

(6 pages)

Reg. No. :

Code No. : 20989

Sub. Code : GMCS 31/
GMSE 31

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2014.

Third Semester

Computer Science — Main

COMPUTER ARCHITECTURE

(For those who joined in July 2012 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer.

1. A memory that is a part of control unit is referred to as a _____.

- (a) Program memory
- (b) Data memory
- (c) Control memory
- (d) Control program

2. In instruction format, the no of bits used for operation code

- (a) 4
- (b) 2
- (c) 3
- (d) 5

3. The minimum time delay between the initiations of two independent memory operations is called _____.

- (a) access time
- (b) cycle time
- (c) transfer time
- (d) latency time

4. The register that holds the address for the stack is _____.

- (a) Data pointer
- (b) Sp
- (c) Stack
- (d) Program counter

5. The sequence counter used in the multiplication algorithm denotes number of bits in the

- (a) Multiplicand
- (b) Partial product
- (c) Multiplier
- (d) Double length multiplier

6. The _____ address is defined to be the memory address obtained from the computation dictated by the given addressing mode

- (a) Relative
- (b) Effective
- (c) Virtual
- (d) None of these



7. In serial asynchronous data transmission, start bit is always _____.
- (a) High (b) Low
(c) 1 (d) Tristated
8. _____ circuit implements the priority function.
- (a) Decoder (b) Multiplexers
(c) Demulti-plexers (d) Priority encoders
9. ADO is an
- (a) Application top level interface
(b) Application level interface
(c) Both
(d) None
10. The sequence of instruction read from memory constitutes an _____.
- (a) Instruction stream
(b) Group stream
(c) Cycle stream
(d) Machine cycle stream

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Explain the organization of stored program.
- Or
- (b) What is the purpose of control memory?
12. (a) Write any three program control instructions with description.
- Or
- (b) Write short note about "Reverse Polish Notation".
13. (a) Apply the multiplication algorithm to multiply the numbers 23×39 .
- Or
- (b) Explain the process of addition of floating point numbers.
14. (a) Explain the operation of Daisy-chaining priority.
- Or
- (b) Write short notes for the following
- (i) Virtual memory
(ii) Auxiliary memory.



15. (a) Write short notes on the following

- (i) RISC pipeline
- (ii) Vector processing
- (iii) Array processing.

Or

(b) Write short note about Multi processors.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain with neat block diagram common bus system. And also explain how it is communicated with memory and computer register?

Or

(b) Explain the basic functions of instruction cycle.

17. (a) What is meant by addressing modes? Explain any five addressing modes with examples.

Or

(b) What is meant by stack? Explain the operation of stack with neat block diagram.

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18. (a) Explain the implementation of addition and subtraction algorithms.

Or

(b) Describe the process of floating-point division and its implementation in system.

19. (a) Explain the communication link between I/O bus and I/O device with neat block diagram.

Or

(b) What is a cache memory? Explain the different Cache mapping mechanism.

20. (a) What is meant by RISC processors and what are the difference between the RISC and CISC processors.

Or

(b) Explain the term array processors. Describe the various array processors with neat block diagram.

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