COURSE   :   **CORE**
PAPER   :   **ELECTRONICS - I**
TIME   :   **3 HOURS**   MAX. MARKS : 100

SECTION - A
ANSWER ALL QUESTIONS: (10x3=30)

1. Define transconductance.
2. What is negative resistance?
3. Differentiate between a counter and a register.
4. What is the application of JK flip flop in toggle mode?
5. What is the meaning of phase locked loop (PLL)?
6. How does an op-amp work as an integrator?
7. Mention the various data transfer schemes in 8085.
8. What is called memory mapping in 8085?
9. What are the input handshaking signals for 8255?
10. What are BSR mode and I/O mode in 8255?

SECTION – B
ANSWER ANY FIVE QUESTIONS: (5x5=25)

11. Discuss the characteristics of DIAC.
12. Explain the working of up-down counter.
13. How does a flux meter work?
14. Explain the op-amp sample hold system.
15. What are first order and second order filters?
16. Compare memory mapped I/O and I/O mapped I/O.
17. Explain the interfacing of stepper motor.

SECTION – C
ANSWER ANY THREE QUESTIONS: (3x15=45)

18. Discuss the input and output characteristics of FET and thus explain the working of a FET as an amplifier.

19. Explain the working of (a) shift register and (b) Johnson's counter.

20. (a) Design op-amps circuit to solve simultaneous equations,
       $-4x + y = 1$ and $6x - 5y = 9$.
    (b) How does an op-amp temperature indicator work?

21. (a) Give the architecture of 8085.
    (b) What are the various addressing modes of 8085?

22. (a) Give the architecture of 8255.
    (b) Explain the interfacing of DAC and ADC.

****