School of University Polytechnic
Diploma in Computer Science and Engineering
Mid Term Examination - Nov 2023

Duration : 90 Minutes
Max Marks : 50

Sem III - N1DK320B - Fundamentals of Electronic Devices and Digital Electronics

General Instructions
Answer to the specific question asked
Draw neat, labelled diagrams wherever necessary
Approved data hand books are allowed subject to verification by the Invigilator

1) Show the graphic symbol of crystal diode & explain its significance. How the polarities of crystal diode are identified? — K2 (2)

2) Write short note on (i) Breakdown voltage (ii) Knee Voltage (iii) Peak inverse voltage — K1 (3)

3) Demonstrate the transistor action in detail. — K2 (4)

4) Explain the construction & working of a JFET. — K2 (6)

5) Build input-output characteristics of CB connection. — K3 (6)

6) Make use of operational characteristics of JFET, write its some salient featues. — K3 (9)

7) Construct a design scenario where a common emitter transistor configuration is utilized to amplify a weak input signal, requiring a thorough understanding of the transistor's voltage and current relationships." — K4 (8)

8) Examine Metal-Oxide-Semiconductor Field-Effect Transistors (MOSFETs), comparing Enhancement-mode and Depletion-mode types, discussing threshold voltage, on/off characteristics, biasing necessities, and real-world examples illustrating their impact on integrated circuits. — K4 (12)

OR

Analyze Junction Field-Effect Transistors (JFETs), explaining their operational principle, depletion region formation, N-channel and P-channel distinctions, biasing effects, and applications in modern electronic circuits. — K4 (12)