



SAIVA BHANU KSHATRIYA COLLEGE
(Aruppukottai Nadargal Uravinmurai Pothu Abi Viruthi Trustuku Pathiyapattathu)

ARUPPUKOTTAI
DEPARTMENT OF BCA
QUESTION BANK

Name of the Department :	Computer Application(BCA)	UG / PG :	UG
Semester (UG - III & V; PG - III) :	III	Subject Code :	SCAJC32
Name of the Subject :	Digital Principles and Computer Organization		

Section A (Multiple Choice Questions)

Unit I: (Number System and Codes)

- Digital logic gates may have more than one input but generally have ____ digital output.
a) TWO b) FOUR c) ONE d) More than one
- _____ gate with two or more inputs. The output is high when any input is high.
a) AND b) OR c) NAND d) NOR
- What is the base of the decimal number system?
a) 2 b) 8 c) 16 d) 10
- Express the following decimal number 4 to gray code.
a) 0110 b) 1110 c) 1111 d) 1010
- A.0=?
a) 1 b) A c) 0 d) A or 1.

Unit II: (Combinational Logical Circuits)

- How many cells do a 5- variable K-map contains?
a) 32 b) 24 c) 22 d) 25
- Subtract the binary number 101-10 using 1's complement method.
a) 110 b) 011 c) 101 d) 001
- The addition of 2 binary digits is done by ____ circuit.
a) Half adder b) Full adder c) BCD adder d) Composite adder
- What are the symbols used to represent digits in the binary number system?
a) 0,1 b) 0,1,2 c) 0 through 8 d) 1,2
- Give the decimal value of binary 10010.
a) 18_{10} b) 9_{10} c) 6_{10} d) 20_{10}

Unit III: (Arithmetic Circuits)

- A full subtracter circuit requires _____.
a) three inputs and two outputs b) two inputs and two outputs
c) two inputs and three outputs d) three inputs and one output
- The output of an AND gate is LOW _____.
a) When any input is LOW b) when any input is HIGH
c) When all inputs are HIGH d) all the time
- Parallel format means that:
a) each digital signal has its own conductor. b) several digital signals are sent on each conductor. c) both binary and hexadecimal can be used. d) no clock is needed.
- A decoder converts _____.
a) coded information into noncoded form b) HIGHS to LOWs
c) LOWs to HIGHs d) noncoded information into coded form
- The output of an OR gate is LOW when _____.
a) all inputs are LOW b) any input is LOW c) any input is HIGH
d) all inputs are HIGH



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Unit IV: (Basic Computer Organization and Design)

16. What is the control unit's function in the CPU?
a) to transfer data to primary storage b) to store program instruction
c) to perform logic operations. d) to decode program instruction
17. Stack Operation Each Box Represents _____ Stack
a) 1 b) 3 c) 4 d) 7
18. The command that causes the interface to respond by transferring data from the bus into one of its registers _____.
a) data input command b) data output command
c) data control command d) Data status command.
19. _____ makes possible to execute instructions concurrently.
a) Pipelining b) Instruction queue
c) Data hazard d) Instruction hazard
20. A flip-flop has _____.
a) two stable states b) one stable state c) no stable states d) none of the above

Unit V: (Central Processing Units)

21. A multiplexer has _____.
a) Several inputs and one output b) one input and several outputs
c) one input and one output d) several inputs and several outputs
22. Which of the following is a part of the Central Processing Unit?
a) Arithmetic Logic Unit b) Printer c) Keyboard d) Mouse
23. The input unit of a computer
a) feeds data to the CPU or memory b) retrieves data from CPU
c) directs all other units d) All of the above
24. Which of the following registers is used to keep track of address of the memory location where the next instruction is located?
a) Program Counter b) Memory Data Register
c) Instruction Register d) Memory Address Register
25. To set a register or counter to the all-zero-state is
a) Reset b) Rerun c) Remote d) Release

Section B (7 mark Questions)

Unit I: (Number System and Codes)

26. How many nibbles are there in each of these: a) 1001
b) 11110000 c) 110011110000 d) 1111000011001001.
27. What are the hexadecimal numbers that follow each of these?
a) ABCD b) 7FSF c) BEEF
28. Explain the Gray code.
29. What is the advantage of Hamming code?
30. Explain odd and even parity code

Unit II: (Combinational Logical Circuits)

31. Define a Boolean function.
32. State and explain the laws of Union.
33. Differentiate between the basic gates and the universal gates



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34. Define a Boolean expression
35. Brief the following terms: Minterms, Maxterms, sum of Minterms and product of Maxterms

Unit III: (Arithmetic Circuits)

36. Explain the procedure of deriving a Boolean expression in its POS form
37. Explain truth table and Karnaugh Map
38. Explain Decoder and Encoder
39. Explain Exclusive OR gate.
40. Perform binary addition and subtraction using 2's complements:
110010+100110, 110111-1011

Unit IV: (Basic Computer Organization and Design)

41. Explain the stored Program Organization
42. Explain the basic computer instruction formats
43. Explain the Address Sequencing
44. Describe the Common Bus System
45. Describe the Symbolic Microinstructions

Unit V: (Central Processing Units)

46. Describe the Control Word
47. Explain Stack Organization
48. Explain the Instruction Formats
49. Explain the Types of Interrupt
50. Short Notes on: CISC and RISC

Section C (10 mark Questions)

Unit I: (Number System and Codes)

51. What are digital logic gates? Explain.
52. Describe Arithmetic circuits.

Unit II: (Combinational Logical Circuits)

53. State the various Boolean theorems
54. State and prove the De Morgan's theorems.

Unit III: (Arithmetic Circuits)

55. Explain the procedure of deriving a Boolean Expression in its SOP form
56. Explain the various types of adder

Unit IV: (Basic Computer Organization and Design)

57. Describe the computer Instruction Cycle.
58. Describe the Control Memory

Unit V: (Central Processing Units)

59. Describe the control unit of basic computer.
60. Explain any five addressing modes with examples.



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