

B. TECH. (COMPUTER SCIENCE & BUSINESS SYSTEMS) (CBCS - 2018 COURSE)

B.Tech. (CSBS) Sem - III : : SUMMER - 2022

SUBJECT : COMPUTER ORGANIZATION & ARCHITECTURE

Day : Tuesday

Date : 31-05-2022

S-20446-2022

Time : 02:30 PM-05:30 PM

Max. Marks : 60

N.B.

- 1) All questions are **COMPULSORY**.
 - 2) Figures to the right indicate **FULL** marks.
 - 3) Assume suitable data if necessary.
 - 4) Use of non – programmable **CALCULATOR** is allowed.
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Q.1 Describe segmentation concept in 8086 and state its advantages and disadvantages. (10)

OR

Q.1 Explain the functions of following pins of 8086. (10)

- i) $\overline{MN} / \overline{MX}$
- ii) \overline{BHE}
- iii) \overline{TEST}
- iv) READY
- v) ALE

Q.2 Draw flow chart for restoring division and perform division using same Dividend = 1100 Divisor = 0100 (10)

OR

Q.2 Represent $(309.1875)_{10}$ in single and double precision formats. (10)

Q.3 Describe Horizontal and vertical micro instruction format. (10)

OR

Q.3 Describe Micro instruction sequencing and encoding with neat diagram. (10)

Q.4 Describe Associative mapped cache. Consider a cache consisting of 16 words. Each block consists of 4 words. Main memory is 256 bytes. Find the number of bits in TAG, SET and WORD. (10)

OR

Q.4 What is principle of Locality? Describe various replacement algorithms. (10)

Q.5 Describe the significance and working of DMA controller. (10)

OR

Q.5 Define Arbitration. Explain Daisy chaining and polling methods with their advantages and disadvantages. (10)

Q.6 What is cache coherency problem? How it can be resolved. (10)

OR

Q.6 Describe phases of pipelined instruction processing. (10)