

AR16

CODE: 16CE3017

SET-2

**ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)**

III B.Tech II Semester Supplementary Examinations, July- 2019

WATER RESOURCE ENGINEERING

(Civil Engineering)

Time: 3 Hours

Max Marks: 70

Answer ONE Question from each Unit

All Questions Carry Equal Marks

All parts of the Question must be answered at one place

UNIT-I

1. a) Discuss about various methods to measure average rain fall data. 6M
- b) Table below gives ordinates of 6-hr Unit Hydrograph. Derive ordinates of 3-hr Unit Hydrograph for the same catchment? 8M

Time(Hrs)	0	3	6	9	12	15	18	21	24
Ordinates of 6-Hr UH	0	10	20	30	40	30	20	10	0

(OR)

2. a) What is Runoff? Explain various factors affecting Runoff. 6M
- b) Explain briefly about the various types of Precipitation? 8M

UNIT-II

3. a) Derive an expression for discharge from a well fully penetrated into an unconfined Aquifer. 6M
- b) During a recuperation test conducted on an open well in a region, the water level in the well was depressed by 3m and it was observed to rise by 1.75 m in 75 minutes. What is the specific yield of open well in that region and what could be the yield from a well of 5m diameter under a depression head of 2.5m? 8M

(OR)

4. a) What do you understand by Recuperation? Derive the equation to determine the discharge from the open well by this method? 6M
- b) A tube well penetrates fully a 8 m thick water bearing stratum (confined) of medium sand having coefficient of permeability of 0.004 m/sec. The well radius is 15 cm and is to be worked under a drawdown of 3 m at the well face. Calculate the discharge from the well. What will be the increase in discharge if the radius of the well is doubled? Take radius of zero draw down equal to 400 m in each case. 8M

UNIT-III

5. a) Write the step by step procedure of calculating the safe yield of a reservoir by mass curve of inflow for the given storage capacity. 6M
- b) The yield of water in Mm^3 from a catchment area during each successive month is given in the following table. 8M

1.4	2.1	2.8	8.4	11.9	11.9
7.7	2.8	2.52	2.24	1.96	1.68

Determine the minimum capacity of a reservoir required to allow the above volume of water to be drawn off at a uniform rate assuming that there is no loss of water over the spillway.

(OR)

6. a) Explain various measures that can be adopted to control the sedimentation in the reservoir. 7M
- b) Explain various investigations required for reservoir planning. 7M

UNIT-IV

7. a) Define Duty and Delta. Derive the relation between them. 6M
- b) A water course has a culturable command area of 2000 Ha. The intensity of irrigation for crop A is 40% and for B 35%, both crops being Rabi crops. Crop A and B has kor period of 25 days and 15 days respectively. Kor depth for crop A and B has 20 cm and 15 cm respectively. Determine the discharge required in the water course if the canal losses are 20%. 8M

(OR)

8. a) What is consumptive use and discuss about various methods to measure consumptive use? 6M
- b) The base period, intensity of irrigation and duty of water for various crops under the canal system are given. Determine the reservoir capacity if the culturable command area is 4000 hectares, canal losses are 20% and reservoir losses are 10%. 8M

Crop	Base period (days)	Duty at field (Ha/cumec)	Intensity of irrigation
Wheat	120	1800	20%
Sugar cane	360	1600	20%
Cotton	180	1400	15%
Rice	120	800	20%
Vegetable	120	700	20%

UNIT-V

9. a) Explain in detail the comparisons between Kennedy's theory and Lacey's regime theory. 6M
- b) Design an irrigation channel to carry a discharge of $50 \text{ m}^3/\text{sec}$. assume $N=0.0225$, $m=1$, and the channel has a bed slope of $0.15\text{m}/\text{km}$. 8M

(OR)

10. a) Why canal lining is necessary and explain different types of canal lining. 6M
- b) Design a trapezoidal shaped concrete lined channel to carry a discharge of $400\text{m}^3/\text{s}$ at a slope of $25 \text{ cm}/\text{km}$. The side slopes of the channel are $1.5\text{H}:1\text{V}$. The value of 'N' may be taken as 0.015 . Assume limiting velocity in the channel as $2.5\text{m}/\text{sec}$. 8M

AR16

CODE: 16EC3020 / EEE

SET-2

**ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)**

III B.Tech II Semester Supplementary Examinations, July- 2019

MICROPROCESSORS AND MICROCONTROLLERS

(Electrical and Electronics Engineering)

Time: 3 Hours

Max Marks: 70

Answer ONE Question from each Unit

All Questions Carry Equal Marks

All parts of the Question must be answered at one place

UNIT-I

1. a) Draw and explain the Architecture of 8086 with neat diagram 7M
b) Draw the pin configuration of 8086 7M
(OR)
2. a) Evaluate the memory organization of 8086 7M
b) Explain all bits of flag register of 8086 with a neat diagram. Show the settings and resetting of flag bits with a suitable example 7M

UNIT-II

3. Evaluate the Instruction set of 8086 with example 14M
(OR)
4. a) Explain the Assembler directives of 8086 with example 7M
b) Explain the string instructions with one example 7M

UNIT-III

5. a) State the features of 80386 micro processor 7M
b) Draw and describe the segment descriptor cache register of 80386 7M
(OR)
6. a) With neat diagram describe how physical address is generated in protected mode in 80386 7M
b) Comparison between 80386 and 80486 7M

UNIT-IV

7. a) Explain in detail about DMA controller 7M
b) Give the features of Intel 8255
(OR)
8. a) Draw and explain the block diagram of USART 7M
b) Give the features of 8251 7M

UNIT-V

9. With neat sketch explain the architecture of 8051 micro controller. 14M
(OR)
10. a) Explain the register set of 8051 micro controller. 7M
b) Explain the interrupt structure of 8051 micro controller. 7M

AR16

CODE: 16ME3019 **SET-1**
ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)

III B.Tech II Semester Supplementary Examinations, July- 2019

MECHANICAL VIBRATIONS

(Mechanical Engineering)

Time: 3 Hours

Max Marks: 70

Answer ONE Question from each Unit

All Questions Carry Equal Marks

All parts of the Question must be answered at one place

UNIT-I

1. a) Draw the displacement, velocity and acceleration diagrams for a follower when it moves with simple harmonic motion 4 M
- b) A cam rotating clockwise at a uniform speed of 200 r.p.m. is required to move an offset roller follower with a uniform and equal acceleration and retardation on both the outward and return strokes. The angle of ascent, the angle of dwell (between ascent and descent) and the angle of descent is 120° , 60° and 90° respectively. The follower dwells for the rest of cam rotation. The least radius of the cam is 50 mm, the lift of the follower is 25 mm and the diameter of the roller is 10 mm. The line of stroke of the follower is offset by 20 mm from the axis of the cam. Draw the profile of the cam. 10 M

(OR)

2. a) Define (i) Pressure angle (ii) Base Circle 4 M
- b) Draw the profile of a cam operating a knife edged follower from the following data. The least radius of the cam is 5 cm. The axis of the follower passes through the axis of the cam shaft. 10 M
 - a) It lifts the follower through 4 cm during its 120° rotation with Simple Harmonic Motion.
 - b) The follower remains at rest for next 70° rotation of the cam.
 - c) The follower then descends to its original position during 100° rotation of the cam with Simple Harmonic Motion.
 - d) The follower remains at rest for the rest of the revolution.

UNIT-II

3. a) Explain clearly the terms static balancing and dynamic balancing. State the necessary conditions to achieve them. 4 M
- b) A rotating shaft carries four unbalanced masses 18 kg, 14 kg, 16 kg and 12 kg at radii 50 mm, 60 mm, 70 mm and 60 mm respectively. The 2nd, 3rd and 4th masses revolve in planes 80 mm, 160 mm and 280 mm respectively measured from the plane of the first mass and are angularly located at 60° , 135° and 270° respectively measured clockwise from the first mass looking from this mass end of the shaft. The shaft is dynamically balanced by two masses, both located at 50 mm radii and revolving in planes mid-way between those of 1st and 2nd masses and midway between those of 3rd and 4th masses. Determine the magnitudes of the masses and their respective angular positions. 10 M

(OR)

4. a) A six-cylinder, single acting, and two stroke Diesel engine is arranged with cranks at 60° for the firing sequence 1-4-5-2-3-6. The cylinders, numbered 1 to 6 in succession are pitched 1.5 m apart, except cylinders 3 and 4 which are 1.8 m apart. The reciprocating and revolving masses per line are 2.2 tones and 1.6 tones respectively. The crank length is 375 mm, the connecting rod length is 1.6 m, and the speed is 120 r.p.m. Determine the maximum and minimum values of the primary couple due to the reciprocating and revolving parts. Also find the maximum secondary couple and angular position relative to crank No. 1. Take the plane between the cylinders 3 and 4 as the reference plane 14 M

UNIT-III

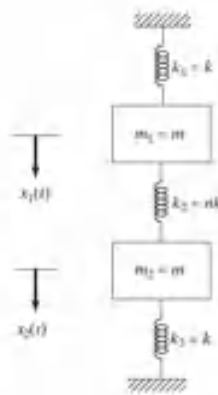
5. a) Explain the terms under damping, critical damping and over damping 6M
b) A coil of spring stiffness 4 N/mm supports vertically a mass of 20 kg at the free end. The motion is resisted by the oil dashpot. It is found that the amplitude at the beginning of the fourth cycle is 0.8 times the amplitude of the previous vibration. Determine the damping force per unit velocity. Also find the ratio of the frequency of damped and undamped vibrations 8 M

(OR)

6. a) Derive the equation to determine the frequency of transverse vibrations of a beam loaded with multiple point loads and distributed loads. 6 M
b) A vertical shaft 25 mm diameter and 0.75 m long is mounted in long bearings and carries a pulley of mass 10 kg midway between the bearings. The centre of pulley is 0.5 mm from the axis of the shaft. Find (a) the whirling speed, and (b) the bending stress in the shaft, when it is rotating at 1700 r.p.m. Neglect the mass of the shaft and $E = 200 \text{ GN/m}^2$. 8M

UNIT-IV

7. a) Find the natural frequencies and mode shapes of a spring-mass system, shown in Fig., which is constrained to move in the vertical direction only. Take $n=1$ 14 M



(OR)

8. a) What is the importance of vibration isolation and transmissibility 4 M
b) The mass of an electric motor is 120 kg and it runs at 1500 r.p.m. The armature mass is 35 kg and its C.G. lies 0.5 mm from the axis of rotation. The motor is mounted on five springs of negligible damping so that the force transmitted is one-eleventh of the impressed force. Assume that the mass of the motor is equally distributed among the five springs. Determine a. stiffness of each spring; b. dynamic force transmitted to the base at the operating speed 10 M

UNIT-V

9. a) Two rotors A and B are attached to the end of a shaft 50cm long. Weight of the rotor A is 300N and its radius of gyration is 30 cm and corresponding values of B are 500N and 45 cm respectively. The shaft is 7cm in diameter for the first 25cm, 12cm diameter for the next 10cm and 10cm diameter for the remaining length. Modulus of rigidity for the shaft material is $8 \times 10^{11} \text{ N/m}^2$. Find equivalent length and diameter of the shaft. also find the natural frequencies and mode shapes of the torsional vibration. 14 M

(OR)

10. a) Explain the procedure using example to determine the natural frequencies of multi degree of freedom system. 14 M

Answer ONE Question from each Unit

All Questions Carry Equal Marks

All parts of the Question must be answered at one place

UNIT-I

1. a) Draw and explain the Architecture of 8086 with neat diagram 7M
b) Draw the pin configuration of 886 7M
(OR)
2. a) Evaluate the memory organization of 8086 7M
b) Explain all bits of flag register of 8086 with a neat diagram. Show the settings and resetting of flag bits with a suitable example 7M

UNIT-II

3. Class the Instruction set of 8086 with example 14M
(OR)
4. a) Explain the Assembler directives of 8086 with example 7M
b) Explain the string instructions with one example 7M

UNIT-III

5. a) State the features of 8086 micro processor 7M
b) Draw and describe the segment descriptor cache register of 80386 7M
(OR)
6. a) With neat diagram describe how physical address is generated in protected mode in 80386 7M
b) Explain memory management unit of 80386 micro processor 7M

UNIT-IV

7. a) Explain in detail about DMA controller 7M
b) Give the features of Intel 8255
(OR)
8. a) Draw and explain the block diagram of USART 7M
b) Give the features of 8251 7M

UNIT-V

9. a) Write an 8051 ALP to find average of marks scored by students in 6 subjects [maximum per subject=20]. Assume the marks are stored from location 40H and the average is to be stored at location 50H. 7M
b) Explain the following instructions with an example. 7M
(i) SWAP A (ii) RRC A (iii) DIV AB
(OR)
10. a) Explain the addressing modes of 8051 micro controller with examples. 10M
b) Write and explain the alternative functions of port 3 4M

UNIT-I

1. a) List and explain various phases of a compiler. 10M
b) Explain specification and recognition of tokens. 4M
- (OR)**
2. a) Explain a language for specifying the lexical analyzer. 7M
b) Draw the regular expression for identifier. 7M

UNIT-II

3. a) Find the LALR for the given grammar and parse the sentence 7M
 $(a + b) * c$
 $E \rightarrow E + T \mid T$
 $T \rightarrow T * F \mid F$
 $F \rightarrow (E) \mid ID$
b) Construct Stack implementation of shift reduce parsing for 7M
the grammar
 $E \rightarrow E + E \mid E * E \mid (E) \mid id$ and the input string is $id1 + id2 * id3$
- (OR)**
4. a) What is an ambiguous grammar? Is the following grammar 7M
ambiguous? Prove. $E \rightarrow E + E \mid E * E \mid (E) \mid id$
b) Explain LL(1) grammar for the sentence : 7M
 $S \rightarrow iEtS \mid iEtSeS \mid a$
 $E \rightarrow b$

UNIT-III

5. a) Explain the applications of Syntax Directed Definition 7M
b) With a neat diagram explain the format of the Symbol Table. 7M
And discuss the tree structures representation of scope information

(OR)

6. What are the different intermediate code forms? Discuss three address code types and implementations of three address statements. 14M

UNIT-IV

7. a) Explain about various machine independent code optimization techniques. 7M
b) What are the advantages of DAG representation? Give example 7M

(OR)

8. a) Explain in detail about optimization of Basic Blocks. 7M
b) What are the optimization techniques applied on procedure calls? Explain with example. 7M

UNIT-V

9. a) Explain about peephole optimization technique. 7M
b) Explain about register allocation and assignment techniques. 7M

(OR)

10. a) Write an algorithm for constructing natural loop of a back edge. 7M
b) Write note on simple code generator 7M

AR13

CODE: 13CE3019

SET-I

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)

III B.Tech II Semester Supplementary Examinations, July- 2019

WATER RESOURCES ENGINEERING
(Civil Engineering)

Time: 3 Hours

Max Marks: 70

PART-A

ANSWER ALL QUESTIONS

[1 x 10 = 10 M]

1. a) Define the term "Hydrological Cycle"
- b) Define Precipitation.
- c) Define Infiltration.
- d) Define S-Hydrograph
- e) Define about Confined Aquifer.
- f) What is meant by Specific Yield?
- g) What is meant by permeability?
- h) Define Duty
- i) Define Canal lining
- j) What is meant by Kennedy's theory?

PART-B

Answer one question from each unit

[5x12=60M]

UNIT-I

2. (a) Explain briefly about the various types of Precipitation? 6M
- (b) What are the factors affecting infiltration? 6M
- (OR)
3. (a) What are the factors affecting runoff? 6M
- (b) Explain about the factors affecting the Evapotranspiration process. 6M

UNIT-II

4. (a) Expand and Explain IUH. 6M
- (b) Discuss about the limitations of Flood frequency studies. 6M
- (OR)
5. (a) Discuss about Channel and reservoir routing. 6M
- (b) Mention the Limitations and applications of IUH. 6M

UNIT-III

6. (a) Discuss briefly about Specific Capacity and Storage coefficient. 6M
- (b) Discuss about the importance and necessity of Irrigation. 6M
- (OR)
7. (a) Discuss about the various types of Wells? 6M
- (b) Differentiate between Confined and Unconfined Aquifer. 6M

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SET-I

UNIT-IV

- | | | |
|----|---|-----|
| 8. | Discuss about the depth and frequency of Irrigation | 12M |
| | (OR) | |
| 9. | Differentiate between Duty and Delta? | 12M |

UNIT-V

- | | | |
|-----|---|-----|
| 10. | Differentiate between Kennedy's and Lacey's theories? | 12M |
| | (OR) | |
| 11. | Explain the advantages of Canal Lining works. | 12M |

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AR13

CODE: 13EE3017

SET-1

**ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)**

III B.Tech II Semester Supplementary Examinations, July- 2019

**POWER SYSTEMS-III
(Electrical and Electronics Engineering)**

Time: 3 Hours

Max Marks: 70

PART-A

ANSWER ALL QUESTIONS

[1 x 10 = 10 M]

1. a) Briefly discuss the arc phenomenon in a circuit breaker.
b) Define RRRV
c) Differentiate fuse and relay.
d) List out the essential qualities of a relay?
e) Is overload protection is necessary for alternators? If No why?
f) Define magnetic inrush current?
g) Mention the protection schemes for the protection of parallel feeders.
h) Draw the scheme of protection diagram for a ring mains
i) Why most of the faults are single line to ground in an over head system?
j) Define Voltage surge and over voltage?

PART-B

Answer one question from each unit

[5x12=60M]

UNIT-I

2. a) Describe the action of an oil circuit breaker. How does oil help in arc extinction? 6M
b) Explain the following terms as applied to circuit breakers: (i) Arc voltage (ii) Re-striking voltage (iii) Recovery voltage. 6M
(OR)
3. a) Describe briefly the action of an air blast circuit breaker. Explain arc extinction mechanisms? 6M
b) In a short circuit test on a circuit breaker, the following readings were obtained on single frequency transient: 6M
Time to reach the peak re-striking voltage 50μs;
The peak re-striking voltage, 100kV;
Determine the average RRRV and frequency of oscillations.

UNIT-II

4. a) Explain the different types of over current relays? 5M
b) Describe the constructional details and operation of directional relays 7M
- (OR)**
5. a) Determine the time of operation of a 5 ampere, 3 second over current relay having a current setting of 125% and a time setting multiplier of 0.6 connected to supply circuit through a 400/5 current transformer when the circuit carries a fault current of 4000A. 5M
b) Explain the working of differential relays and compare with distance protection. 7M

UNIT-III

6. a) Describe with a neat diagram the balanced earth protection for small size generators. 6M
b) A 3phase transformer of 220/11000 line volts is connected in star-delta. The protective transformers on 220v side have a current ratio of 600/5. What should CT ratio 11000v side? 6M
- (OR)**
7. a) Discuss suitable protection schemes for internal and external fault protection of an alternator. 6M
b) Discuss the different transformer faults. What are the various protection schemes available for transformers? 6M

UNIT-IV

8. a) Describe the differential pilot wire method of protection of feeders. 6M
b) Explain the Translay protection scheme for feeders. 6M
- (OR)**
9. a) Discuss the time-graded over current protection for (i). Radial feeders (ii) Parallel feeders (iii) Ring main system. 8M
b) Explain the bus bar protection by differential protection scheme. 4M

UNIT-V

10. a) A 132 kV, 3-phase, 50Hz transmission line 200 km long consists of three conductors of effective diameter 20mm arranged in a vertical plane with 4m spacing and regularly transposed. Determine the inductance and kVA rating of the arc suppression coil in the system. 6M
b) Discuss the phenomenon of lightning stroke. How can wave set up by such a stroke be represented? 6M
- (OR)**
11. a) A 50 Hz over head line has a line to earth capacitance of 1 micro farad. It is decided to use an earth fault neutralizer. Determine the reactance to neutralize the capacitance of 100% of the length of the line. 6M
b) Explain the operation of valve type lightning arrestor. 6M

AR13

CODE: 13EI3002 SET-2
ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)

III B.Tech II Semester Supplementary Examinations, July- 2019 INSTRUMENTATION AND CONTROL SYSTEMS

(Mechanical Engineering)

Time: 3 Hours

Max Marks: 70

PART-A

ANSWER ALL QUESTIONS

[1 X 10=10M]

1. a) Define error?
b) What is the principle of manometer?
c) Define transducer?
d) Define stress and strain?
e) What is Peltier effect?
f) List the various techniques to measure torque?
g) Mention the advantages of root-locus over RH criterion?
h) Define order of a control system?
i) Define phase margin of the system?
j) What do you mean by relative stability of the system?

PARTB

Answer one question from each unit

[5 X 12=60M]

UNIT-I

1. a) What are the typical sources of these errors? How do you minimize its effects? 6M
b) Explain the working principle of thermal conductivity type gauge? 6M
(OR)
2. a) Classify different types of pressure gauges based on their range of operation? 6M
b) Define the terms i) Instrument ii) Measurement iii) Accuracy iv) Resolution
v) Precision and vi) Sensitivity 6M

UNIT-II

3. a) Explain the principle of operation of strain gauge? 6M
b) Explain different laws involved in thermocouple? 6M
(OR)
4. Explain various temperature measurement techniques? 12M

UNIT-III

5. a) Briefly explain various techniques to measure displacement? 6M
b) Explain working of capacitive transducer to measure displacement? 6M
(OR)
6. a) With neat diagram explain the working of stroboscope? 6M
b) Explain the working principle of seismic instruments? 6M

UNIT-IV

7. a) Develop the unit step response expression for second order system? 6M
b) Find the stability of the system by using RH criterion of open loop transfer function.
 $S^4 + 3S^2 + 4S + 3 = 0$ 6M

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(OR)

8. a) Explain the following specifications Rise time, Delay time, Peak time, Peak overshoot and Settling time? 6M
- b) For a unity feedback system having forward path transfer function
- $$G(s) = \frac{K}{s(1+0.6s)(1+0.4s)}$$
- .Determine the range of values of K for the system to be stable using RH criterion? 6M

UNIT-V

9. a Define following terms.
- i) Resonance bandwidth ii) Gain margin iii) Phase margin 6M
- b) Explain the operation of proportional and proportional integral controller? 6M

(OR)

10. Draw the Nyquist plot and find the stability of closed loop system when the open loop transfer function is $G(S)H(S) = \frac{(S+4)}{(S+1)(S-1)}$? 12M

Time: 3 Hours**Max Marks: 70****PART-A****ANSWER ALL QUESTIONS****[1 x 10 = 10 M]**

1. a) What are machine cycle and clock cycle?
- b) What are the advantages of using Macros in a program?
- c) Compare vectored and non-vectored interrupts.
- d) What is an ISR?
- e) What is the use BUSY pin in Intel 80386?
- f) What is the purpose of descriptors in Intel 80386?
- g) Identify by the suitable value of CWR of 8255 to operate it in mode-0 with different ports in input output mode as below: PORT A: Input; PORT B: Output PCU: Output; PCL: Input
- h) What is meant by framing error?
- i) Differentiate how PCON register is unique from other SFRs.
- j) Draw the flag register in 8051 Microcontroller.

PART-B**Answer one question from each unit****[5x12=60M]****UNIT-I**

2. Explain the architecture of 8086 Microprocessor with neat diagram. 12

(OR)

3. a) Explain any SIX assembler directives used in 8086 assembly level programming. 6
- b) Draw and explain the read cycle timing diagram of 8086 in maximum mode. 6

UNIT-II

4. Write an ALP to find the largest number from a byte series of size 10. 12

(OR)

5. a) Explain the following instructions of 8086 6

i) MOV CX, [5000H]	ii) XCHG AX, BX	iii) MOV DS, AX
iv) POP BX	v) MOVSB	vi) XLAT
- b) Write an ALP to move the contents of memory location containing offset address 2032H to 3034H. Assume that the size of data is 16 bits and base address of the data segment is 2000H. 6

UNIT-III

6. Explain the operation of memory management unit in Intel 80386 Microprocessor with suitable diagrams. 12

(OR)

7. a) Explain the function of following pins of 80486: (i) BS8' (ii) D/C' (iii) FLUSH' 6
- b) Compare 80486 Microprocessor with earlier Intel Microprocessors. 6

UNIT-IV

8. What is a DMA controller? Explain the interfacing of 8257 with 8086 microprocessor. 12

(OR)

9. Draw and explain the block diagram of 8251 USART along with the necessary details about the purpose of MODEM control signals in it. 12

UNIT-V

10. Explain in detail about bit manipulation instructions in 8051 Microcontroller with suitable examples. 12

(OR)

11. Draw and explain the pin diagram of 8051 Microcontroller. 12

AR13

CODE: 13CS3019

SET-2

**ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)**

III B.Tech II Semester Supplementary Examinations, July- 2019

**UNIX PROGRAMMING
(Computer Science & Engineering)**

Time: 3 Hours

Max Marks: 70

PART-A

ANSWER ALL QUESTIONS

[1 x 10 = 10 M]

1. a) How do you print the lines between 5 and 10, both inclusive?
b) How to create hard link?
c) Define shell variable.
d) What is a shell?
e) Differentiate link and symlink.
f) What is the use of fopen() system call?
g) What is zombie process?
h) Define file descriptor.
i) Write the use of named pipe.
j) What is semaphore?

PART-B

Answer one question from each unit

[5x12=60M]

UNIT-I

2. a) Explain grep, egrep and fgrep with examples. 6 M
b) Explain the following commands with examples 6 M
i) rmdir ii) mv iii) nl iv) who v) du vi) sort

(OR)

3. a) What is awk? Explain all built in variables used by awk. 6 M
b) Explain the following commands with examples 6 M
i) ln ii) cut iii) tail iv) cat v) find vi) umask

UNIT-II

4. a) What is meta character? Briefly explain shell meta characters. 6 M
b) Write a shell script to generate multiplication table. 6 M

(OR)

5. a) Explain about Shell responsibilities. 6 M
b) Write a shell script to display list of all files in the given directory. 6 M

UNIT-III

6. a) Illustrate the difference between System calls & Library functions? 6 M
b) Explain some standard I/O system calls. 6 M
(OR)
7. a) Write a short note on Unix file structure. 6 M
b) Explain the following system calls with examples: 6 M
i) lseek() ii) stat() iii) dup() iv) create()

UNIT-IV

8. a) With example explain the following system calls: 6 M
i) kill() ii) alarm() iii) sleep() iv) pause ()
b) Write a program to demonstrate zombie process. 6 M
(OR)
9. a) What is signal handler? Explain any two signals with example. 6 M
b) Define process. Explain the following system calls with examples 6 M
i) fork() ii) wait() iii) exec() iv) exit()

UNIT-V

10. Explain various IPC mechanisms. 12 M
(OR)
11. a) Write short on 6 M
i) Message Queue ii) shared memory.
b) What is pipe in IPC? Write a c program to establish two-way communication between two processes in IPC using pipe () system call. 6 M