Code No. 9241 / CBCS / Non-CBCS / N

FACULTY OF SCIENCE

M.Sc. II – Semester (New)(CBCS / Non-CBCS) Examination, April / May 2014

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 (8 x 4 = 32 Marks)
[Short Answer Type]

1 List the characteristics of ideal operational amplifier. What is CMRR?
2 Explain an operational amplifier as an integrator.
3 Differentiate serial in serial out and serial in parallel out registers using suitable diagrams.
4 Explain Race around condition in flip-flops.
5 Distinguish between synchronous and asynchronous counters.
6 Define accuracy and resolution of A/D converter.
7 Write a short note on FLAG register in 8085 microprocessor.
8 Enumerate the addressing modes in 8085 microprocessor.

PART – B (4x12 = 48 Marks)
[Essay Answer Type]

9 (a) Explain, how to generate a square wave using an operational amplifier using suitable diagram and derive an expression for its time period.

OR

(b) Discuss an op amp as the fundamental building block in an electronic analog computer.

10 (a) Minimize the following Boolean expressions:

i) $Y = A(A'+C)(A'B+C)(A'BC+C')$ ii) $Y = \bar{A}\bar{B}\bar{C} + \bar{A}B\bar{C} + A\bar{B}\bar{C} + AB\bar{C}$

OR

(b) Draw the circuit diagram of master-slave J.K. flip-flop using NAND gates and explain its working.

11 (a) Explain in detail A/D converter by successive approximation method and write its advantages and disadvantages.

OR

(b) Discuss decade counter using flip-flops with help of suitable timing diagram.

12 (a) Explain arithmetic and logic instructions of 8085 μp with suitable examples.

OR

(b) Write an ALP to arrange given numbers in ascending order using 8085 μp instructions.

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