

Code No: **R32014**

R10

Set No. 4

III B.Tech II Semester Regular/Supplementary Examinations, May/June - 2015

WATER RESOURCES ENGINEERING-II

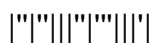
(Civil Engineering)

Time: 3 hours

Max. Marks: 75

**Answer any FIVE Questions
All Questions carry equal marks**

- 1 a) Discuss in brief various causes of failure of weirs and their remedies. 7
b) What is meant by scour? What precautions do you take against it in weir design? 8
- 2 a) Define the following: (i) surcharge storage (ii) valley storage (iii) safe yield and (iv) secondary yield. 8
b) Explain in brief various investigations required for reservoir planning. 7
- 3 a) Explain how you account for earthquake effects in the design of a gravity dam. 7
b) Explain the method of determining the principal and shear stresses in a gravity dam. 8
- 4 a) Discuss in brief the causes of failure of earth dams. 8
b) Explain with the help of a sketch, the components of a zoned embankment dam, with their functions 7
- 5 a) What is a 'spillway gate' and what are the merits and demerits of installing such gates? 7
b) What are spillways and where are they provided? Write short notes on Ogee-shaped spillway. 8
- 6 a) Discuss briefly the components of various types of falls with neat sketches. Also discuss the stability of each type. 8
b) Explain the procedure of designing Sarda type fall. 7
- 7 a) Describe the necessity and functioning of a 'Distributary head regulator' and a 'Cross regulator' in a canal project. 8
b) What is meant by the terms 'flexibility', 'proportionality', 'setting' and 'sensitivity' as applied to modules. 7
- 8 a) Classify aqueducts and explain under what circumstances each one is used. 8
b) Describe with the help of sketches various types of cross-drainage works. 7



Code No: **R32024**

R10

Set No. 1

III B.Tech II Semester Regular/Supplementary Examinations, May/June - 2015

MICROPROCESSORS AND MICROCONTROLLERS

(Electrical and Electronics Engineering)

Time: 3 hours

Max. Marks: 75

**Answer any FIVE Questions
All Questions carry equal marks**

- 1 a) Differentiate between Microprocessor and Microcontroller. Mention few applications. [8]
b) With the help of functional diagram explain the operation of 8086 microprocessor [7]
- 2 a) Explain any three string manipulation instructions of 8086. [8]
b) Describe the function of the following pins in 8086 maximum mode of operation [7]
i) TEST ii) $\overline{RQ_0}$ / $\overline{GT_0}$ and $\overline{RQ_1}$ / $\overline{GT_1}$.
- 3 a) Write a program to find the sum of squares of first ten numbers. [7]
b) Explain the following assembler directives in detail. [8]
i) ENDP ii) LABEL iii) EQU iv) ASSUME
- 4 a) Explain about the Architecture of 8255 PPI along with operating modes. [8]
b) Interface DAC AD7523 with 8086 CPU running at 8 MHz and write an Assembly Language Program to generate a saw tooth waveform using this circuit. [7]
- 5 a) Describe the important features of 8257 DMA. [8]
b) Discuss about the operational command words of 8259 and draw its frame format. [7]
- 6 How does the timer overflow interrupt differ from the real-time clock interrupts? Give four applications of the real-time clocked interrupt. [15]
- 7 a) Discuss about the addressing modes of 8051 micro controller. [7]
b) Explain the following instructions of 8051 micro controller. [8]
i) ORL ii) CLR iii) RLC iv) CPL
- 8 a) Discuss in detail about parallel I/O ports in 8051 micro controller and explain how these ports are accessible for specific applications. [8]
b) Draw the relay's and latch interfacing diagram with the 8051 microcontrollers and explain its operation. [7]

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R10

Set No. 2

III B.Tech II Semester Regular/Supplementary Examinations, May/June - 2015
MICROPROCESSORS AND MICROCONTROLLERS
(Electrical and Electronics Engineering)

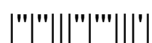
Time: 3 hours

Max. Marks: 75

Answer any FIVE Questions
All Questions carry equal marks

- 1 a) Draw the Register organisation of 8086 microprocessor and explain its operation. [7]
b) What is BIU and give the special processor activities of 8086? [8]
- 2 a) What is meant by an addressing mode? Explain the different addressing modes supported by 8086 with suitable examples. [8]
b) Draw timing diagram for maximum mode of operation in 8086 micro processor. [7]
- 3 a) Explain the following assembler directives: [8]
i) END ii) ORG iii) PTR iv) OFFSET
b) Write ALP to interfacing stepper motor with 8086 microprocessor. [7]
- 4 a) Differentiate between the mode 1 and mode 2 operation of 8255. [8]
b) Explain how 8255 PPI is interfaced with 8086 microprocessor. [7]
- 5 a) Explain the cascaded mode operation of 8259 with a neat block diagram. [7]
b) Explain how static RAM are interfaced to 8086. Give necessary interface diagram assuming appropriate signals and memory size. [8]
- 6 a) Why the synchronous serial data communication much more efficient than asynchronous serial data communication explain in detail. [7]
b) Explain the details of different kinds of memories given in 8051 microcontroller. [8]
- 7 a) Explain the interfacing of 7-segment display with 8051 microcontroller [7]
b) Explain instruction set of 8051 micro controller [8]
i) MOV ii) PUSH iii) INC iv) ANL
- 8 Write short notes on the following: [15]
(a) 8279 Keyboard and display controller (b) MACROs and procedures.

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R10

Set No. 3

III B.Tech II Semester Regular/Supplementary Examinations, May/June - 2015

MICROPROCESSORS AND MICROCONTROLLERS

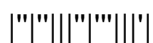
(Electrical and Electronics Engineering)

Time: 3 hours

Max. Marks: 75

**Answer any FIVE Questions
All Questions carry equal marks**

- 1 a) What do mean by pipelined architecture? How it is implemented in 8086. [7]
b) Explain the logical rotate instructions of 8086 with examples. [8]
- 2 a) Discuss briefly about the addressing modes of 8086 with examples. [8]
b) Explain the minimum mode operation of 8086 with the help of a PIN diagram. [7]
- 3 a) Explain the following assembler directives in detail. [8]
i) ENDP ii) LABEL iii) EQU iv) ASSUME
b) Explain the Algorithm for the execution of WHILE loop. [7]
- 4 a) Explain I/O modes of operation of 8255 PPI. [7]
b) Write an ALP for 8051 to find the sum of a series of 8-bit numbers. [8]
- 5 a) Describe the procedure of interfacing static memories with a CPU. [7]
b) Interface a 8 X 8 matrix key board to 8051 using 8279. Display the key number on the 7 segment display interfaced to 8051 through 8279. [8]
- 6 a) What is interrupt priority of 8051 and how can one resolve it? Also give [8]
methodologies that a CPU can utilize.
b) Draw the pin diagram of 8051 controller and explain the functions of each pin. [7]
- 7 a) Briefly list out the relevant features of 8051 microcontroller. [7]
b) Explain special function registers of 8051 microcontroller [8]
i) SCON ii) IE iii) TMOD iv) PCON
- 8 Write short notes on the following: [15]
a) Memory mapping techniques in 8086
b) Timers and Counters in 8051 microcontroller
c) Instruction formats of 8086.



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MICROPROCESSORS AND MICROCONTROLLERS

(Electrical and Electronics Engineering)

Time: 3 hours

Max. Marks: 75

**Answer any FIVE Questions
All Questions carry equal marks**

- 1 a) Describe about the physical memory organization in an 8086 system [7]
b) Give the differences between microprocessors and microcontrollers? [8]
- 2 a) List out and explain instruction formats of 8086 microprocessor [8]
b) Draw the timing diagram for the memory write cycle operation in the minimum mode of 8086 processor. [7]
- 3 a) Develop an assembly language program to multiply two BCD numbers of 2-digits each. [7]
b) Explain the following assembler directives. i) END ii) ORG iii) EQU iv) ASSUME [8]
- 4 a) Draw the internal block diagram of 8255 PPI and explain its operation. [8]
b) Draw the frame format of I/O mode in 8255 and explain the operation of each field in detail. [7]
- 5 a) Draw the circuit diagram to interface the DAC to the microcontroller and explain. [7]
b) Distinguish between synchronous and asynchronous serial data transmission techniques. [8]
- 6 Draw the 8051 microcontroller internal architecture and explain its operation in detail. [15]
- 7 a) Write 8051 program to multiply the unsigned number in register R2 by the unsigned number on port 2 and put the result in external RAM locations 1000H (MSB) and 1001H (LSB). [8]
b) How do you enable communication among processes by using interrupts? Discuss? [7]
- 8 Write short notes on the following: [15]
a) Relay's and latch interfacing with the 8051 microcontrollers
b) Mode-1 Baud rates and serial data mode-2 multiprocessor mode
c) MACROs.

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