[24] SEAT No. _____ No. of Printed Pages : 02

**SARDAR PATEL UNIVERSITY**

**B.Sc. (4th Semester) Examination**

**Tuesday,9th April 2019**

**10:00 am to 01:00 pm**

**Electronics**

**US04CELE01- Electronics Devices and Applications**

**Total Marks : 70**

Q.1 Multiple choice questions. [10]

1. The JFET is a_____ controlled Device.
   (a) Voltage (b) Current (c) Power
2. In a frequency response curve the output normally remains constant over the _____ range of frequencies.
   (a) Low (b) Middle (c) High
3. _____ is the best FET biasing circuit.
   (a) Potential Divider Bias (b) Self Bias (c) Fixed Voltage Bias
4. In Common Source Circuit the input and output signal are _____ phase with each other.
   (a) $180^{0}$ out of (b) $90^{0}$ out of (c) $270^{0}$ out of
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. The Common Drain amplifier is also Known as _____ follower.
   (a) Drain (b) Gate (c) Source
7. The input impedance of Field Effect Transistor is _____ .
   (a) High (b) Low (c) Zero
8. The dynodes are electrodes which are treated to produce_____ emission.
   (a) Neutron (b) Secondary (c) Primary
9. LEDs made from _____ emit infrared radiation.
   (a) GaAs (b) GaAsP (c) GAP
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. Why does the amplifier Gain falls at low Frequency?
2. Define Decibel.
3. List different FET parameters.
4. Draw the Symbols of depletion enhancement mode MOSFET.

5. Draw the potential divider circuit using P channel FET.
6. Draw the symbols of enhancement mode N-Channel MOSFET.
7. Draw the common drain ac equivalent circuit .
8. Draw the common source ac equivalent circuit .
9. Draw the ac equivalent circuit of common gate amplifier.
10. What does photoconductive cell consists of ?
11. What is Dynamic scattering ?
12. What is an LED ?

Q.3 Explain in detail the frequency response of an amplifier giving necessary figures. [10]

OR

Q.3 [a] Explain the drain characteristics of N channel JFET with external bias. [06]

[b] Discuss in detail the depletion region of N channel JFET. [04]

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

OR

Q.4 Dicuss in detail the depletion enhancement MOSFET giving necessary figures. [10]

Q.5 Discuss in detail the working of common source amplifier giving necessary figures . [10]

OR

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

Q.6 Discuss in detail the photo multiplier tube with the help of necessary diagrams. [10]

OR

Q.6 Discuss in detail the Liquid Crystal Display giving necessary diagrams. [10]

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