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Question Paper Code: 93306

B.E./B.Tech. DEGREE EXAMINATION, NOV 2022

Third Semester

Computer Science Engineering

19UCS306– COMPUTER ORGANIZATION

(Regulation 2019)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

1. Data transfer between the main memory and the CPU register takes place through two registers namely. CO1- U
(a) General purpose register and MDR (b) Accumulator and program counter
(c) MAR and MDR (d) MAR and Accumulator.
2. The partial remainder is restored by adding the divisor to the negative difference is called _____. CO1- U
(a) comparison method (b) Restoring method
(c) non restoring method (d) divide stop.
3. _____ occurs during an instruction. all subsequent instructions that may have been partially executed and discarded. CO1- U
(a) Precise exception (b) imprecise exception. (c) Divide by zero (d) Inexact
4. Memory which is electrically erasable is _____. CO2- R
(a) EBROM. (b) EEPROM. (c) ROM. (d) PROM.
5. An interrupt for which hardware automatically transfers the program to a specific memory location is known as CO2- R
(a) Software interrupt (b) Hardware interrupt
(c) Maskable interrupt (d) Vector interrupt

PART – B (5 x 3= 15 Marks)

6. What is the straight-line sequencing? CO1- U

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|-----|--|----------|--|
| 7. | How bit pair recoding of multiplier speeds up the multiplication process? | CO1- U | |
| 8. | What are the possibilities of imprecise exception? | CO2- U | |
| 9. | An address space is specified by 24 bits and the corresponding memory space by 16 bits. How many words are there in the virtual memory and in the main memory? | CO2- App | |
| 10. | Why program controlled I/O is unsuitable for high-speed data transfer? | CO1- U | |

PART – C (5 x 16= 80Marks)

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| 11. | (a) (i) Explain the basic organization of a computer with the block diagram in detail. | CO1- U | (8) |
| | (ii) Explain basic operational concepts of a computer system | CO1- U | (8) |
| | Or | | |
| | (b) Explain in detail about instruction and instruction sequencing. With proper example | CO1- U | (16) |
| 12. | (a) Explain the Hardware implementation of floating point addition-subtraction unit with a neat diagram. | CO1- U | (16) |
| | Or | | |
| | (b) Explain hardware implementation of multiplication unit | CO1- U | (16) |
| 13. | (a) Explain the techniques for handling control hazards in pipelining | CO1- U | (16) |
| | Or | | |
| | (b) Explain superscalar processor. | CO1- U | (16) |
| 14. | (a) Explain in detail about different memory technologies and its relevance. | CO1- U | (16) |
| | Or | | |
| | (b) (i) Explain detail about Asynchronous DRAMS | CO1- U | (8) |
| | (ii) Discuss the ways of improving the cache performance. | CO1- U | (8) |
| 15. | (a) (i) Explain in detail about synchronous bus. | CO1- U | (8) |
| | (ii) Describe the data transfer method using DMA. | CO1- U | (8) |
| | Or | | |
| | (b) Explain the general steps involved in interrupt driven data transfer. | CO1- U | (16) |