UNIVERSITY DEPARTMENT OF PHYSICS

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M.SC. PHYSICS

SEMESTER - II

PAPER – 203: ELECTRONICS

MODEL QUESTIONS

GROUP A

SHORT ANSWER TYPE QUESTIONS

1. What is a flip-flop? What are the differences between a flip-flop and a latch?
2. What do you mean by poles and zeros?
3. What is a MOSFET? How does it differ from a FET?
4. What is a current mirror? Explain the operation of a simple current mirror.
5. What is an operational amplifier? Show that for an ideal difference amplifier, the gain from its two inputs must be equal in magnitude, but opposite in phase.
6. What do you mean by a logic family? Describe the features of various logic families.
7. What do you mean by modulation? Why is it necessary?

GROUP B

LONG ANSWER TYPE QUESTIONS

1. What is PLL? Explain PLL as a demodulator.
2. Explain the Routh-Hurwitz stability criterion.
3. Describe the construction and working of a UJT. Draw a neat circuit diagram of UJT as an oscillator and find an expression for its frequency of oscillation.
4. Explain the input and output characteristics of a BJT.
5. Design a difference amplifier using BJT and find an expression for its output.
6. Explain JK master-slave flip-flop.
7. What is a counter? Explain the operation of a ripple counter with a neat diagram.

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