

BCA-106

261842

B.C.A. First Year Examination, 2013

B.C.A.

PAPER-VI

COMPUTER ORGANIZATION

Maximum Marks : 100

SECTION-A

खण्ड-अ

Marks : 50

Time : 1½ Hours

Candidates are required to first answer the Section-A (Multiple Choice Questions) by marking correct choice on OMR Sheet in prescribed time. All questions are compulsory and carry equal marks. There is no negative marking for wrong answers. सर्वप्रथम खण्ड अ के सभी वस्तुनिष्ठ प्रश्नों के उत्तर ओ. एम. आर. शीट में परीक्षार्थी को निश्चित समय में देने हैं। सभी प्रश्न अनिवार्य एवं समान अंक के हैं गलत उत्तर का ऋणात्मक मूल्यांकन नहीं किया जायेगा।

SECTION-B

खण्ड-ब

Marks : 50

Time : 1½ Hours

After depositing O.M.R. Sheet of Section-A with invigilator, the candidate are required to answer one question from each unit (each question in 250 words) in a separate answer-book provided to them. All questions carry equal marks. Attempt one question from each unit.

खण्ड अ की ओ. एम. आर. शीट पर्यवेक्षक को जमा कराने के पश्चात् परीक्षार्थी खण्ड ब के प्रत्येक इकाई से एक प्रश्न का उत्तर दी गई उत्तरपुस्तिका में देंगे। प्रत्येक प्रश्न का उत्तर लगभग 250 शब्दों में दिया जाना है एवं सभी प्रश्नों के अंक समान हैं। प्रत्येक युनिट से एक प्रश्न करना अनिवार्य है।

SECTION-A

UNIT-I

1. Differentiate

What do y

2. What is in

Explain st

3. Explain In

Discuss m

4. Differenti

Differenti

5. Explain a

Differenti

1. Analog systems are different from digital systems because :
(A) they use transistors
(B) they handle information in analog form internally
(C) they handle information in digital form
(D) they are slow
2. Which of the following is the first integrated logic family ?
(A) RTL (B) DTL
(C) TTL (D) MOS
3. The worst-case noise margin occurs with :
(A) Small fanout (B) Full fanout
(C) No fanout (D) None of these
4. Which TTL sub-family has maximum speed ?
(A) Standard TTL (B) High speed TTL
(C) Schottky-clamped TTL (D) Low power TTL
5. The time required for a gate or inverter to change its state is defined as :
(A) rise time (B) delay time
(C) propagation time (D) operating speed
6. Which of the following logic families has the maximum functional capacity ?
(A) SSI (B) MSI
(C) LSI (D) VLSI
7. When the maximum clock rate is quoted for a logic family, then it applies to a :
(A) Shift register (B) Flip-flop
(C) Counter (D) Single logic gate
8. FETs are used in linear ZCs to :
(A) Increase device complexity (B) Provide large resistances
(C) Increase input resistance (D) Both (b) and (c)

9. An or gate can be imagined as :
- (A) Switches connected in series (B) Switches connected in parallel
(C) MOS transistors connected in series (D) None of these
10. A multiplexer is also known as :
- (A) Coder (B) Decoder
(C) Data selector (D) Multivibrator

UNIT-II

11. Which can read data and convert them to a form that a computer can use ?
- (A) Logic (B) Storage
(C) Control (D) Input device
12. Which of the following terms is the most closely related to main memory ?
- (A) Non-volatile (B) Permanent
(C) Control unit (D) Temporary
13. Which of the following are used to quickly accept, store and transfer data and instructions that are being used immediately by the CPU ?
- (A) Registers (B) Microprocessor
(C) ROM chips (D) Data buses
14. Which of the following affects processing power ?
- (A) Clock speed (B) Addressing scheme
(C) Register size (D) All of the above
15. The CPU of a computer takes instruction from the memory and executes them. What is this process called ?
- (A) Load cycle (B) Time sequence
(C) Fetch-execute cycle (D) Clock cycle
16. Which part of the computer is used for calculating and comparing ?
- (A) ALU (B) Disk unit
(C) Modem (D) All of the above

17. The ALU of a computer responds to the commands coming from :
(A) Primary memory (B) Control section
(C) External memory (D) Cache memory
18. Primary storage is as compared to secondary storage.
(A) Slow and inexpensive (B) Fast and inexpensive ✓
(C) Slow and expensive (D) Fast and expensive ✓
19. The process of entering data into a storage location :
(A) Adds to the contents of the location (B) Is known as a readout operation
(C) Cause variation in its address number (D) Is destructive of previous contents
20. A 32 bit microprocessor has the word length equal to :
(A) 2 bytes (B) 4 bytes ✓
(C) 8 bytes (D) 32 bytes ✓

UNIT-III

21. A built-in number that identifies a location in storage is known as :
(A) Location (B) Register
(C) Address (D) Accumulator
22. The time required to transmit a message from a terminal to the computer and to receive a replay at that terminal is :
(A) Real time (B) Response time ✓
(C) Access time (D) All of the above ✓
23. The basic unit within a computer store capable of holding a single unit of data is :
(A) Register (B) ALU
(C) Control unit (D) Store location
24. The instruction code in machine language or assembled which specifies the basic operations of the CPU is :
(A) Machine code (B) Instruction code ✓
(C) Opcode (D) All of the above ✓

BC.

25. A secondary storage device with immediate access to any part of the stored data is :
(A) Direct access device (B) Printer
(C) Keyboard (D) Punched card
26. A means of storing large amounts of data outside the main memory is :
(A) Accumulator (B) Prime memory
(C) Auxiliary store (D) All of the above
27. Which bus is used to transmit the data between the memory location and the microprocessor:
(A) Address (B) Data
(C) Control (D) All of the above
28. The time required for the fetching and execution of one simple machine instruction is :
(A) Delay time (B) CPU cycle
(C) Real time (D) Seek time
29. Each model of a computer has a unique :
(A) Assembly language (B) Machine language
(C) High level language (D) All of the above
30. Which of the following are the building blocks of all the circuits in a computer.
(A) Circuit switch (B) Logic gates
(C) Logical operators (D) Instructions

UNIT-IV

31. It is possible to erase information stored in by exposing it to ultraviolet light.
(A) RAM (B) ROM
(C) PROM (D) EPROM
32. Non-volatility is an important advantage of :
(A) CCD's (B) RAM
(C) Magnetic bubbles (D) PROM
33. Which is a fast main memory & slow peripheral memory handled by system software :
(A) Virtual memory (B) Core memory
(C) RAM (D) Dynamic memory

34. Which memory system is not used as a mass memory medium ?
 (A) Semiconductor memory (B) Magnetic tape
 (C) Magnetic disk (D) Magnetic drum
35. A storage device which is used to store data & information external to the main storage is known as :
 (A) Buffer (B) Backing sotrage
 (C) EPROM (D) Accumulator
36. For a memory system, the cycle time is :
 (A) Same as the access time (B) Longer than the access time ✓
 (C) Shorter than the access time (D) Submultiple of the access time
37. Which of the following memories must be refreshed many times per second ?
 (A) Static RAM (B) Dynamic RAM ✓
 (C) EPROM (D) ROM ✓
38. The minimum number of MOS transistors required to make a dynamic RAM cel is :
 (A) 1 (B) 2 ✓
 (C) 3 (D) 4
39. How many RAM chips of size (256 K × 1 bit) are required to build 1M Byte memory ?
 (A) 8 (B) 10 ✓
 (C) 24 (D) 32
40. A memory that holds microprograms is :
 (A) Core memory (B) ROM ✓
 (C) RAM (D) Control memory

UNIT-V

41. The data-bus width of a 204 × 8 bits is :
 (A) 8 (B) 10 ✓
 (C) 12 (D) 16 ✓
42. The register which contains the instruction to be executed is called :
 (A) Instruction register (B) Memory address register ✓
 (C) Index register (D) Memory data register ✓

BC.

43. The highest priority in 8085 microprocessor system is :
(A) RST 7.5 (B) RST 6.5
(C) INTR (D) TRAP
44. Number of machine cycle required for RET instruction in 8085 microprocessor is :
(A) 1 (B) 2
(C) 3 (D) 5
45. An instruction used to set the carry flag in a computer can be classified as :
(A) Data transfer (B) Process control
(C) Logical (D) Program control
46. The function of program counter (PC) holds :
(A) Temporary data (B) Address for memory
(C) Memory operand (D) Address for instruction
47. Any instruction should have atleast :
(A) 2 operands (B) 1 operand
(C) 3 operands (D) none of the above
48. The most relevant addressing mode to write position independent code is :
(A) direct mode (B) indirect mode
(C) relative mode (D) indexed mode
49. In which addressing mode the contents of a register specified in the instruction are first decremented, and then these contents are used as the effective address of the operands ?
(A) Index addressing (B) Auto increment
(C) Auto decrement (D) Indirect addressing
50. The addressing mode used in the instruction PUSH B is :
(A) Direct (B) Register
(C) Register indirect (D) Immediate

27
38
5

SECTION-B

UNIT-I

1. Differentiate between Analog and Digital Electronics with example.

OR

What do you understand by integrated circuit? Explain LSI and VLSI circuits in detail.

5
7 1/2
8
4.8

UNIT-II

2. What is instruction set? Explain instruction and execution cycle in detail.

OR

Explain shift instruction with example.

7 1/2

12 1/2

UNIT-III

3. Explain Indirect, Immediate and Relative addressing techniques.

OR

Discuss memory buffer register with example.

13

38

UNIT-IV

4. Differentiate between static and dynamic RAM with example.

OR

Differentiate between cache and virtual memory with example.

UNIT-V

5. Explain auxiliary storage devices in detail.

OR

Differentiate between microprocessor and microcontrollers.