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 in8086 maximum mode of operation [7]
i) TEST ii) $RQ_0/\overline{GT_0}$ and $RQ_1/\overline{GT_1}$.

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]

-000-

Code No: **R32024** **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.

-000-

Code No: **R32024** **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. i) ENDP ii) LABEL iii) EQU iv) ASSUME	[8]
	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 methodologies that a CPU can utilize.	[8]
	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 i) SCON ii) IE iii) TMOD iv) PCON	[8]
8		Write short notes on the following: a) Memory mapping techniques in 8086 b) Timers and Counters in 8051 microcontroller c) Instruction formats of 8086.	[15]

-000-

Code No: **R32024** **R10** **Set No. 4**

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) 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.

-000-