

QUESTION BANK
ON
DIGITAL ELECTRONICS & MICROPROCESSOR



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DIGITAL ELECTRONIC AND MICROPROCESSOR

BRANCH –ELECTRICAL ENGINEERING

SEMESTER -5TH

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BASICS OF DIGITAL ELECTRONIC

1 Answer the following question . (2 marks each)

- A . What is digital electronic ?
- B . Define Microprocessor ?
- C .How many types of numbers system and what are they ?
- D .To convert $(10110010)_2$ to decimal number system ?
- E . $(469)_{10}$ To convert binary number ?
- F . $(106)_8$ to decimal number system ?
- G . $(11001011)_2$ to convert octal number system ?
- H . To convert binary number to decimal number system ?
- I . $(1468)_{10}$ to convert Hexadecimal ?
- J . $(1B3D)_{16}$ to convert decimal number system ?
- K . $(472)_8$ to convert hexadecimal number system ?
- L . What is weight code and non weighted code ?
- M. Define AND and OR gate with truth table ?
- N .Define NOR and NAND gate ?

2 Answer the following question . (5 marks each)

- A . Describe all the logic gates with truth table ?
- B . Using NAND & NOR gate realize all the logic gate ?
- C .Explain about the Universal gate ?
- D .Use of Boolean algebra solve this equation ?
 - $Y = ABCD + ABC\overline{D} + A\overline{B}CD + A\overline{B}C\overline{D} + \overline{A}BCD$
 - $Y = ABCD + A\overline{B}C\overline{D} + A\overline{B}CD + A\overline{B}C\overline{D} + \overline{A}BCD$
- E . Using K-map solve the Boolean expression ?

$$Y=(ABCD) = \sum_m (0,1,2,3,4,5,6,7,8,9,10,13,14,15,) \text{ and } D (6,11)$$

F . Slove the Boolean expression using K –map ?

$$Y=(WXYZ)= \pi M(1,2,3,4,5,7,9,12,13,14,15) \& \phi (6,10,13)$$

G . Slove the Boolean expression using K –map in SOP method ?

$$Y=(WXYZ)= \sum M(0,2,4,6,8,10,12,13,15) \& d (1,5,7,9)$$

H . Slove the Boolean expression using K –map in POS method ?

$$Y=(ABCD)= \pi M(2,3,4,5,7,8,9,10,14,15) \& \phi (6,11,12)$$

I . Slove the Boolean expression using K –map in SOP method ?

$$F(ABCD) =\sum M(4,5,6,7,8,9,10,11,12,13,14,15)$$

COMBINATIONAL LOGIC CIRCUIT

1 Answer the following question . (2 marks each)

- A In which logic circuit does not have a memory?
- B In which circuit does not have a feedback path from o/p to i/p ?
- C Define combinational circuit ?
- D In which ckt does not have a clock signal ?
- E State half adder?
- F Half adder ckt is used to add how many bit number?
- G What is the o/p sum expression in half adder ckt?
- H The o/p of half adder ckt carry is ----- ?

- I State the uses of half adder ?
- J What is used to sum of the full adder ckt ?
- K The full adder ckt is used to add how many bit number?
- L What is the o/p sum expression in full adder ckt?
- M The o/p of full adder ckt carry is ----- ?
- N Define 4 ×1 multiplexer ?
- O State 1×4 demultiplexer ?
- P Half Subtractor has how many i/p and how many o/p line ?
- Q Full Subtractor used to subtractor how many bit number ?
- R The O/P the of difference in full subtractor ?
- S The O/p the of difference in full subtractor ?
- T The o/p the of full subtractor for borrow ?

2 Answer the following question .

(5 marks each)

- A Difference between the combinational ckt and logical ckt ?
- B Describe about the combinational logic ckt ?
- C Explain half adder ckt & verify its truth table ?
- D Describe the full adder circuit with truth table ?
- E State & Explain about full subtractor ?
- F Describe half subtractor with truth table ?
- G Explain the operation of 4:1 multiplexer ?
- H Describe the 1×4 demultiplexer with logic gates ?
- I State the working of binary to decimal encoder ?
- J Explain about the two bit magnitude comparator ?
- K Explain the 3×8 decoder with logic gate ?

SEQUENTIAL LOGIC CIRCUIT

1 Answer the following question . (2 marks each)

- A) Define sequential logic ckt?
- B) How many types of flip flop in sequential ckt ?
- C) The storage element is used in a sequential ckt is called?
- D) What is S-R flip flop ?
- E) Define D-flip flop ?
- F) The o/p of d flip flop is 1 when the i/p of D= ?
- G) The i/p of J&K is behave like what ?
- H) State the application of FLIP FLOP?
- I) Define modulus of a counter ?
- J) What is synchronous counter ?
- K) Define asynchronous counter ?
- L) What is Triggering ?
- M) Triggering more than on during a clock is called ?
- N) State counter ?
- O) The full form of SISO ?
- P) What is SIPO & PISO ?
- Q) WHAT Is down counter ?
- R) SISO register is use for?
- S) What is 4-bit synchronous counter ?

2 Answer the following question . (5 marks each)

- A) Explain about the clocked S-R flip flop with logic diagram ?
- B) Describe the operation with truth table of S-R flip flop ?
- C) Explain the T flip flop ?
- D) Describe about the J-K flip flop with truth table & logic gate ?
- E) Describe about the operation of D -flip flop with truth table & logic gate?

- F) Explain about the 4 –bit synchronous and asynchronous counter ?
- G) Distinguish between the synchronous and asynchronous counter ?
- H) Explain the working of SIPO & PISO register ?
- I) Describe the operation of SIPO & PIPO register ?
- J) Construct the level clocked J-K flip flop with truth table & logic gate ?

8085 MICROPROCESSOR

1 Answer the following question . (2 marks each)

- A) What is microprocessor ?
- B) Define microcomputer ?
- C) Microprocessor is made of -----?
- D) Which type of operation the microprocessor can perform ?
- E) What is the year the first microprocessor was introduced and how many bits ?
- F) The ALU stands for ?
- G) Which type of operation the ALU perform ?
- H) Arithmetic & logical operations means ?
- I) What is address bus ?
- J) Define data bus ?
- k) What is the work of IR & ID ?
- L) Define flag register ?
- M) What is temporary register ?
- N) Define stack pointer ?
- O) ALE stands for ?

2 Answer the following question . (5 marks each)

- A) Distinguish between the microprocessor & microcomputer ?
- B) Explain the architecture of 8085 microprocessor with neat and sketch diagram ?
- C) Describe the all pin of 8085 microprocessor with neat and sketch diagram ?
- D) Describe the stack, stack pointer and stack top ?
- E) Explain the various addressing modes of 8085 microprocessor ?
- F) Describe the timing diagram of memory read machine cycle ?
- G) Explain about the counter and time delay ?
- H) Explain the timing diagram of memory write operation ?
- I) Explain the timing diagram of opcode fetch machine cycle ?

INTERFACING & SUPPORT CHIPS

1 Answer the following question . (2 marks each)

- A what is primary memory ?
- B primary memory is a which type of memory ?
- C de fine CPU?
- D RAM stands for ?
- E ROM stands for ?
- F primary memory is a computer memory that is accessed directly by the ?
- G PROM stands for?
- H EPROM stands for ?
- J working of logic control is ?
- K 'IS ' STANDS FOR ?
- L secondary is which types of memory ?

M Define RD & WR ?

N State data base buffer ?

O EEPROM stands for ?

2 Answer the following question .

(5 marks each)

A Describe the functionary block diagram of 8255 i/p with neat & sketch diagram ?

B Explain about the seven segment LED display ?

C Describe the traffic light controller ?

D Explain about the internal organisation of RAM & ROM?