

(6 pages)

Reg. No. : .....

Code No. : 6783

Sub. Code : KPHM 23

M.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2017.

Second Semester

Physics

MICROPROCESSOR 8085 AND  
MICROCONTROLLER 8051

(For those who joined in July 2016 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. How many general purpose resistors in 8085 microprocessor.  
(a) 16 (b) 4  
(c) 6 (d) 32
2. The stack is usually accessed in  
(a) LIFO (b) LIFO  
(c) FIFO (d) FILO

3. Which instruction is unconditional branching  
(a) JP (b) JNC  
(c) JMP (d) JPN
4. Which one is implied addressing mode  
(a) MVI B, 45 (b) CMA  
(c) LDA 4000H (d) LDAX B
5. In a DMA write operation, the data is transferred  
(a) From I/O to memory  
(b) From memory to I/O  
(c) From memory to memory  
(d) From I/O to I/O
6. EPROM is generally erased by using  
(a) UV ray  
(b) IR ray  
(c) 12 V electrical pulse  
(d) 24 V electrical pulse
7. The internal RAM memory of the 8051 is  
(a) 32 bytes (b) 64 bytes  
(c) 128 bytes (d) 256 bytes



8. This program segment will be executed continuously,

```
STAT:  MOV A, #01 H  
      JMP STAT
```

- (a) True (b) False

9. The time taken by the ADC from the active edge of SOC (Start Of Conversion) pulse till the active edge of EOC (End Of Conversion) signal is called

- (a) Edge time (b) Conversion time  
(c) Conversion delay (d) Time delay

10. A thermistor is a

- (a) Sensor (b) ADC  
(c) Transducer (d) Micro Controller

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Explain the architecture of microprocessor 8085.

Or

- (b) Explain the purpose of the following signals in 8085.

- (i) READY  
(ii) HOLD  
(iii) IO/M  
(iv) INTR  
(v) AD0 - AD7.

Page 3

Code No. : 6783

12. (a) Describe the sequence of events that may occur during the different T states in the opcode fetch machine cycle of 8085.

Or

- (b) Write a program for adding ten 8-bit numbers and store the output in the memory location 2000H.

13. (a) Distinguish memory mapped I/O and I/O mapped I/O interface schemes.

Or

- (b) Explain the following in the timing diagram :

- (i) Cycle  
(ii) Machine cycles  
(iii) T states.

14. (a) Draw and explain Internal RAM organisation of 8051.

Or

- (b) Write an ALP to generate square wave on port pin 1.6 having 50% duty cycle.

15. (a) Explain the operation of Sample and Hold circuit.

Or

- (b) List the temperature sensors. And explain two sensors with neat diagram.

Page 4

Code No. : 6783

[P.T.O.]



**PART C — (5 × 8 = 40 marks)**

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Draw the pin diagram of 8085 and explain the function of each pin.

Or

- (b) Distinguish series and parallel mode of data transfer technique. Explain DMA scheme of data transfer.

17. (a) Explain the addressing modes of 8085 microprocessor with suitable example.

Or

- (b) (i) Describe the operations of stack with suitable example.  
(ii) Write an ALP to arrange an array of 8 bit number in ascending order.

18. (a) Explain the operating models of 8255 programmable peripheral interface.

Or

- (b) Explain the operating mode of 8253 timer/counter.

Page 5

Code No. : 6783

19. (a) Describe briefly 8051 microcontroller hardware.

Or

- (b) Explain Timer and Counter in 8051 microcontroller and explain two operating mode of Timer of 8051.

20. (a) Explain in detail stepper motor control in 8085.

Or

- (b) Explain interfacing of LCD module-8051 microcontroller and write an ALP Programme to display a string "MICROPROCESSOR".

Page 6

Code No. : 6783

