9. (a) Write about the four modes of timer operation with the control registers use in 8051.

Or

(b) Discuss the interrupt structure of 8051 micro controller.

10. (a) Discuss any four addressing modes in 8051 with example.

Or

(b) List the arithmetic and logical group of instructions of 8051.

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S.No. 186 **12PPH08**

(For the candidates admitted from 2012–2013 onwards)

M.Sc. DEGREE EXAMINATION, NOVEMBER 2017.

Third Semester

Physics

MICROPROCESSORS AND MICROCONTROLLERS

Time : Three hours Maximum : 75 marks

PART A — (5 × 5 = 25 marks)

Answer ALL questions.

1. (a) Explain the requirement of a program counter, stack pointer and status flags in the architecture of Intel 8085 microprocessor.

Or

(b) Write an assembly language program to add 8-bit decimal numbers; sum may be of 16 bits.

2. (a) Explain 8086 pipe lined architecture in detail.

Or

(b) With the help of an example, describe the action performed by 8086 for the following instructions :

(i) AAM

(ii) CMPSB

(iii) IMUL

(iv) ROL.

3. (a) Discuss the microprocessor based crystal growth control process.

Or

(b) Explain the BSR operation of 8255 PPI.

4. (a) What are the features of 8051 microcontroller?

Or

(b) (i) What is the difference between timer and counter operation in 8051?

(ii) What is the time duration for one state and one machine cycle of a 6 MHz crystal is connected to 8051?

5. (a) List the instruction set of 8051 micro controller that affect the flag bits.

Or

(b) Write an 8051 assembly language program to find the sum of the elements in an array.

PART B — (5 × 10 = 50 marks)

Answer ALL questions.

6. (a) With neat diagram explain the architecture of 8085.

Or

(b) Draw the timing diagram for the memory read and write cycles in 8085 microprocessor system. Explain shortly.

7. (a) With an example, explain the addressing modes of 8086.

Or

(b) Draw the functional block diagram of 8086 processor and explain about the registers and their functions.

8. (a) Explain a microprocessor based technique to measure and control temperature.

Or

(b) Interface ADC 0809 with PPI 8255 and explain the operation.