

Hall Ticket Number :

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R-11/R-13

Code : 1G366

III B.Tech. II Semester Supplementary Examinations May 2018

Microprocessors and Microcontrollers

(*Electrical & Electronics Engineering*)

Max. Marks: 70

Time: 03 Hours

Answer any five questions

All Questions carry equal marks (14 Marks each)

1. Bring out the differences between MIN & MAX modes of 8086. Explain how the Bus control signals are obtained in Maximum mode. 14M
2. a) Explain the addressing modes of 8086 with examples. 8M
b) Write assembly language programs for
 - i) ASCII addition.
 - ii) 2. 16-bit subtraction in direct and indirect addressing modes. 6M
3. Draw the ADC interface to 8086 using 8255 PPI. With a neat program, explain how analog to digital conversion is carried out by 8086 microprocessor. 14M
4. A memory system is to be designed for an 8086 processor based system with two chips of 16K X 8 EPROM and two chips of 32K X 8 RAM. Select the suitable memory map based on 8086 microprocessor's architecture. 14M
5. a) Explain the command words of 8259 PIC. 7M
b) Explain the architecture of 8253 in brief. 7M
6. a) Describe the methods of serial data communication with at least one example. 10M
b) Describe the modes of serial data transfer. 4M
7. a) Explain the memory organization of 8051 micro controller. 7M
b) Explain the following registers
 - i) SCON ii) TCON iii) TMOD iv) PCON 7M
8. a) Explain with neat block diagram, the architecture of ARM microcontroller. 10M
b) List out the features of MCS-96 microcontroller. 4M

Hall Ticket Number :

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R-11 / R-13

Code: 1G468

III B.Tech. II Semester Supplementary Examinations May 2018

Computer System Architecture

(Electrical & Electronics Engineering)

Max. Marks: 70

Time: 3 Hours

Answer any **five** questions

All Questions carry equal marks (**14 Marks** each)

1. a) Convert the following to indicates bases:
 - i) $(FACE)_{16}$ to $()_2$
 - ii) $(111011.11)_2$ to $()_{10}$
 - iii) $(7562)_{10}$ to $()_8$
 - iv) $(175)_{10}$ to $()_2$
- b) Explain about error detection code using odd parity bit.
2. a) What is Bus? A digital computer has a common bus system for 4 register s of 4bit each the bus is constructed with multiplexers?
 - i) How many selection inputs are there in each multiplexer
 - ii) What size of multiplexers is needed
 - iii) How many multiplexers are there in the bus?
- b) What are the phases of instruction cycle? Explain each.
3. a) Explain data manipulation instruction in detail
- b) Mention the characteristics of RISC.
4. a) Explain address sequencing? With neat diagram.
- b) Discuss the design of control unit.
5. a) Explain Addition &Subtraction algorithm with signed 2's complement data?
- b) Explain Division algorithm? With example.
6. a) What is virtual memory? What is the relation between address and memory space in a virtual memory system? Explain with the help of example
- b) Explain Auxiliary memory with memory connection to the CPU?
- 7 a) Discuss about Direct-Memory access?
- b) Draw the flow chart for CPU-IOP communication?
8. a) Explain in detail arithmetic pipeline?
- b) Briefly explain about all inter connection structures?
