

(3 Hours)

[80 Marks]

- N.B. 1) Question No. 1 is compulsory.
 2) Attempt any three questions out of remaining.
 3) Assume suitable data wherever necessary and state them clearly.

Q.1 a) Give the advantages of memory segmentation of 8086 microprocessor. 05

b) Differentiate Procedure and macro with example. 05

c) Explain VM, RF, IOPL and NT flags of 80386 microprocessor. 05

d) Explain an instruction issue algorithm of Pentium processor. 05

Q. 2 a) Explain minimum mode configuration of 8086 microprocessor 10

b) Explain cache organization of Pentium processor. 10

Q. 3 a) i) Write a short note on mixed language programming. 05

ii) Write a program to find the largest number from an array. 05

b) Draw and explain the block diagram of 8255 Programmable Peripheral Interface (PPI) with control word formats. 10

Q.4 a) Differentiate Real Mode, Protected Mode and virtual 8086 mode of 80386 microprocessor. 10

b) Design 8086 based system for following specifications: 10

i) 8086 in minimum mode with clock frequency 5MHz.

ii) 128 KB EPROM using 32KB*8 chips

iii) 32 KB RAM using 16KB*8 chips

Q.5 a) Explain different addressing modes of 8086 microprocessor. 10

b) Explain the operation of three 8259 PIC in cascaded mode. 10

Q.6 a) Draw and explain memory read and memory write machine cycle timing diagrams in maximum mode of 8086. 10

b) Explain the following: 05

i) Types of interrupts 05

ii) Modes of 8253 Programmable Interval timer 05

Q.P. code

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15/05/2019

(3Hrs)

Max Marks: 80

- NB: 1. Question No.1 Compulsory.
2. Solve any THREE from Q.2 to Q.6
3. Assume suitable data whenever necessary with justification.

Q1 Answer any FOUR questions

- (A) Explain Memory Bank in 8086 Processor. 05
(B) Give different bits of Control Register-0 (CRO) of 80386. 05
(C) Draw and Explain Floating Point Pipeline for Pentium Processor. 05
(D) Explain assembler directives. 05
(E) Explain DAA and XLAT instructions of 8086 Processor. 05
- Q2. (A) Explain architecture of 8086 Processor with example. 10
(B) Explain PPI 8255 with block diagram. 10
- Q3. (A) Design 8086 based system with following specifications. 10
(1) 8086 working at 8MHz at minimum mode
(2) 64KB RAM using 32KB X 8 device
(3) 64KB EPROM using IC 27128.
(B) Explain Operating Modes of PIC 8259. 10
- Q4. (A) Explain 80386 Processor descriptor and it's content. 10
(B) Explain Superscalar and Branch Prediction for Pentium Processor. 10
- Q5. (A) Write details note on Multitasking and Protection. 10
(B) Explain Instructions pairing rules for Pentium Processor. 10
- Q6. (A) Explain SPARC Processor with block diagram. 10
(B) Explain with block diagram PIT 8254. 10

TE(II), (choice Based), Computer Ensg,

15/05/19 (01/02)

[Time: 3 Hours]

[Marks:80]

Please check whether you have got the right question paper.

N.B: 1. Question No.1 is **Compulsory**.

2. Attempt any 3 questions out of rest.
3. Make suitable assumptions if any.
4. All questions carry equal marks.

Q.1	a) Differentiate between file system and database system with an example	05
	b) Explain Referential Integrity with suitable example	05
	c) List the steps required to map ER , EER model to relational model	05
	d) Explain the ACID properties of transactions	05
Q.2	a) Explain the following Relational Algebra operations with suitable example.	10
	a) Project b) Select	
	c) Union d) Cartesian Product	
	b) Construct an EER diagram and convert into Relational Model for a library Management System.	10
	Specify 2 complex SQL queries on the above-one using Group by clause and the other using Join operation with an example	
Q.3	a) Explain the following terms with an example:-	10
	i) Natural join. ii) Set Intersection. iii) Weak Entity. iv) Foreign key	
	b) Explain the Overall Architecture of DBMS in detail.	10
Q.4	a) Define Deadlock. Explain how deadlock can be handled	10
	b) Explain Specialization and Generalization with suitable example	10

TE(II), (Choice Based), Computer Ensg, 15F05F19

02/02

Q.5 a) For the schema mentioned below

Employee(eid, ename, address, city) Works(eid, cid, salary)

Company(cid, cname, city)

Create an ER diagram for the same and Specify the SQL queries for each of the statements given below

1) Modify database so that John now lives in Mumbai, assuming the database entry has John staying in Delhi.

2) Find Employees who live in same city as the company for which they work.

3) Give all employees of "AZ Corporation" whose salary has increased by 15% in the year 2018-19.

b) Define the term Normalization as used in database design. Explain the various normal forms with an example

10

Q.6 Write short notes on any two

20

- a) Log based recovery mechanism
- b) Triggers and transaction control commands
- c) Conflict and View Serializability
- d) Data Independence

TE Computer Sem-II, Choice Based

21-5-19

[Time: 3 hrs]

[Marks: 80]

- N.B:**
1. Question No.1 is compulsory.
 2. Assume suitable data if necessary.
 3. Attempt any three questions from remaining questions.

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|------------|--|----|
| Q.1 | a) Explain design issues of layers. Explain ISO OSI reference model with diagram. | 10 |
| | b) Explain design issues of Data Link layer. Explain Sliding Window protocol Selective Repeat. | 10 |
| Q.2 | a) Explain with diagram the relationship between Protocol, Interface and Service. | 05 |
| | b) Explain Repeater, Hub, Bridge, Switch Gateway. | 05 |
| | c) Describe TCP header with diagram. | 10 |
| Q.3 | a) Explain different framing methods? What are the advantage of variable length frame over fixed layer frame. | 10 |
| | b) Describe IPV4 header format with diagram. | 10 |
| Q.4 | a) Classify transmission media and compare them. | 10 |
| | b) Explain Distance vector routing protocol. What is count to infinity problem How to overcome it? | 10 |
| Q.5 | a) Explain Channel allocation problem. Explain CSMA/CD protocol. A network with CSMA/CD has 10 Mbps bandwidth and 25.6 ms maximum propagation delay. What is the minimum frame size? | 10 |
| | b) Explain Congestion control. Explain leaky bucket algorithm | 10 |
| Q.6 | Short note on (any 4) | 20 |
| | a) HDLC | |
| | b) Network Address Translation (NAT) | |
| | c) Berkeley Sockets | |
| | d) ARP | |
| | e) ICMP | |
| | f) DNS | |
| | g) SMTP | |

T.E [comp]. SEM - IV CBS453

21/05/2019



Duration : 3 Hrs

Total Marks : 80

- N.B. : 1. Question No. 1 is Compulsory.
2. Attempt any three questions, from remaining five questions.
3. Figure to the right indicates full marks

- | | | |
|------|--|----|
| Q.1. | A) Explain LAN, MAN and WAN. | 5 |
| | B) Compare various network topologies. | 5 |
| | C) Explain the purpose of Flow control and Error Control from DLL perspective. | 5 |
| | D) Explain the purpose of fragmentation of Packet and how it is done. | 5 |
| Q.2. | A) Explain OSI / ISO model with neat diagram and the functions of each layer. | 10 |
| | B) Explain the functionality of Repeater , HUB , L2-Switch and Router. | 10 |
| Q.3. | A) Explain the need for subnetting? A company is granted the site address 201.70.64.0 (class C). The company needs six subnets. Design the subnets. | 10 |
| | B) What is difference between interior gateway and exterior gateway routing ? Explain the count to infinity problem of DVR and various solutions for the same. | 10 |
| Q.4. | A) What are Berkley socket primitives? Explain in brief. | 10 |
| | B) What is error detection and correction? Explain CRC with example. | 10 |
| Q.5. | A) What is congestion control ? Explain open loop and closed loop congestion control policies. | 10 |
| | B) Explain in brief –
a) Telnet
b) TCP timers | 10 |
| Q.6. | Write Short Note on (Any four) | 20 |
| | (a) TCP segment header | |
| | (b) IPV4 vs IPV6 | |
| | (c) Go back n ARQ | |
| | (d) Design issues for various layers | |
| | (e) DNS | |

T. E, Computer, sem: II (Choice Based), 27/05/2019.

Time: 3 Hours

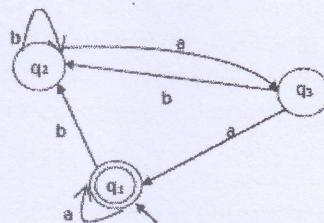
Total Marks: 80

N.B.: (1) Question No.1 is compulsory.

(2) Attempt any three questions from the remaining five questions.

(3) Make suitable assumptions wherever necessary but justify your assumptions.

1. (a) Differentiate DFA and NFA. 05
 (b) Design a DFA to accept string of 0's and 1's ending with the string 100. 05
 (c) Explain the applications of Regular Expressions. 05
 (d) What are Recursive and Recursively Enumerable Languages? 05
2. (a) Design NFA for recognizing the strings that end in "aa" over $\Sigma = \{a,b\}$ & convert 10 above NFA to DFA.
 (b) Design moore m/c for following:-
 If input ends in '101' then output should be A, if input ends in '110' output should be B, otherwise output should be C and convert it into mealy m/c. 10
3. (a) Obtain a regular expression for the FA shown below: 10



- (b) Explain the types of Turing machine in detail. 10
4. (a) Design a turing machine that computes a function $f(m,n)=m+n$ i.e. addition of two integers. 10
 (b) State and explain pumping Lemma for Context Free Languages. Find out whether 10 the language $L = \{x^n y^n z^n \mid n \geq 1\}$ is context free or not.
5. (a) Design PDA for the following language: 10

$L(M) = \{wcw^R \mid w \in \{a,b\}^*\}$ where w^R is reverse of w & c is a constant.

(b) Convert the following Grammars to the Chomsky normal form (CNF). 10

$$\begin{aligned} S &\rightarrow 0A0 \mid 1B1 \mid BB \\ A &\rightarrow C \\ B &\rightarrow S \mid A \\ C &\rightarrow S \mid \epsilon \end{aligned}$$

6. Write detailed note on (any two):- 20
 (a) Post Correspondence Problem
 (b) Halting Problem.
 (c) Rice's Theorem.

Q.P. 68476

TE computer sem 7 (choice based) 31/05/19

[Time: Three Hours]

[Total Marks: 80]



Please check whether you have got the right question paper.

- NB:
1. Question No.1 is compulsory
 2. Attempt any 3 questions from the remaining 5 questions.
 3. Draw neat diagrams wherever necessary.

Q 1	Differentiate	20
a)	Juke box and DVD	
b)	RTF and TIFF	
c)	Gray and color image	
d)	PCM and DPCM	
Q 2	a) Why the communication service quality should be good for multimedia streaming? Explain the role of RTP, RTSP, RTCP and RSVP	10
b)	For the phrase "Excellent Achievement" perform huffmann coding and generate the output. Apply decoding and convert it back to the text. Also find the redundancy in encoding.	10
Q 3	a) What are the characteristics of sound waves? Illustrate the steps to digitize audio data.	10
b)	What is the job of header in a file? Give the header details for BMP file format.	10
Q 4	a) What is Steganography? Explain any one method with an example.	10
b)	Discuss the different steps involved in MPEG compression technique. Also compare with H.261.	10
Q 5	a) What parameters define the quality of an image? Discuss these parameters and their effect on the storage requirement.	10
b)	What are the multimedia security requirements? Discuss.	10
Q 6	Write short note on(Any Two)	20
a)	Digital Signature	
b)	Authoring Systems	
c)	JPEG compression technique	