

BACHELOR OF TECHNOLOGY (C.B.C.S.) (2014 COURSE)
B.Tech.Sem - VI COMPUTER : WINTER- 2022
SUBJECT : COMPUTER ORGANIZATION & ARCHITECTURE

Day : Tuesday

Time : 10:00 AM-01:00 PM

Date : 29-11-2022

W-13660-2022

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) Draw neat and labeled diagrams **WHEREVER** necessary.
 - 5) Use of non-programmable **CALCULATOR** is allowed.
-

- Q.1** a) Compare RISC and RISC architecture. (05)
b) Discuss the basic CPU architecture. (05)

OR

- Q.1** Draw and explain in detail instruction cycle state diagram. (10)
- Q.2** Draw and explain the Booth's algorithm for 2's complement multiplication and perform multiplication for the following numbers using Booth's algorithm. (10)
Multiplicand: -5
Multiplier: 6

OR

- Q.2** Draw and explain non-restoring division algorithm. Solve following example using non-restoring division algorithm: i) (9/5). (10)
- Q.3** a) How is a horizontal micro-instruction interpreted? (05)
b) Discuss the Register Transfer Language. (05)

OR

- Q.3** Define micro-operations. Explain the micro-operations within the indirect and interrupt cycle. (10)
- Q.4** a) What is bus arbitration? (05)
b) Discuss interrupt driven I/O. (05)

OR

- Q.4** Write short notes on following: (10)
a) PCI bus
b) SCSI bus
- Q.5** a) What are the common characteristics shared by all RAID levels. (05)
b) Discuss the concept of memory hierarchy. (05)

OR

- Q.5** Explain the need of replacement algorithm. Consider reference string as: 6, 1, 0, 4, 3, 2, 1, 7, 8, 9, 0, 3, 5. Find the page fault by using FIFO page replacement and least recently used page replacement algorithm. (10)
- Q.6** a) Explain the concept of multiprocessor architecture. (05)
b) Explain closely coupled system in detail. (05)

OR

- Q.6** Explain flynn's classification for multiprocessor system in detail. (10)