

FACULTY OF SCIENCE

M.Sc. II-Semester (CBCS / NON-CBCS) (New) Examination, April / May 2013

Subject: Physics & Applied Electronics

Paper – V (205)

Electronics – II

Time: 3 Hours

Max.Marks: 80

Note: Answer all questions from Part – A and Part – B.**Each question carries 4 marks in Part-A and 12 marks in Part-B.****PART – A (8x4 = 32 Marks)**

[Short Answer Type]

1. Distinguish between inverting and non-inverting amplifiers.
2. Describe the working of an integrator and differentiator.
3. Generate a 3 variable and 4 variable Karnaugh maps.
4. Write about encoder and decoder circuits.
5. Define accuracy and resolution of a analog-to-digital converter.
6. Explain the working of a synchronous counter.
7. What happens when HLT instruction is used in 8085? Explain.
8. Write about hardware interrupts of 8085.

PART – B (4x12 = 48 Marks)

[Essay Answer Type]

- 9.(a) Describe logarithmic and exponential amplifiers.
OR
(b) Using IC 555, describe the design details of Astable multi-vibrators
- 10.(a) Minimize the Boolean expression
$$Y = \bar{A}\bar{B}\bar{C}D + \bar{A}\bar{B}CD + \bar{A}B\bar{C}D + \bar{A}BCD + ABCD$$

and implement using NAND gates.
OR
(b) Develop the design logic for a full-adder circuit.
- 11.(a) Draw the circuit diagram of a 5-bit R-2R ladder network and explain its working.
OR
(b) Describe the designing of a successive approximation method ADC.
- 12.(a) Explain the architecture of microprocessor 8085.
OR
(b) Explain the instruction set of 8085 microprocessor with suitable example.