON (c) Current ON
2. In a frequency response curve the output normally remains constant over the _____ range of frequencies.
(a) Low (b) Middle (c) High
3. Decibel is a unit of _____ change.
(a) Power (b) Voltage (c) Current
4. In N channel enhancement mode MOSFET the substrate is made of _____ type semiconductor.
(a) N (b) P (c) PN
5. 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) Gate (b) Drain (c) Source
6. In enhancement depletion MOSFET drain current is _____ when $V_{gs} = 0$.
(a) Present (b) Absent (c) Non continuous
7. In common source circuit the input and output signals are _____ phase with each other.
(a) 270° out of (b) 90° out of (c) 180° out of
8. The dynodes are electrodes which are treated to produce _____ emission.
(a) Neutron (b) Secondary (c) Primary
9. Devices for operation as solar energy converters require _____ surface area.
(a) Small (b) Large (c) Thick
10. The liquid crystal display is made from _____ compounds.
(a) Organic (b) Inorganic (c) Semiconductor

Q.2 Answer any **TEN** questions in brief

[20]

1. Explain what do you understand by stray capacitance.
2. Give the constructional detail of N channel JFET.

[P.T.O]

3. List different FET parameters.
4. Why potential divider biasing circuit is better than self bias circuit ?
5. Draw the self bias circuit using N channel FET.
6. Draw the symbols of depletion enhancement mode MOSFET.
7. Draw the ac equivalent circuit of common source amplifier.
8. Draw the ac equivalent circuit of common gate amplifier.
9. Why common drain circuit is called source follower ?
10. What is dynamic scattering ?
11. State the uses of Photoconductive cell.
12. What is an LED ?

Q.3 Explain in detail the depletion regions of N channel JFET. [10]

OR

Q.3 With the help of necessary diagrams explain in detail the frequency response of an amplifier. [10]

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

OR

Q.4 Explain in detail the depletion enhancement mode MOSFET with the help of necessary diagram. [10]

Q.5 Draw the circuit of common gate amplifier and explain its working in detail. [10]

OR

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

Q.6 Explain in detail the Liquid crystal display. [10]

OR

Q.6 With the help of necessary diagrams explain the construction and working of photo multiplier tube. [10]

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