SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)
(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai — 600 044.
M.Sc.(Physics) END SEMESTER EXAMINATIONS NOVEMBER - 2023
SEMESTER - I

22PPHCT1004 - Integrated Electronics and Microprocessor

Total Duration : 2 Hrs. 30 Mins. Total Marks : 60

Section B

Answer any **SIX** questions $(6 \times 5 = 30$ Marks)

1. Explain the construction and working of an IMPATT diode.
2. What is an R-2R ladder? Explain the D/A conversion using R-2R ladder method.
3. Draw the prototype for a high pass filter section of
   (a) first order (b) second order.
4. How stack is organized in 8085 microprocessor? How are the data stored in and retrieved from stack.
5. Discuss the 4 Junction Traffic Lights control simulation
6. Sketch the working of a differentiator circuit using an OP AMP.
   Explain its working.
7. Write a program to find the square-root of a number using 8085.
8. What is a Stepper motor? How is it used to perform clockwise rotation with ALP.

Section C

I - Answer any **TWO** questions $(2 \times 10 = 20$ Marks)

9. Explain the basic operation of a silicon-controlled rectifier, draw the I-V characteristics of a SCR and identify the different regions of the curve.
10. Explain the operation of a 4-bit shift register. Show and explain how the divide 4 and divide 8 counters can be constructed.
11. Draw the pin configuration of IC 555 and explain its use as a Astable Multivibrator.
12. Compare direct I/O and memory mapped I/O? How many I/O ports can be addressed in both cases? Explain.

II - Compulsory question $(1 \times 10 = 10$ Marks)

13. Write an Assembly Language Program to sort the given data in Ascending and Descending Order.

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