G 5482

# B.TECH. DEGREE EXAMINATION, MAY 2017

## Fourth Semester

Branch : Information Technology

IT 010 403 – COMPUTER ORGANISATION AND ARCHITECTURE [IT]

(New Scheme – 2010 Admission onwards)

[Improvement/Supplementary]

Time : Three Hours                                          Maximum : 100 Marks

## Part A

*Answer all questions.*

*Each question carries 3 marks.*

1.  Explain the structure of a computer in detail.

2.  Define and explain data path in CPU.

3.  Explain the concept of mapping methods in detail.

4.  What are the types of firewall? Explain them.

5.  Explain the pipeline hazards in detail.

(5 × 3 = 15 marks)

## Part B

*Answer all questions.*

*Each question carries 5 marks.*

6.  Define ALP. Differentiate ALP from High level programming.

7.  Explain the design of logic unit with a neat diagram.

8.  Explain the advantages and applications of Semiconductor memories.

9.  Give an account on "PCI Bus".

10. What is a Multiprocessor? Explain in detail.

(5 × 5 = 25 marks)

## Part C

*Answer all questions.*

*Each full question carries 12 marks.*

11. Discuss the functional components of a computer in detail.

*Or*

12. Differentiate RISC from CISC. Explain the difference in detail.

**Turn over**

13. (i) Explain the organization of a processor in detail.

    (ii) Explain the operations of a arithmetic unit in detail.

*Or*

14. Discuss in design of Micro-programmed control unit with an example.

15. Explain the structures and applications of SRAM and DRAM cells with neat diagrams.

*Or*

16. Explain the concept of virtual memory and Cache memory in detail.

17. Explain the following :

    (i) Interrupt controlled I/O.

    (ii) DMA controlled I/O.

*Or*

18. Write short notes :

    (i) USB Bus.

    (ii) I/O control mechanism.

    (iii) Storage devices.

19. Discuss in detail the practical issues in network interconnection with an example.

*Or*

20. (i) Explain the models of memory consistency in detail.

    (ii) Write technical notes on "Issues of dead lock and scheduling".

                                                            (5 × 12 = 60 marks)