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| Bon Secours College for Women Nationally Accredited with “A” Grade by NAAC (Affiliated to Bharathidasan University, Trichy-24) Recognized by UGC Under Section 2(f) & 12 (B)    Vilar Bypass, Thanjavur-613 006. |

**DEPARTMENT OF PHYSICS**

**MICROPROCESSOR AND COMMUNICATION ELECTRONICS**

**2 Marks**

**UNIT 1**

1. What is microcomputer?

2. Give any two opcode for data transfer operations.

3. Define microprocessor architecture.

4. What do you mean by stack?

5. What is the purpose of stack?

6. Write the mnemonics atleast for two logic operations.

7. What is meant by address multiplexing?

8. What is the use of Io/m signal?

9. What is stack pointer?

10. What do you mean by implicit addressing?

**UNIT 2**

1. Write a subroutine program to subtract two packed BCD numbers.

2. What is time delay?  
3. Write a program to place OS in register B.  
4. What is the function of DAA register?  
5. Write the instructions to generate on time delay using a loop within loop technique.  
6. Define DAA.  
7. Write an assembly program for performing 2’s compliment of given byte.  
8. How can you add two 16 bit data in 8085 microprocessor?

1. Write an assembly program for performing 1’s compliment of given 8 bit number.
2. What is the role of XCHG instruction?

**UNIT 3**

1. What is meant by I/O mapped I/O?
2. What is interrupt?
3. What is DMA?
4. What is meant by cycle stealing in DMA controller?
5. What do you mean by peripheral mapped I/O?
6. What is meant by direct memory access?
7. What is PIC?
8. What is DMA data transfer scheme?
9. Give various modes of 8253 timer.
10. What do you mean by fully nested mode?

**UNIT 4**

1. What do you mean by point to point link?
2. Distinguish between FM and phase modulation.
3. What are the differences between phase and frequency modulation?
4. Define coherent system.
5. What are the disadvantages of frequency modulation?
6. State sampling theorem.
7. Compare amplitude and frequency modulation.
8. Define modulation index of amplitude modulation.
9. Explain necessity of modulation in communication system.

**UNIT 5**

1. Specify the satellite communication with its critical parameters.
2. What is a geostationary orbit? Why it is preferred?
3. Define power gain of an antenna.
4. What are the advantages of communication satellites?
5. What is meant by satellite switched TDMA?
6. What is ground station?
7. What is uplink and downlink?
8. Define the term elementary doublet.
9. What is meant by frequency division multiplexing?

**5 Marks**

1. Explain various branching operations with examples.
2. Explain different types of addressing modes with examples.
3. Write an assembly program for performing multiplication and division of two 8 bit numbers.
4. Write an assembly program to find the square root of a given 8 bit number.
5. Explain the working of DMA controller with necessary block diagram.
6. Discuss in detail the various modes of PPI with its control word format.
7. Define amplitude modulation. Discuss briefly about the frequency spectrum of the AM wave.
8. Explain about the principle and pulse code modulation. How it is generated?
9. Write a note on geostationary orbit.
10. Discuss briefly SS/TDMA concept with necessary diagram.
11. Explain the branch instructions of 8085 microprocessor with examples.
12. Define addressing modes and explain its different types in 8085.
13. Write assembly language program to sort the given set of numbers in ascending order.
14. Write an assembly language program for addition and subtraction of given 8 bit number.
15. Explain the block diagram of DMA controller. Discuss its execution in master and slave mode.
16. Explain the block diagram of programmable interrupt controller. Discuss its interrupt operation.
17. Explain the various requirements on semiconductor laser.
18. Describe the principles of frequency and phase modulation.
19. Explain the effects of ground on antenna.
20. Draw and explain the block diagram of network control station interconnecting telephone traffic between remote stations.
21. Discuss the functions of the data registers present in 8085 microprocessor.
22. What are the essential elements of a CPU? Discuss the functions of each element.
23. Write assembly language program for evaluating the expression P\*2+Q/4. Assume P and Q is bytes. Draw the flow chart also.
24. Write assembly language program for arranging the numbers in descending order.
25. Draw the schematic diagram of programmable interval timer 8253 and explain its various modes of operation.
26. Draw the block diagram of8255A and explain its working principle.
27. Discuss about the frequency spectrum of FM wave.
28. Write short notes on NRZ codes and RZ codes.
29. Explain the block diagram of network control station.
30. What is stack? What is the function of stack pointer? Discuss PUSH and POP operation.
31. What are the various status flags provided in 8085? Discuss its roles.
32. Write an assembly language program for finding the biggest number from a list.
33. Write an assembly language program to divide 489 BH by 1AH.
34. Discuss how I/O devices are interfaced with I/O ports.
35. Describe pulse position modulation.
36. Discuss about satellite orbit and position.
37. Explain the pin configuration of Intel 8085.
38. Write an assembly language program for finding the smallest number from a list.
39. Explain memory mapped I/O scheme and I/O mapped I/O scheme.
40. Discuss the maskable interrupts RST 7.5, 6.5 and 5.5.
41. Explain time division multiplexing with circuit diagram.
42. Discuss about coherent binary PSK system.
43. Discuss about antenna look angles.
44. Explain how the UP link is designed for satellite communication system.

**10 Marks**

1. Explain 8086 architecture with neat diagram.
2. Write assembly language program to arrange the given set of numbers in descending order.
3. Explain the block diagram of programmable interrupt controller.
4. What is pulse width modulation? Explain the generation and demodulation of PUM with neat diagram.
5. Explain block diagram of network control station.
6. Write an assembly language program for finding the biggest and smallest number from a list.
7. Discuss the block diagram of programmable peripheral interface. Discuss its various modes.
8. Describe the generation and demodulation of pulse width with necessary circuit diagram.
9. Explain the principle and working of TDMA and give its advantages and disadvantages.
10. explain branch group instruction and logical group instruction in 8085 microprocessor.
11. Explain BCD addition with an example.
12. Explain operation of programmable interrupt controller 8259 with the aid of diagram.
13. Draw and explain optical distribution network used in telephone employing TDMA technology.
14. Explain the theory of phase modulation.
15. Explain a) data transfer group b) logical group c) branch group with examples.
16. Write assembly language program for generating continuous square wave with a period of 500microsecs and clock period is 325 nanosecs.
17. Explain intel 8253 and also describe data bus buffer, read/write logic and control word register of intel 8253.
18. Explain in detail the satellite transmission theory. Also discuss G/T ratio for each station.
19. Describe the various registers of intel 8085 with block diagram.
20. Write assembly language program for time delay using a) one register b) register pair c) loop within loop technique.
21. Explain the architecture of 8255A and also discuss its operating modes.
22. Describe the internal layout of a satellite.