

**S.Y. B. SC. (COMPUTER SCIENCE) SEM –III (CBCS - 2016
COURSE) : SUMMER - 2018**

SUBJECT: DIGITAL SYSTEMS & MICROPROCESSORS

Day : **Tuesday**
Date : **24/04/2018**

S-2018-0814

Time: **03.00 PM TO 06.00 PM**
Max. Marks: 60

N. B.:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Draw diagrams **WHEREVER** necessary.

Q.1 Answer any **TWO** of the following: **(12)**

- a) What is virtual memory? Explain segmentation system of it.
- b) Draw and explain block diagram of UART.
- c) Explain any three addressing modes of microprocessor with examples.

Q.2 Answer any **TWO** of the following: **(12)**

- a) Explain DMA transfer scheme with necessary diagram.
- b) With necessary diagram explain the action of dual slope analog to digital converter.
- c) Give the classification of instructions and explain any two with examples.

Q.3 Answer any **TWO** of the following: **(12)**

- a) Explain Von-Neumann architecture for microprocessors.
- b) With necessary diagram explain asynchronous data transfer.
- c) What is Cache memory? Explain how it enhances system performance.

Q.4 Answer any **THREE** of the following: **(12)**

- a) Explain the flag register of 8086 microprocessor.
- b) Write a short note on RISC.
- c) Explain three level memory hierarchy with necessary diagram.
- d) Explain any four parameters of digital to analog converter.

Q.5 Answer any **FOUR** of the following: **(12)**

- a) Explain the following instructions:
i) MOV R₁, R₂ ii) DAA iii) ADD AX, BX
- b) Explain any three assembler directives.
- c) What do you mean by multicore processors? Explain.
- d) Define the following parameters of memory:
i) Access time ii) Speed iii) Capacity
- e) Draw well labeled diagram of 2-bit flash ADC.
- f) Explain the instruction format.

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