Shivaji University , Kolhapur
Question Bank For Mar 2022 (Summer) Examination
Subject Code :79141 Subject Name : Computer Organization & Architecture

QUESTION NO	QUESTION TEXT	OPTION1	OPTION2	OPTION3	OPTION4	ANS
1	The second generation of computers were using _____.	transistors	vacuum tubes	ICs	None of these	A
2	The third generation of computers were using _____.	transistors	vacuum tubes	ICs	None of these	C
3	C & C++ languages were invented in _____ generation of computer.	second	third	fourth	fifth	C
4	ULSI technology was invented in _____ generation of computer.	second	third	fourth	fifth	D
5	Most of the today's processors consists of _____.	RISC	CISC	Both RISC & CISC	None of these	C
6	In RISC, complexity lies within _____.	compiler	microprogram	assembler	None of these	A
7	_____ is not a type of instruction	One Address Instruction	Two Address Instruction	Three Address Instruction	Four Address Instruction	D
8	In a single bus structure, IO device is assigned multiple set of addresses.	TRUE	FALSE			B
9	In an IO interface, SOUT holds _____ register.	serial	parallel	status	output	C
10	DMA transfers are performed by a control circuit associated with the IO device known as _____.	reigisters	counters	DMA controller	ICs	C
11	UART is an example of _____ port.	serial	parallel	both serial & parallel	None of these	A

12	In Serial port, bits are shifted out of the output shift register and sent out to the I/O device _____ .	two bits at a time	one bit at a time	all bits at once	None of these	B
13	Keyboards & printers are examples of _____ port.	serial	parallel	both serial & parallel	None of these	B
14	Idle signal exist in _____ port.	serial	parallel	both serial & parallel	None of these	B
15	1's complement of 0110 is _____.	1111	1011	1001	1110	C
16	Octal equivalent of Hexadecimal number ABCD is _____ .	3775	7557	125715	121557	C
17	Floating point numbers allow _____ .	larger range of values	small range of values	both large & small range of values	None of these	A
18	In fixed point format, digits to the right of decimal point represents _____.	integer	fraction	both integer & fraction	None of these	B
19	In signed binary numbers, 1 & 0 are used to denote plus and minus respectively	TRUE	FALSE			B
20	Floating point numbers can not be presented as binary.	TRUE	FALSE			B
21	_____ has memory unit.	RISC	CISC	DISC	None of these	B
22	In an IO interface, SIN holds _____ register	serial	parallel	status	output	C
23	In interface circuits, parallel port transfers data in the form of a number of bits normally _____.	8 or 16	16 or 32	32 or 64	64 or 128	A
24	Serial port is used to connect the processor to IO device that require transmission _____ at a time	1 bit	10 bits	100 bits	1000 bits	A
25	_____ is not example of standard IO device.	HARD DISC	PCI	SCSI	USB	A

26	Carry Look Ahead Adder is an example of fast adder.	TRUE	FALSE			A
27	_____ is an exmple of fast multiplication.	Carry-save subtraction of summands	Carry-save addition of summands	both of these	none of these	B
28	IEEE 754 floating point format contains _____ bit mantissa.	21	22	23	24	C
29	Unit that executes program instructions that communicate with other subsystems within the computer is known as _____.	processor	CPU	RAM	program counter	B
30	CPU keeps track of the address of memory location using	RAM	program counter	CPU	disc	B
31	MFC stands for _____.	Memory First Computer	Memory Function Computer	Memory Function Completed	None of these	C
32	In microprogammed control unit, control signals are generated by _____.	program & hardware	hardware	program only	None of these	C
33	Hardwired control unit is slower than microprogrammed control unit.	TRUE	FALSE			B
34	Instruction fetched by the fetch unit is deposited in _____.	intermediate storage buffer	main memory	RAM	external device	A
35	Cache memory solves memory access problem.	TRUE	FALSE			A

SUBJECT: COMPUTER ORGANIZATION & ARCHITECTURE

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QUESTION BANK

Unit 1: Computer Evolution & Performance

1. Explain Babbage's Difference Engine with example.
2. Explain Babbage's Analytical Engine with neat diagram.
3. Differentiate between mechanical computer & electronic computer.
4. Explain First generation of computers.
5. Draw & explain structure of an IAS Computer.
6. Explain following types of instructions:
   a. Data Transfer
   b. Data Processing
   c. Program Control
7. Explain Second generation of computers.
8. Explain Third generation of computers.
9. Explain fourth generation of computers.
10. Explain fifth generation of computers.
11. Explain structure of a pipelined processor.
12. Explain following types of instructions:
    a. Zero Address Instruction
    b. One Address Instruction
    c. Two Address Instruction
    d. Three Address Instruction
13. Differentiate between RISC & CISC.

Unit 2: Input & Output Organization

1. What is role of DATAIN & DATAOUT Instruction?
2. Draw & Explain IO interface for input device.
3. Explain basic idea of use of registers in an IO device.
4. What is DMA? Explain role of it.
5. Explain the role of DMA controller.
6. Differentiate between synchronous bus & asynchronous bus.
7. Explain interface circuits.
8. Explain working of parallel port in interface circuits.
9. Explain working of serial port in interface circuits.

10. What are different standard IO Interfaces?
11. What is SCSI? Explain in detail.

Unit 3: Arithmetic

1. What is the difference between signed & unsigned binary numbers? Give example.
2. Represent binary, signed integer, 1's complement & 2's complement forms of numbers ranging from +7 to -7.
3. How addition & subtraction of binary numbers is done using 2's complement?
4. Draw & explain an n-bit ripple carry adder.
5. Draw & explain carry Lookahead adder.
6. Explain algorithm for unsigned binary multiplication.
7. Explain Booth's algorithm for unsigned binary multiplication.
8. Explain technique of bit pair recording of multipliers for fast multiplication.
9. Explain technique of carry save addition of summands for fast multiplication.
10. Explain restoring division algorithm with example.
11. Explain non-restoring division algorithm with example.
12. What are floating point numbers? Explain IEEE 754 floating point number format.
13. What is normalization & biasing?
14. Convert following decimals to IEEE 754 Floating Point Format.
    1. 0.15625
    2. -2
    3. 0
    4. -0
    5. 3.1415927410
    6. -99.999
    7. 10.112
    8. 111.111
    9. -543.214

Unit 4: The Processing Unit

1. What are fundamental concepts in processing unit?
2. How execution of a complete instruction is performed?
3. What is role of MFCS?
4. Explain control sequence for execution of the instruction add (R3), R1.
5. What is single bus organization?
6. What is multiple bus organization?
7. What is Hardwired Control?

8. What is Microprogrammed Control?
9. Differentiate between Hardwired Control & Microprogrammed Control.
10. Explain control unit organization in Hardwired Control.
11. What is role of CW in Microprogrammed Control?
12. Explain significance if RISC & CISC in Hardwired Control & Microprogrammed Control.

Unit 5: Pipelining

1. What are basic concepts in pipelining?
2. Explain basic idea of instruction pipelining.
3. Explain 4 steps of instruction execution in pipelining.
4. What is role of a cache memory?
5. Draw & explain a 4-stage pipeline.
6. What is pipeline stall in case of cache miss?
7. Explain how performance of a pipeline is measured.
8. Explain basic structure of a linear pipeline processor.
9. What are data hazards in pipelining?
10. What is data dependency?
11. Explain how pipeline can be stalled by data dependency?
12. What is operand forwarding in data hazards?
13. Explain interruption of a pipeline caused by data dependency.
14. Explain instruction execution using operand forwarding.
15. How data hazards are handled in software?
16. What are side effects of data hazards in software?
17. What are instruction hazards?
18. Differentiate between conditional branch & unconditional branch.
19. What is branch prediction?

Unit 6: Computer Memory System

1. What are basic concepts in Computer Memory System?
2. What is memory access time & memory cycle time?
3. What is Semiconductor RAM?
4. Explain organization of bit cells in a memory chip.
5. What is role of CS in Semiconductor RAM?
6. Differentiate between Volatile memory & Non volatile memory.
7. Differentiate between Static RAM & Dynamic RAM.
8. Differentiate between ROM, EPROM & EEPROM.
9. What is a cache memory? Explain its use.

10. What is locality of reference?
11. What is mapping function?
12. Explain direct mapping.
13. Explain associative mapping.
14. Explain set associative mapping.
15. Explain following page replacement algorithm: LRU with example.