महाराष्ट्र शासन
शालेय शिक्षण व क्रीडा विभाग
राज्य शैक्षणिक संशोधन व प्रशिक्षण परिषद, महाराष्ट्र
७०८ सदाशिव पेठ, कुमठेकर मार्ग, पुणे ४११०३०
संपर्क क्रमांक (०२०) २४४७ ६९३८ E-mail: evaluationdept@maa.ac.in

---

Question Bank

Standard:- 12th

Subject:- Computer Science (D9) Paper II

March 2021

सूचना

१. फक्त विद्यार्थ्यांना प्रश्नप्रकारांचा सराव करून देण्यासाठीच

२. सदर प्रश्नसंचातील प्रश्न बोर्डाच्या प्रश्नपत्रिकेत येतीलच असे नाही याची नोंद घ्यावी.

QUESTION BANK

XII COMPUTER SCIENCE (D9) – PAPER II

Chapter 1: Introduction to microprocessor and Organization of 8085

Question no.	Question	Marking scheme
	MCQ 1 Mark	
1.	The register which stores the result of arithmetic and logic operations is called as …… i. Program counter **ii. Accumulator** iii. Stack pointer iv. D. Temporary register	**Correct Answer 1 mark**
2.	Program counter in 8085 Microprocessor ……. i. Counts number of programs ii. Counts number of times a subroutine is called iii. Counts the number of times loop are executed iv. **Points to the address of the next instruction to be executed**	**Correct Answer 1 mark**
3.	In Intel 8085 Microprocessor, ALE signal made high to……. **i. Enable AD0-AD7 bus to be used as lower order** **a. address bus** ii. Enable AD0-AD7 bus to be used as data bus (D0-D7) **iii.** To halt the processor iv. **D.** To reset the microprocessor	**Correct Answer 1 mark**
4.	……. is a non Vectored interrupt in 8085. i. RST 7.5 ii. RST 6.5 **iii. INTR** iv. TRAP	**Correct Answer 1 mark**
5.	**……..** is a lowest priority interrupt i. RST 5.5 ii. RST 6.5 iii. TRAP **iv. INTR**	**Correct Answer 1 mark**
6.	**.....** is the only non- maskable interrupt i. **TRAP** ii. RST 5.5 iii. RST 7.5 iv. RST 6.5	**Correct Answer 1 mark**
7.	**……..** is not valid register pair in 8085 microprocessor i. B C pair ii. H L pair iii. **Accumulator and flag register** iv. D E pair	**Correct Answer 1 mark**

8	Which of the following statement for INTEL 8085 is correct? i. Program counter specifies the address of the last instruction executed ii. Program counter specifies the number of instructions executed so far **iii. Program counter specifies the address of the next instruction to be executed** iv. Program counter specifies the address of instruction being executed	**Correct Answer 1 mark**
9.	Which of the following data transfer is not possible in 8085 microprocessor? i. Memory to Accumulator ii. Accumulator to memory iii. Accumulator to I/O device **iv. Memory to memory**	**Correct Answer 1 mark**
10.	If the status of S0 and S1 pin is low, the microprocessor performs the ……. **i.** Reset operation **ii. Halt operation** **iii.** Hold operation **iv.** Interrupt acknowledge	**Correct Answer 1 mark**
11	In 8085 microprocessor, the stack works on the principle of…… i. First in first out(FIFO) ii. Last in last out(LILO) **iii. Last in first out(LIFO)** iv. None	**Correct Answer 1 mark**
12	8085 requires …….Power supply **i. +5 V** ii. +15 V iii. -5 V iv. +10V	**Correct Answer 1 mark**
13.	The 8085 microprocessor can address …….. bytes of memory i. 1k ii. 4k iii. 128 k **iv. 64K**	**Correct Answer 1 mark**
14	In an Intel 8085 microprocessor, why is READY signal is used? i. To indicate that microprocessor is working and is ready for use **ii. To provide proper WAIT states when the microprocessor is communicating with a slow peripheral device.** **iii.** To slow down a fast peripheral device so as to communicate at the microprocessor's device. **iv.** None of the above.	**Correct Answer 1 mark**
15	ALU (Arithmetic and Logic Unit) of 8085 microprocessor consists of…….. **i.** Accumulator, temporary register, arithmetic and logic circuits	**Correct Answer 1 mark**

	ii. Accumulator, arithmetic, logic circuits and five flags **iii.** Accumulator, arithmetic and logic circuits **iv.** **Accumulator, temporary register, arithmetic, logic circuits and five flags**	
16	INTEL 8085 microprocessor was introduced in …… i. 1978 **ii.** **1976** iii. 1996 iv. 2003	**Correct Answer 1 mark**
17	The clock speed of 8085 microprocessor is …… i. 2MHz ii. 10MHz **iii.** **3 MHz** iv. 100Mhz	**Correct Answer 1 mark**
18	There are ……..general purpose registers in 8085 processor i. 3 ii. 7 iii. 10 **iv.** **6**	**Correct Answer 1 mark**
19	……..signal is used as the system clock for devices connected with the microprocessor. i. X1,X2 **ii.** **CLK OUT** iii. RESET OUT iv. ALE	**Correct Answer 1 mark**
20	In a flag register of 8085…….. number of bits are unused i. 8 ii. 5 iii. **3** iv. 6	**Correct Answer 1 mark**
21	The vector address of TRAP interrupt is …….. i. 002CH ii. 003CH iii. 0034H iv. **0024H**	**Correct Answer 1 mark**
22	CPU generally contains storage device called…… i. ALU ii. Timing control unit iii. Counter **iv.** **Register**	**Correct Answer 1 mark**
23	…….. register of 8085 is only used during arithmetic and logical operations and not for any other purpose **i.** **Temporary** ii. Acc iii. SP iv. B	**Correct Answer 1 mark**
24	…….. flag bit is reset, when flag register content is D4H. i. Sign ii. Zero **iii.** **Carry** iv. Auxiliary Carry	**Correct Answer 1 mark**
25	In 8085 microprocessor, serial data from external device is received	**Correct**

	on…….pin **i. SID** ii. SOD iii. HOLD iv. READY	**Answer 1 mark**
26	…… is a software interrupt i. TRAP **ii. RST 1** iii. RST 7.5 iv. INTR	**Correct Answer 1 mark**
27	…….. is a highest priority interrupt i. RST 5.5 ii. RST 6.5 iii. RST 7.5 **iv. TRAP**	**Correct Answer 1 mark**
28	…….. is a lowest priority interrupt i. RST 6.5 ii. TRAP **iii. INTR** **iv.** RST 5.5	**Correct Answer 1 mark**
29	The invalid register pair for 8085 microprocessor is……. i. BC ii. HL **iii. PC** iv. DE	**Correct Answer 1 mark**
30	The valid register pair for 8085 microprocessor is……. i. PC ii. SP iii. BE **iv. BC**	**Correct Answer 1 mark**
31	……. Pin of 8085 microprocessor is used to send data serially out i. HOLD ii. SID **iii. SOD** iv. CLKOUT	**Correct Answer 1 mark**
32	There are …….. flags in 8085 i. 10 **ii. 5** iii. 8 iv. 3	**Correct Answer 1 mark**
3 Marks question		
1	List any three primary functions of CPU of Microcomputer	**1 mark For each function 1X3=3**
2	Write any six features of 8085 Microprocessor	**Any six featutes ½ X6=3**
3	Draw functional pin diagram of 8085 microprocessor	Diag. 2 Lables 1
4	Write the purpose of following pins of 8085 microprocessor	Function of

	a) READY b) INTR c) X1 , X2	each pin 1X3=3
5	Differentiate between I/O mapped I/O and memory mapped I/O.	Any three points 1X3=3
6	What is an interrupt? Explain in detail.	Defination. -1Mark Expla nation-2mark
7	Explain organization of ALU with the help of simple block diagram	Diag -1Mark Explanation -2Mark
8	Write the function of following registers in 8085 a) Accumulator b) Instruction Register c) Stack pointer	Fun of each register- 1Mark 1X3=3
9	Write the function of following pins of 8085 microprocessor a) CLKOUT b) SID c) ALE	Function of each pin -1 Mark 1X3=3
10	Draw and explain programming model of 8085 Microprocessor.	Diagram – 1mark Explanation-2mark
11	List all the hardware interrupts according to their priority provided by 8085. Also write their vector addresses.	List -1mark Priority -1mark Vector addr-1mark
12	Differentiate between hardware and software interrupt.	Any three points – 1mark each 1 X3=3
13	Define the following terms with suitable diagram a) Instruction cycle b)Machine cycle c) T state	Each defination -1Mark, 1X3=3
14	Write short note on subroutine in 8085 microprocessor	Diagram -1mark Explanation -2mark
15	Explain multiplex address/ data (AD0-AD7) bus in 8085 Microprocessor	Explanation – 3 mark
16	Differentiate between maskable and non-maskable interrupts	Any three points-1mark each 1X3=3
17	Draw labeled block diagram of Generic Microprocessor.	Diagram -2mark Labels -1mark
18	Describe the functions of following pins of 8085 microprocessor a) RESETOUT b) HLDA c) S0, S1	Fun of each pin -1 mark 1X3=3
19	Explain the function of ALU with simple block diagram	Diagram -

		1mark Explanation – -2 mark
20	What are flags in 8085? Enlist the different flags provided by 8085 microprocessor.Also draw flag register diagram	Define Flags – 1mark List – 1mark Diagram – -1 mark
21	Explain the function of following units in microprocessor 8085. a) ALU b) Program Counter c) Instruction decoder	Fun of each pin - 1 mark each 1X3=3
22	Write a short note on flag register of 8085 microprocessor	Flag register diagram – 1 mark Explanation -2mark
23	Explain the zero and parity flags of 8085 with suitable diagram	Zero flag -1½ Parity flag 1 ½
24	What is Microprocessor? List its functions.	Microprocessor -1Mark , list any 4 functions -2Mark
25	What is multiplexed address and data bus in 8085? give its advantages.	Explanation of AD0-AD7 - 2Mark Advantages- 1mark
26	What is stack in 8085? List the instructions required for stack operations.	Stack concept- 2Mark Instructions- -1 Mark
27	Explain the following flags of 8085 microprocessor a) Carry b) Sign c) Zero	Each flag- 1 Mark
28	In case of Microprocessor architecture, explain the following terms in brief. a) Address Bus b) Data Bus c) Control Bus	Expla of each bus – 1 mark 1X3=3
29	What is a Subroutine in 8085? Give its related instructions in 8085	Subroutine - 2mark Instructions - 1mark
30	Explain ALU of Generic Microprocessor.	Expl of ALU – 2 mark Diagram -1mark
4 Marks Question		
1	Write a short note on evolutions of microprocessor giving example of each generation	Evolutions – 4 marks

2	Write any four functions of CPU of Microcomputer system	Each function – 1mark 1X4=4
3	Draw a block diagram of Microcomputer system? Explain function of each block in brief.	Explanation ---2Mark Diagram – 2mark
4	Draw a neat labeled block diagram of Generic microprocessor. Explain its functional units.	Diagram--2 mark Explanation - 2 mark
5	The flag register of 8085 microprocessor contains data 45H. interpret its meaning	Flag reg. diagram - 1 mark Interpretation- 3 marks
6	Write a short note on flag register of 8085 microprocessor .Explain the significance flag bits with one example	Explanation of flags -4 marks
7	What are flags? Enlist the flags provided by 8085 Microprocessor .Explain when they are set or reset.	Flags – 1 marks, set reset condition- 3 mark
8	Draw a labeled functional block diagram of microprocessor 8085.	8085 diagram- 4 marks
9	Explain the function of following units in microprocessor 8085 a) Serial I/O control unit c) Stack Pointer b) Program counter d) Temporary register	Function of each unit – 1 mark 1X 4=4
10	Draw the bit pattern of flag register and explain the significance of each flag bit with one example	Bit pattern – 1 mark Significance – 3 marks
11	What hardware interrupts? Explain vectored and non vectored interrupts of 8085 microprocessor.	Hardware interrupts -1mark Vectored and non vectored - 3mark 1+3=4
12	What is a interrupts? Differentiate between hardware and software interrupts.	Defination interrupt- ---1mark Difference hardware and software interrupts any 3 points --3 marks 1+3=4

13	Differentiate between maskable and Non-maskable interrupts	Any four points – 4 marks
1	What are vectored interrupt? What are maskable and Non maskable interrupts? State all hardware interrupts of 8085 microprocessor with their priorities and vector addresses	Vectored interrupt-1 mark Maskable and non maskable - 1mark Priority and vector address-2mark
15	What are I/O mapped I/O and Memory mapped I/O schemes? Which one 8085 uses.	I/o mapped I/o and Memory mapped I/O-3 mark Used in 8085-1 mark
16.	The flag register of 8085 microprocessor contains data 3CH. interpret its meaning	Flag register. diag- 1 mark Interpretation-3 marks

CHAPTER 2 – INSTRUCTION SET AND PROGRAMMING OF 8085

MCQ (1 Mark Questions)		
Q. No	**Question**	**Marking Scheme**
1.	The _____ flag bit is reset, when flag register content is 95 H. i. P ii. **Z** iii. Ac iv. CY	1Mark
2.	_____ instruction belongs to data transfer group. **i. LHLD address** **ii.** CMA **iii.** JMP address **iv.** ANI data	1Mark
3.	The instruction _____ will affect the zero flag without changing the contents of the accumulator. i. MVI A,00 ii. SUB A iii. XRA A iv. **CMP A**	1Mark
4.	_____ instruction rotates contents of accumulator right through carry by 1 bit. i. RAC ii. RAL iii. **RAR** iv. RRC	1Mark
5.	Instruction XCHG belongs to _____ addressing mode. i. **Register** ii. Register indirect iii. Direct iv. Immediate	1Mark
6.	Addressing mode of ADD M is _____. i. Direct ii. **Register Indirect** iii. Implied iv. Immediate	1Mark
7.	_____ instruction is three byte instruction of 8085. i. CMA ii. ADI iii. XCHG iv. **LDA**	1Mark

8.	_____ instruction is used for 16 bit addition. i. ADD ii. ADI iii. ADC iv. **DAD**	1Mark
9.	The instruction MVI r, Data $_8$ is _____ byte instruction. i. **Two** ii. One iii. Three iv. Four	1Mark
10.	During PUSH instruction of 8085 the stack pointer is _____. i. Incremented by 2 ii. **Decremented by 2** iii. Incremented by 1 iv. Decremented by 1	1Mark
11.	The contents of HL pair are CFFF H. After execution of instruction INX H, the contents will be _____. i. DFFF ii. CF00 iii. CFF0 iv. **D000**	1Mark
12.	When _____ instruction is executed, no operation is performed; only this instruction is fetched and decoded. i. HLT ii. RST 1 iii. **NOP** iv. RIM	1Mark
13.	_____ flag is affected by instruction RRC of 8085. i. **Carry** ii. Zero iii. Parity iv. all	1Mark
14.	The contents of HL pair are 2A00 H. After execution of instruction DCX H, the contents will be _____. i. 2900 ii. **29FF** iii. 1A00 iv. 1AFF	1Mark
15.	Invalid register pair for 8085 microprocessor is _____. i. **SP** ii. BC iii. HL iv. DE	1Mark

	3 Mark Questions	
Q. No	**Question**	**Marking Scheme**
2.	The accumulator of 8085 microprocessor contains data F2H. What will be contents of accumulator after execution of each of the following instruction independently? a) XRI 3BH b) RLC c) SUI AEH	1 Mark for each subpoint a) C9H b) E5H c) 44H
3.	The accumulator of 8085 microprocessor contains data 3CH. What will be the effect on its content if following instructions are executed independently? a) ANI 05H b) RRC c) MOV B, A	1 Mark for each subpoint a) 04H b) 1EH c) 3CH
4.	Explain the register and direct addressing modes of 8085 microprocessor with example of each.	1 mark explanation and ½ mark example for each mode
5.	Explain the following instructions with suitable example a)DAA b) LDAX rp c) SHLD address	Correct explanation with example 1 mark for each instruction
6.	Explain the following instructions with suitable example. a)RAR b) ADC r c) CPI data	Correct explanation with example 1 mark for each instruction
7.	Explain the following instructions of 8085 microprocessor with suitable example a)SPHL b) CMA c) PUSH PSW	Correct explanation with example 1 mark for each instruction
8.	Write appropriate instructions for each of the following tasks: a) Store the contents of accumulator to memory location pointed by BC pair.- b) Decrement contents of HL pair by 1. – c) Set carry flag to 1. -	1 Mark for each subpoint a) STAX B b) DCX H c) STC
	4 Mark Questions	
Q. No	**Question**	**Marking Scheme**
1.	Explain the following instructions with suitable example. 1. DAA 2. XTHL	
2.	Explain following Rotate group of instructions 1. RRC 2. RAR 3. RLC 4. RAL	2 Marks each

3.	What are the groups in which instructions in 8085 are classified? Give one example of each group.	Correct explanation with example. Any 4 groups 1 mark for each group
4.	What do you understand by register indirect and implicit addressing modes? Explain with suitable example. List down instructions which make accumulator content clear.	Correct explanation with example. 1 ½ mark for each mode 1 mark for any two correct instructions.
5.	What are branching instructions? Explain the jumping instructions with jump conditions.	Correct explanation with example. Any 4 instructions 1 mark for each instruction
6.	The accumulator of 8085 microprocessor contains data AAH and register C contents 55H. What will be the contents of accumulator if following instructions are executed independently? a) CMP C b) ANA C c) ORA C d) SUB C	1 Mark for each subpoint a) AAH b) 00H c) FFH d) 55H

5 Mark Questions

Q. No	Question	Marking Scheme
1.	Write an assembly language program to divide two 8-bit hex numbers where dividend is stored in memory location D000H and divisor is stored in memory location D001. Store the quotient and the reminder in consecutive memory locations.	Correct Program 4 marks and Comments 1 mark
2.	Write an assembly language program to count number of even data bytes occurring in a block starting from the memory location 7501H to 75FFH. Store result at memory location 7600H.	Correct Program 4 marks and Comments 1 mark
3.	Write an assembly language program to count the number of times the data AD H is found in a block starting from C000 to C00FH. Store the result at memory location D000H.	Correct Program 4 marks and Comments 1 mark
4.	Write an assembly language program to find out 2's compliment of five numbers stored from memory location F000H onwards. Store the result from memory address D000H.	Correct Program 4 marks and Comments 1 mark
5.	Write an assembly language program to transfer the block of data stored from memory location D100H to D1FFH in reverse order in new memory location starting at D200H.	Correct Program 4 marks and Comments 1 mark
6.	Write an assembly language program to divide all the	Correct Program 4 marks

	numbers of a block by 2. Block is stored from 4000 to 4009H. Store result at the same place.	and Comments 1 mark
7.	Write an assembly language program to find largest number from a block of data having starting address D001 H. Length of block is stored in location D000H. Store the result at D060H.	Correct Program 4 marks and Comments 1 mark
8.	Block of data is stored from memory location C050 H to C05FH. Write an assembly language program to copy entire block of data to a new location starting from C070H.	Correct Program 4 marks and Comments 1 mark
9.	A hex number is stored at location 3000H. Write an assembly language program to interchange its digits. The new number is to be stored at 3001. Add original number with new number and store the result at location 3010H.	Correct Program 4 marks and Comments 1 mark
10.	Write a sub routine to fill the memory locations 2000H to 2009H with data BBH and 44H alternatively.	Correct Program 4 marks and Comments 1 mark
11.	Write an assembly language program to separate the nibbles of a number stored at memory location 2000H. Multiply the separated nibbles and store the result at memory location 3000H.	Correct Program 4 marks and Comments 1 mark
12.	Write assembly language program to store data BCH in 20 contiguous memory locations starting from 8081H.	Correct Program 4 marks and Comments 1 mark
13.	Write assembly language program to get decimal sum of series of numbers starts from C001H onwards. Block length is stored in C000H. Store result in C050 and carry in C051H.	Correct Program 4 marks and Comments 1 mark
14.	Write assembly language program to subtract the number stored in memory location 3601H from the number stored in 3600H. Store the positive result at location 3602H.	Correct Program 4 marks and Comments 1 mark
15.	Write assembly language program to add two 8 bit BCD numbers stored at memory locations 5000H and 5001H. Store the result at memory location 5002H onwards starting with LSB.	Correct Program 4 marks and Comments 1 mark

CHAPTER 3 - Introduction to INTEL X-86 Family – 4 mark

MCQ		
1	Pentium processor has ….. bit data bus and ……bit address bus i. **64, 32** ii. 32, 64 iii. 32, 32 iv. 16, 32	Correct answer - 1mark
2	8086 is a ……. bit processor i. 32 ii.8 **iii.16** **iv.**64	Correct answer - 1mark
3	The maximum physical memory can be addressed by Pentium is …… i. 16Gbytes ii. 64 kbytes **iii. 4 Gbyte** **iv.** 1Mbytes	Correct answer - 1mark
4	Which One of the following is not feature of Pentium processor ……. i. Can address 4G bytes of memory ii. Branch prediction **iii. 32 bit data path** iv. On chip caches	Correct answer - 1mark
5	……. Processor uses non multiplex address bus i. 8085 ii. 8086 **iii. 80386** **iv.** 80286	Correct answer - 1mark
6	80386 is a ……. i. **32 bit Microprocessor** ii. 16 bit Microprocessor iii. 64 bit Microprocessor iv. 8 bit Microprocessor	Correct answer - 1mark
7	…….. Microprocessor has built in math coprocessor i. 8086 ii. 8088 iii. 80386 iv. **80486**	Correct answer - 1mark
8	The size of Accumulator in 32 bit Microprocessor is …….. i. 16 bit ii. **32 bit** iii. 8 bit iv. 64 bit	Correct answer - 1mark
	4 Mark	

1	List the advanced microprocessors of INTEL X-86 family and mention three attributes of any one them.	List – 1 mark Three attribute- 3 Mark
2	Explain the main features of a Pentium Processor	Explanation of each feature- 1mark 1X4 =4 marks
3	Explain the advantage of the Pentium processor with respect to the following features a) Dual pipelining c) on chip caches b) Branch prediction d)64 bit data path	1 mark each 1 X 4 =4
4	Explain programming model for 16 bit version of X-86 family with suitable diagram	Diagram - 1 mark Explanation- 3 mark
5	Compare any four attributes of 80286 and Pentium microprocessor	1 mark each point 1X4 =4
6	State four differentiating features among any two X-86 family Microprocessor	1 mark each 1 x4=4
7	Draw a neat labeled diagram of flag register of X-86 family	Labeled Diagram of X86 flag register - 4 Marks
8	Draw neat labeled diagram of flag register of 8086 family	Labeled diag - 4 marks
9	Explain programming model for 32 bit version of X-86 family with suitable diagram.	Diagram - 1 mark Explanation- 3 mark
10	Draw programming models of X-86 16 bit and X-86 32 bit Microprocessor	16 bit Diagram -2mark 32 bit model diagram – 2 mark
11	Compare any four attributes of 80286 and 80486	Each attribute - 1 mark - 1X4=4
12	Compare any four attributes of 80386 and Pentium processor	Each attribute - 1 mark - 1X4=4
13	Compare any four attributes of 80486 and Pentium processor	Each attribute - 1 mark - 1X4=4
14	Compare any four attributes of 8086 microprocessor with Pentium processor	Each attribute - 1 mark - 1 X4 =4
15	Write important features of any two microprocessors in X-86 family in brief	Any two processor features- 2 mark each 2+2=4

Chapter 4: Introduction to Microcontroller

MCQ 1 MARK		
Q. No.	**Question**	**Marking scheme**
		-
1	8051 microcontroller IC have _____ number of 8 bit I/O ports. i) 1 ii) 2 iii) **4** iv) 8	Correct answer 1 mark
2	The 8051 microcontroller has instruction set of _____instructions. i) 101 ii) 110 iii) 99 iv) **111**	correct answer 1 mark
3	_____ is a microcontroller chip. i) Intel 8085 ii) Intel 8086 iii) **Intel 8052** iv) Intel 8008	Correct answer 1 mark
4	8051 is a ____ bit Microcontroller. i) **8** ii) 4 iii) 16 iv) 32	Correct answer 1 mark
5	_____ is a Microcontroller. i) 8086 ii) **8051** iii) 8088 iv) 80286	Correct answer 1 mark
6	Internal data memory of a Microcontroller is _____. i) **128 bytes** ii) 128 k bytes iii) 256 bytes iv) 4 k bytes	Correct answer 1 mark
7	_____ is a characteristic feature of 8051 Microcontroller. i) **Four 8 bit I/O ports** ii) Two 8 bit I/O ports iii) 4 KB RAM iv) Four external Interrupts.	Correct answer 1 mark
8	Which of the following is not a part of an 8051 single chip microcontroller? i) A 4 kbyte ROM ii) **Dual serial port** iii) 128 byte RAM	Correct answer 1 mark

	iv) Four 8 bit parallel I/O ports	
9	8051 Microcontroller has clock up to _____. i) **12 MHz** ii) 4 MHz iii) 9 MHz iv) 6 MHz	Correct answer 1 mark
10	The 8051 is a _____ generation microcontroller. i) First ii) **Second** iii) Third iv) Fourth	Correct answer 1 mark
11	The 8051 has ALU of _____ capacity. i) 64 bit i ii) 32 bit iii) 16 bit iv) **8 bit**	Correct answer 1 mark
12	Internal program memory of 8052 microcontroller is _____. i) 4 byte ii) 16 k byte iii) **8 k byte** i iv) 64 k byte	Correct answer 1 mark
13	_____ is not a microcontroller. i) 8052 ii) **Pentium** iii) 8031 iv) 8048	Correct answer 1 mark
14	8051 microcontroller have _____ external interrupts. i) 1 ii) **2** iii) 3 iv) 4	Correct answer 1 mark
	3 Marks Question	
1	Write any two features of following Microcontrollers: 1. 8049 2. 8052 3. 8031	1Mark each: ½ x 2
2	State any six features of 8051 Microcontroller	½ x 6 = 3 Mark
3	Explain memory register map of 8051 microcontroller with suitable diagram.	3 Mark
4	State three expanded features of 8052 over 8051 Microcontroller.	1 Mark x 3
Q. No.	**Question**	**Marking scheme**
5	What is microcontroller? Write any two of its advantages over microprocessor.	1 Mark 2 Mark
6	Compare Microcontrollers 8051 and 8052 .	1 Mark x 3
7	Write the RAM and ROM size of 8048, 8049 and 8050	RAM ½

	microcontrollers.	Mark x 3 ROM ½ Mark x 3
8	Differentiate between microcontroller and a microprocessor.	1 Mark x 3
9	State any six applications of a Microcontroller.	½ x 6 = 3 Mark
4 Marks Question		
1	Write any two features of following Microcontrollers: i) 8048 ii) 8052 iii) 8031 iv) 8050	1Mark x 4
2	Explain with diagram, memory register map of 8051 Microcontroller.	Diagram 2 Mark Explanation 2 Mark
3	Give any eight important features of 8051 Microcontroller.	½ Mark x 8
4	State and explain major features of 8051 Microcontroller.	1Mark x 4
5	Explain in detail how 8051 microcontroller addresses two separate memory spaces.	2Mark x 2
6	Discuss the microcontrollers in 8051 family.	Main members of 8051 family 2Mark x 2
7	What is microcontroller? State any three advanced features of 8052 Microcontroller over 8051 microcontroller.	1 Mark 1 Mark x 3

Chapter 5: Networking Technology

MCQ - 1 MARK		
Q. No.	**Question**	**Marking scheme**
1	In _____ Topology all devices are connected to a central hub. i) Ring ii) **Star** iii) Bus iv) None of the above	Correct answer 1 mark
2	The mobile phone uses _____transmission technology. i) Radio ii) **Microwave** iii) Infrared iv) Satellite	Correct answer 1 mark
3	_____ cable uses light signals to transmit data. i) **Fiber optic** ii) Coaxial iii) UTP iv) STP	Correct answer 1 mark
4	If length of the cable is very long then _____ is used in between to bring the weak signal to its original level. i) MODEM ii) HUB iii) **REPEATER** iv) ROUTER	Correct answer 1 mark
5	_____ is an example of wireless media. i) Optic fiber ii) **Microwave** iii) UTP i iv) STP	correct answer 1 mark
6	The installation cost of _____ cable is maximum. i) STP ii) UTP iii) **Fiber optic** iv) Co-axial	Correct answer 1 mark
7	_____cable type is ideal for connecting between two buildings. i) UTP ii) STP	Correct answer 1 mark

	iii) **Co axial** iv) Flat	
8	If the network is to be executed beyond predefined cable limit _____ is used. i) Modem ii) **Repeater** iii) Hub iv) router	Correct answer 1 mark
9	The process of modulation and demodulation is done by a device namely _____. i) Hub ii) Repeater iii) Router iv) **Modem**	Correct answer 1 mark
10	All the systems on a network must follow a set of common rules called as _____. i) Interface ii) **Protocol** iii) Conventions iv) None of the above	Correct answer 1 mark
11	_____cable has highest sensitivity to EMI. i) STP ii) Fiber optic iii) **UTP** iv) Co axial	Correct answer 1 mark
12	BUS topologies are suitable for networks that uses _____ access methods. i) **Contention based** ii) token passing iii) polling iv) None of these	Correct answer 1 mark
13	_____ does not regenerate the computer signal in networks. i) **Passive hub** ii) Active hub iii) Repeater iv) All the three	Correct answer 1 mark
14	_____cable type supports the greatest cable length for computer networking. i) UTP ii) STP iii) **Thick net co axial** iv) Thin net co axial	Correct answer 1 mark
15	_____cable has highest bandwidth. i) **Fiber Optic** ii) UTP iii) STP i iv) co axial	Correct answer 1 mark

16	EMI is minimum in case of _____ cable. i) **Fiber Optic** ii) UTP iii) STP iv) co axial	Correct answer 1 mark
	3 Mark questions	
1	Explain HUB and Repeater in detail.	1 ½ mark each
2	Explain Fiber optic cable with a suitable diagram.	Diagram 1 Mark Explanation 2 Mark
3	Explain the following attributes of transmission medium : i) Bandwidth ii) Band usage iii) Attenuation.	1 Mark x 3
4	Define Bus, Ring, Star topologies. Draw simple diagrams for each.	1 Mark each : Def. ½ Mark Diagram ½ Mark
5	Explain Ring topology with diagram. State its two advantages.	Explanation 1 & ½ Diagram ½ Mark Advantages ½ x 2Mark
6	Write a short note on STP cable with suitable diagram and give its any two characteristics.	Diagram 1Mark Explanation 1 Mark Charac. ½ x 2 Mark
7	What is modem? Explain working of MODEM and specify types of MODEMS.	1 Mark 2 Mark
8	Explain UTP cable with its any four characteristics.	UTP cable 1Mark Charac. ½ x 4 Mark
9	Explain co axial cable with suitable diagram and give its any two advantages.	Diagram 1Mark Explanation 1 Mark Advant. ½ x 2 Mark
10	Give at least two advantages and one disadvantage of wireless media over cable media.	Advantages 2 Mark Disadv. 1Mark
11	List various network access methods and explain any one of them.	Methods ½ x 3 Explanation 1 1/2
12	Explain the following attributes of transmission medium : i) Installation requirement ii) EMI iii) Attenuation.	1 Marks each
13	Enlist three types of hubs. Write its functions in one sentence.	½ mark each ½ marks each
14	Explain function of Router in the network. List different types of routers.	2 marks 1 marks
15	What is meant by protocol? Explain concept of TCP /IP protocol.	1 mark 2 marks
16	Distinguish between STP and UTP cables. (Any three points)	1 mark x 3

17	Differentiate between LAN and WAN. (Any three points)	1 mark x3
18	Enlist six characteristics of transmission media.	½ x 6 = 3 mark
19	Explain STAR topology with diagram. Also give two advantages and disadvantages.	Diagram 1 mark Advantages ½ x 2 Mark Disadvantages ½ x 2 Mark
20	Compare any three characteristics of Twisted pair cable with coaxial cable.	1Mark x 3
21	What is wireless media? Write any two advantages of wireless media.	1Mark 2 Mark
22	Write a short note on Modem.	3 Mark
4 Marks question		
1	Explain any four characteristics of transmission media.	1Mark x 4
2	Explain STAR and RING Topologies with suitable diagram.	For each topology: 2 Mark Diagram 1 Mark Explanation 1 Mark
3	Explain following network devices with diagram i) Router ii) Repeater	For each device 2Mark Diagram 1 Mark Explanation 1 Mark
4	Explain in brief the following access method: i) Contention ii) Token passing	 2 Mark 2 Mark
5	Explain Token passing and Polling access method.	2 Mark for each method
6	Differentiate between co-axial cable and fiber optic cable.	1Mark x 4
7	What is transmission media? Give six characteristics of transmission media.	1 Mark ½ Mark x 6
8	What is Ethernet? Write a short note on Ethernet.	1 Mark 3 Mark
9	Compare any four attributes of Coaxial thicknet cable with UTP cable.	1 Mark x 4
10	Explain the following attributes of transmission medium : i) Bandwidth ii) EMI iii) Band usage iv) Attenuation.	1 Mark x 4
11	Compare any four attributes of UTP and optical fiber cable.	1 Mark x 4
12	Write any two advantages and two disadvantages of optical fiber cable.	Advantages 2 Mark Disadvantages 2

		Mark
13	What is network topology? Explain in brief two basic categories of topology.	1 Mark 1 ½ Mark each