Electronics Paper VII
BET 401: Digital Communication
Question Bank

Q1). Answer in one sentence   **[1X2 Marks=2 Marks]**

1. Which is usually stores all user-related data that is also relevant to GSM mobile systems?

2. In satellite communication, Why does the orbit take the shape of an ellipse or circle?

3. The frequency of which carrier signal is based on the information in the digital signal?

4. By what name is each area covered by satellite radio beam?

5. Write the sequence of operations in the PCM.

6. What is handoff in cellular system?

7. Write the advantage of PCM.

8. The orbits, which are assigned to satellites with respect to earth are called?

9. The amplitude of which carrier signal is based on the information in the digital signal?

10. The Digitization of the Analog signal in PCM is done by whom?

11. What is a cell in cellular system?

12. In satellite communication, what is the subsystems present in the ground segment called ?

13. Which carrier signal phase is based on the information in the digital signal?

14. Give examples of Amplitude Shift King.

15. What is a cluster in cellular system?

16. Define ASK and PSK.

17. Define PSK and FSK.

18. Define cross talk and echo suppressors ?

19. Define Quantizing and Sampling?

20. Write features of Delta modulation.

21. Draw the block diagram of GPS receiver.

22. Define Femtocell and Microcell.

23. Give two advantages of cellular mobile systems over telephone systems.

24. What is MODEM ? classify MODEM.

25. Write down what you know about Digital Communication ?

Q2) Long answer questions   **(1X10 Marks = 10 Marks)**

1. Explain the process of generating frequency shift keying with neat diagram.
2. Write down the types of Binary Line Coding Techniques and explain any two of them.
3. Explain in detail Concept of data encryption.
4. Explain the process of generating Phase shift keying with neat diagram.
5. Explain the concept of Cells, Cell Clustering and cell splitting in Cellular Communication.
6. Draw the PCM system block diagram and explain its operation.
7. Explain the process of generating amplitude shift keying with neat diagram.
8. Draw and Explain the block diagram of Satellite Communication – Transponder and GPS Receiver.
9. Draw and Explain Block diagram of cellular phone handset.
10. Write in detail what is handoff in cellular communication and explain its types.
11. Discuss in detail about the operation of cellular mobile system with diagram.
12. Explain about TDMA and CDMA
13. Explain delta modulation and Adaptive Delta Modulation .
14. Write a short note on PCM and explain the role of compander in PCM.
15. Explain delta modulation and demodulation technique.

Q3) Short Answer Questions   **(1X5 Marks =5 Marks)**

1. Write down what you know about MODEM
2. Compare GSM and CDMA.
3. Explain Hand off process in cellular communication with its type.
4. Compare LEO and MEO .
5. Write a note on FSK.
6. Write down what you know about Wireless Generation.
7. Compare of TDM and FDM.
8. Write down what you know about GSM.
9. What is SIM? Explain Keys of SIM Card.
10. Compare LEO and GEO.
11. Write Advantages and Disadvantages of digital transmission.
12. Write a note on ASK.

13. Write down what you know about FDM and TDM.

14. Write The information about CDMA.

15. What is SIM? Explain Functions of SIM card.

16. What is Satellite Orbit? Write its types and information about the LEO.

17. Compare OSI model and TCP/IP model.

18. What is Delta Modulation? Write its features.

19. Write the concept of sampling rate.

20. Write the advantages of digital communication over analog communication.

21. What are the functions of MTSO and MSC in cellular communication?

22. What are the functions of HLR and VLR in cellular communication?

23. Compare of FDMA and CDMA.

24. Differentiate between Delta Modulation and Adaptive Delta Modulation.

25. State and explain sampling theorem in detail.

26. Mention any five advantage of digital modulation over analog modulation.

27. Compare ASK and FSK

28. Write note on OSI model.

29. Write note on TCP/IP model.

30. Write note on Ethernet.

Electronics Paper VIII
BET 402: 8085 microprocessor and 8051 microcontroller

Question Bank

Q1). Answer in one sentence [1X2 Marks=2 Marks]

1) Define the terms: Nibble and Byte.

2) What is Relation of Address lines and Memory Size?

3) Why default stack pointer contains are 07H?

4) Enlist Arithmetic instructions of 8051 microcontroller.

5) What is importance of TI flag?

6) Define the terms: bit and word.

7) Why 16 Address lines gives 64K bytes Memory Size?

8) Which is default bank for stack upon reset?

9) Enlist logical instructions of 8051 microcontroller.

10) What is importance of RI flag?

11) Define the terms: bit and byte.

12) Why 16 Address lines gives 64K bytes Memory Size?

13) How many banks in 8051 Microcontroller? How 8051 banks are switched?

14) Enlist call and jump instructions of 8051 microcontroller.

15) What is importance of RI flag?

16) What is microprocessor? Give the power supply &clock freqency of 8085

17) List few applications of microprocessor-based system.

18) What are the functions of an accumulator?

19) What is an opcode?

20) List the different options to double the baud rate.

21) Write a short note on Immediate addressing mode.

22) Classify the instructions based on word size.

23) List the basic functions of ALU and Control unit.

24) State the role of control bus and data bus.

25) What is ALE? Explain the functions of ALE in 8085.

Q2) Long answer questions   **(1X10 Marks = 10 Marks)**

1. What is Resolution of DAC? Discuss how R-2R ladder will work as DAC.

2. With neat labelled block diagram explain internal architecture of 8051 microcontroller and its various blocks.

3. Discuss in detail various addressing modes in 8051 microcontroller.

4. With neat labelled block diagram explain internal architecture of 8085 microprocessor and its various blocks.

5. Draw neat labelled pinout of 8051 microcontroller and discuss functions of each port

6. With Program discuss in detail interfacing of optocoupler with 8051 microcontroller to control AC load.

7. Answer the following questions

    [a] What is the purpose of EA pin in 8051 Microcontroller.

    [b] What is the function of ALE signal?

    [c] Describe DPTR.

    [d] Write instruction to select register bank 2.

    [e] Draw clock circuit of 8051 microcontroller.

8. Explain following instructions.

    [a] XCHD A, R1 [b] MOVC A,@A+DPTR

    [c] MOV A, 50H [d] MOV R7,#50H [e] MOV 50H ,#50H

9. Explain different modes of Timer for 8051 microcontroller.

10. List main feature of 8051 microcontroller discuss RAM structure of 8051 microcontroller.

11. Explain following instructions

    [a] SWAP A [b] MOVX A,@DPTR [c] DIV AB [d] MUL AB [e] RR A

12. Explain operation of timer in mode 1. Discuss programming steps to generate time delay using mode 1. Write program to generate delay of 1 second using timer 0 in mode 1.

13. Answer the following questions

    [a] List all SFR used for 8051 microcontroller.

    [b] Describe PC.

    [c] What is the function of $\overline{PSEN}$ signal?

    [d] Draw Reset circuit of 8051 microcontroller.

    [e] Explain function of MOV R1,35h

14. Write and explain bit format for SCON and PCON SFR for 8051 Microcontroller.

15. Explain TCON and TMOD SFR for 8051 Microcontroller.

Q3) Short Answer Questions   **(1X5 Marks =5 Marks)**

1. Enlist various features of 8085 microprocessor.

2. Discuss Clock circuit of 8051 microcontroller.

3. Write an assembly language program to control relay connected at P0.0 pin.

4. Explain in detail bits of TMOD register and their applications.

5. What is interrupt? Give various sources of interrupt for 8051 microcontroller.

6. Write an assembly language program to toggle all LEDs Connected at P0 after 10 ms delay.

7. Discuss Reset circuit of 8051 microcontroller.

8. Write an assembly language program to control optocoupler connected at P1.1 pin.

9. Explain in detail bits of TCON register and their applications.

10. What is interrupt? Explain how 8051 microcontroller interrupt are enabled.

11. Write an assembly language program to generate square wave at P0.0 pin with 1 KHz frequency.

12. Draw minimum connection of 8051 microcontroller.

13. Write an assembly language program to control LED connected at P1.1 pin.

14. Explain in detail bits of SCON register and their applications.

15. What is interrupt? In 8051 microcontroller how interrupt priority is assigned.

16. Write an assembly language program to toggle led at P0.0 pin by using timer 1 in mode 2.

17. List the major features of 8085 microprocessor.

18. Define register. Mention the need of registers in microprocessor or microcontroller.

19. Compare serial communication and parallel communication.

20. Write a short note on assembly language programming.

21. Compare Microprocessor and Microcontroller

22. Draw and explain briefly SCON SFR in 8051 microcontroller.

23. Mention the applications of microcontrollers in everyday life.

24. What is Program counter? Discuss various registers in 8085.

25. Write a short note on stack pointer and Program counter.

26. Write a program to perform 8-bit addition in 8051.

27. Write a program to perform 8-bit subtraction in 8051.

28. Write a short note on Mode 0 and Mode 3 operation of 8051.

29. Define Baud rate. Write the steps to transfer data serially.

30. What is timer counter? Indicate which mode and which timer are selected for each of the following. (a) MOV TMOD, #01H (b) MOV TMOD, #20H (c) MOV TMOD, #12H