CSE IV year

(7)

(Please write your Exam Roll No.) *Exam Roll No. .....*

END TERM EXAMINATION

SEVENTH SEMESTER [B.TECH.] DECEMBER-2012

Paper Code: ETIT401	***Subject: Advance Computer Networks***
Time : 3 Hours	***Maximum Marks :75***

Note: Attempt any five questions including Q.no.1 which is compulsory.

1. (a) How big is the MAC address space, IPv4, and IPv6 address space? (2.5x10)=25
(b) Differentiate between end-to-end delay and packet jitter? Why packet jitter occurs?
(c) What is an important difference between a request-response message and a trap message in SNMP?
(d) Why a lost TCP acknowledgement does not necessarily force a retransmission?
(e) How private key is different from public key in cryptography?
(f) Why do HTTP, FTP, SMTP, and POP3 run on top of TCP rather than on UDP?
(g) Should a router give ICMP messages priority over normal traffic? Why or why not?
(h) Why is an ARP query sent within a broadcast frame? Why is an ARP response sent within a frame with a specific destination MAC address?
(i) Is it possible for an application to enjoy reliable data transfer even when the application runs over UDP? If so, how?
(j) It is said that when IPv6 tunnels through IPv4 routes, IPv6 treats the IPv4 tunnels as link-layer protocols. Do you agree with this statement? Why or why not?

2 (a) Discuss about different web documents used in Internet. (6)
(b) How Internet administration is organized? (6.5)

3 *(a) Consider a fixed subnet partition of a class B network number that will accommodate at least 76 networks. How many hosts can be on each network? (4.5)*
(b) How ARP and RARP protocols are fundamentally different? In what respect they are similar? (8)

4 (a) Suppose two routers each advertise the same cost, K, to reach a given network, N. Explain the circumstances under which forwarding through one of them may take fewer total hops than forwarding through the other one. (4.5)
(b) Compare Distance vector routing versus Path vector routing. (8)

5 (a) Why is the UDP checksum separate from the IP checksum? Would you object to a protocol that used a single checksum for the complete IP datagram including the UDP message? (4.5)
(b) How flow control and error control issues are handled in TCP protocol? (8)

6 (a) What do you mean by ciphers in cryptography? How substitution ciphers are different from Transposition ciphers? (4.5)
(b) Name the ATM layers and briefly discuss their functions. (8)

7. (a) How TFTP is different from FTP protocol? (6)
(b) How Telnet works? Discuss its mode of operation. (6.5)

8 (a) What is a VPN and why it is needed? (3.5)
(b) Write short notes on any three from followings: (3x3)
(i) ISDN (ii) BOOTP and DHCP (iii) Firewall (iv) DNS (v) ICMP (vi) IGMP

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(Please write your Exam Roll No.) Exam Roll No. .....

END TERM EXAMINATION

SEVENTH SEMESTER [B.TECH.] DECEMBER-2012

Paper Code: ETCS-403 **Subject: Advanced Computer Architecture**

Time : 3 Hours **Maximum Marks:75**

Note: Attempt any five questions.

Q.No 1	a)	Explain the UMA, COMA & NUMA multiprocessor models.	7.5
	b)	Differentiate between SISD, SIMD, MIMD and MISD architectures.	7.5
Q.No 2	a)	What are the systems attributes to performance of a computer system?	7.5
	b)	Explain five types of Data Dependence	7.5
Q. No 3		Explain Bernstein's conditions for parallelism. Consider the execution of the following code segment consisting of seven statements. Use Bernstein's conditions to detect the maximum parallelism embedded in this code. Justify the portions that can be executed in parallel and the remaining portions that must be executed sequentially.	15

P1: A = B + C
P2: C = D + E
P3: F = G + E
P4: C = A + F
P5: M = G + C
P6: A = L + C
P7: A = E + A

Q. No 4	a)	Compare CISC and RISC Architecture.	7.5
	b)	Explain static and dynamic interconnection networks.	7.5
Q. No 5	a)	What is multistage and combining network?	7.5
	b)	Explain Inclusion, coherence and locality in memory technology.	7.5
Q. No 6	a)	Discuss some cache addressing models.	7.5
	b)	What is virtual memory management? Explain some page replacement algorithms.	7.5
Q. No 7		Differentiate asynchronous with synchronous pipeline model. Give formula for calculating speedup, efficiency, throughput, optimal no. of stages for synchronous model.	15
Q. No 8		Write short notes on **any three** of the following	(3x5=1

a) Vector processing and instruction types
b) SIMD Parallel algorithms
c) Crossbar and multiport memory
d) VLIW architectures

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(Please write your Exam Roll No.) *Exam Roll No. .....*

END TERM EXAMINATION

SEVENTH SEMESTER [B.TECH.] DECEMBER-2012

Paper Code: ETEC/ETIT407 ***Subject: Mobile Computing***

Time : 3 Hours ***Maximum Marks :75***

Note: Attempt any five questions including Q.no.1 which is compulsory.

Q1 (a) What is the relationship between a Base Station and a Mobile Switching Centre? **(2)**
(b) What is the maximum number of callers in each cell in a GSM? **(2)**
(c) Mention at least four limitations/challenges that wireless LAN technology needs to overcome. **(4)**
(d) Explain the word 'Mobile Computing' and also give any suitable live example with merit of Mobile Computing. **(4)**
(e) What are Virtual Networks? **(3)**
(f) Why is the physical layer of IEEE 802.11 subdivided? **(2)**
(g) What is tunneling in Mobile IP? **(3)**
(h) Give limitations of GPRS. **(3)**
(i) What is frequency hopping? **(2)**

UNIT-I

Q2 (a) Looking at the HLR/VLR database used in GSM – how does this architecture limit the scalability in terms of users, especially moving users? **(4)**
(b) What is ciphering in GPRS? **(4)**
(c) Explain control channels of GSM. **(4.5)**

OR

Q3 (a) Explain GSM system architecture in detail. **(8)**
(b) Explain Mobility Management. **(4.5)**

UNIT-II

Q4 (a) What are the several requirements that accompanied that development of the mobile IP as a standard to enable mobility in the internet? **(8)**
(b) Describe the system architecture and protocol architecture of IEEE 802.11 with suitable diagram. **(4.5)**

OR

Q5 (a) Discuss WAP security issues. **(5)**
(b) What are the design guidelines for WAP? Explain in detail. **(7.5)**

UNIT-III

Q6 (a) What are some key advantages of WLL over a wired subscriber loop? Also, write limitations of WLL. **(6.5)**
(b) Explain WLL system Architecture. **(6)**

OR

Q7 (a) What is IMT-2000? Give 5 radio interfaces for IMT-2000. **(6)**
(b) What is CDMA 2000 technique? Explain different types of CDMA 2000 in order of increasing complexity. **(6.5)**

UNIT-IV

Q8 (a) Describe Bluetooth architecture and protocol. Also, discuss its limitations. **(10)**
(b) Give four classification of Bluetooth technology. **(2.5)**

OR

Q9 (a) Give the Globalstar specification and its features. **(5)**
(b) Write applications of Bluetooth. **(5)**
(c) What is the origin of the Bluetooth technology? **(2.5)**

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Q4. (a) Describe any two software size estimation techniques. (6)
(b) Compute the function point value for a project with the following information domain characteristics. (6.5)

Number of user inputs =44
Number of user outputs = 75
Number of user enquiries = 22
Number of internal logical files = 10
Number of external interfaces = 6
Assume that all complexity adjustment values and weighting factors are average. Explain.

Q5. (a) What are the size metrics? How is function point metric advantageous over LOC metric? Explain. (6)
(b) .List various software estimation tools. Explain any four tools in detail. (6.5)

Q6. (a) Explain all the levels of COCOMO model. Assume that the size of an organic software product has been estimated to be 43,000 lines of code. Determine the effort required to developed the software product and the nominal development time. (6)
(b) Explain the COCOMO-II in detail. What types of categories of projects are identified? (6.5)

Q7. (a) A software development requires 100 PY during the total development sub-cycle. The development time is planned for a duration of 2 years and 6 months

1. Calculate the manpower cost expended until development time (3)
2. Determine the development peak time (3)
3. Calculate the difficulty and manpower build up (3)

(b) What are IEEE standards for SRS Documents. (3.5)

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END TERM EXAMINATION

SEVENTH SEMESTER [B.TECH.] DECEMBER-2012

Paper Code: ETCS413	Subject: Requirements & Estimation Techniques
Time : 3 Hours	Maximum Marks :75

Note: Attempt five questions including Q.no.1 which is compulsory.

Q1 (a) Define software estimation. List and explain the problems with software estimation. (3)

(b) Explain the Putnam resource allocation model. What are the limitations of this model? (5)

(c) Discuss the significance and use of requirement engineering. What are the problems in the formulation of requirements? (4)

(d) What are various activities during software project planning? (4)

(e) Compare and contrast various software re uirement elicitation techniques. (4)

(f) List five desirable characteristics of a good SRS document. Also, discuss important issues that an SRS must address. (5)

Q2 (a) Explain the spiral model of software development. What are the advantages and limitations of such a model? (6)

(b) Compare and contrast various software development life cycle models. (6.5)

Q3 Consider the following Library Information System (LIS) software:

- The Librarian can create new member records by entering the member's name and address. LIS assigns a unique membership number to each new library member. The Librarian can also delete a membership by entering the membership number.
- LIS registers each book issued to a member. When a member returns a book, LIS deletes the book from the member's account and makes the book available for future issue.
- When a member returns an overdue book, the LIS software computes the penalty charge and prints a bill towards the fine payable by the member.
- A member can input either the name of a book or the name of the author of the book, and query about the availability of the book. If available, LIS displays the following: the rack number in which the book is located, the number of copies of the books available for issue and the number of copies of the book already issued out.

Draw the following using standard notations. If necessary, you can make suitable assumptions regarding the details of various features of LIS software, but you must clearly write down the assumptions you make.

1. Draw the context diagram (level 0 DFD) for the LIS software (2.5)
2. Draw the level 1 DFD for the LIS software. (2)
3. Draw use case diagram for the LIS software (2)
4. Write use case description of any two of the use cases (3)
5. Draw class diagram of the LIS software (3)

CSE VII Sem. (1)

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END TERM EXAMINATION

SEVENTH SEMESTER [B.TECH.]– DECEMBER 2010

Paper Code: ETIT401 ***Subject: Advance Computer Network***

Time : 3 Hours ***Maximum Marks :75***

Note: Attempt five questions including Q.no.1 which is compulsory.

Q1 Attempt **any five** questions of the following:- **(3x5=15)**

(a) Write short note on internet address.
(b) What is meant by domain name addressing?
(c) What is meant by frame relay?
(d) What are the advantages of X.25?
(e) What are the 3 layers of X.25?
(f) Compare ATM and frame relay.

Q2 (a) Compare message, circuit and packet switching. **(2x7.5=15)**

(b) It is required to transmit a data at a rate of 64Kbps over a 3KHz telephone channel. What is the minimum SNR required to accompolish this?

OR

(c) What signal to noise ratio is required to put T1 carrier on a 50KHz line. Give that we have carrier line has 24 multiplexcol voice signals sampled at 8 KHz and 1 bit per frame is used.

Q3 (a) Sketch the Manchester and differential Manchester encoding for the following given bit stream 0001110101. **(7.5)**

OR

(b) Calculate CRC for the frame 11010101 and generate the polynomial $=x^4+x+1$ and write the transmitted frame.

(c) A bit word 1011 is to be transmitted. Construct the even parity seven bit Hamming code for this data. **(7.5)**

OR

(d) If the 7-bit Hamming code word received by a receiver is 1011011. Assuming the even parity, state whether the received code word is correct or wrong. If wrong, locate the bit in error.

Q4 (a) What is meant by congestion in network? Explain the algorithm for congestion avoidance. **(6)**

OR

(b) Compare the performance of UDP and TCP.

(c) Draw the format of TCP header and explain each in detail. **(9)**

OR

(d) What is three way handshake techniques? Explain in neat diagram. What is silly window syndrome?

Q5 (a) Explain TCP connection management with the help of finite state machine diagram. **(10)**

(b) Explain how ARP and RARP map IP addresses onto data link layer such as Ethernet? **(5)**

OR

(c) Draw the IP header neatly and explain the function of each field. List major differences between IPV_4 and IPV_6.

Q6 Write short notes on **any five** of the following:- **(5x3=15)**

(a) DNS (b) SMTP (c) FTP
(b) SNMP (e) URL, HTTP, WAP (f) Bootstrap protocol

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END TERM EXAMINATION

SEVENTH SEMESTER [B.TECH.]- DECEMBER 2010

Paper Code: ETCS403	*Subject: Advanced Computer Architecture*
Time : 3 Hours	*Maximum Marks :75*

Note: Attempt any five questions.

Q.1 What is meant by Parallelism in uniprocessor system? Identify various mechanisms that have been developed for this purpose and describe then. **(15)**

Q2 (a) What are pipeline hazards? What are the causes of pipeline hazards? Describe briefly the hazard detection. **(7.5)**

(b) Explain software requirement for multiprocessors. **(7.5)**

Q3 (a) Differentiate between buffered and unbuffered 2x2 switches. Give their applications. **(7.5)**

(b) Explain briefly the two basic kinds of processor scheduling in multiprocessors. **(7.5)**

Q4 (a) What are the fundamental of performance measure? Explain in detail. (7.5)

(b) Describe a multiport memory without priority assignment. **(7.5)**

Q5 (a) Differentiate SISD, SIMD, MIMD, MISD Architectures. **(7.5)**

(b) Differentiate RISC and CISC computers. **(7.5)**

Q6 (a) Explain in detail the different Instruction types and Instruction Sequencing. **(7.5)**

(b) Explain different types of addressing modes with suitable examples. **(7.5)**

Q7 (a) Explain handsake protocol, depict clearly how it controls data transfer during an input operation. **(7.5)**

(b) If you have to design a processor for a mobile cellphone, what necessary steps are required? **(7.5)**

Q8 Write short notes on **any three** of the following:- **(3x5=15)**

(a) Vector Processor

(b) Bernstein's Condition

(c) Bisection Bandwidth and Network diameter

(d) Omega Network

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END TERM EXAMINATION

SEVENTH SEMESTER [B.TECH.]- DECEMBER 2010

Paper Code: ETCS405	*Subject: Compiler Construction*
Time : 3 Hours	*Maximum Marks :75*

Note: Attempt any five questions. All questions carry 15 marks each.

Q.1 (a) Define Bootstrapping and also explain the use of producing a cross compiler.
(b) What are the differences between Phases and Passes in a Compiler? Explain the function of Intermediate code generation phases with example?

Q2 (a) Check whether the grammar is LL(1) or not?
S→iEtS/iEtSeS/a
E →b
(b) Construct an Finite automata for accepting those string of 0's and 1's which contain odd number of zeros and even number of ones.

Q3 (a) Construct a DFA for the Regular-Expression b b a (a/b)*.
(b) Consider the Grammar:-
S →aSbS/bSaS/ε
Check whether the given grammar is LR(0) or not?

Q4 Write short notes on the following:-
(a) Peep-hole Optimization
(b) Data Flow Equations
(c) Left Factoring
(d) Left Recursion
(e) Symbol Table Management

Q5 (a) Give DAG for the following basic block with justification:-
X=A[I], A[J]=Y, Z=A[I]
(b) Give the classification of various Grammars with example in support of your answer.

Q6 (a) Explain the organization of Block and non-Block structured lanaguages.
(b) Explain how the error recovery is done in SLR parsers?

Q7 (a) Give the Syntax directed translation scheme for the For Loop of the C language.
(b) Generate the translation scheme for array reference and intermediate code along with parse tree for the following statement. B[I,J,K]=C[I+J, K+L, Z] where B and C is an array of 10x20x30 and 40x50x60 respectively. Assume bpw=4.

Q8 Check whether the following Grammar is LALR or not:-
S→Aa/bAc/dc/bda
A→d

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(Please write your Exam Roll No.) Exam Roll No. .....

END TERM EXAMINATION

SEVENTH SEMESTER [B.TECH.]- JANUARY 2011

Paper Code: ETEC407 **Subject: Mobile Computing**

Time : 3 Hours **Maximum Marks :75**

Note: Attempt one question from each unit. Q.1 is compulsory.

Q1 (a) Give the significant attributes of U_m Interface in GSM architecture. **(3)**
(b) Explain the role of EIR entity of a GSM Network. **(3)**
(c) What is Dynamic Host Configuration Protocol (DHCP)? Explain the role of DHCP in providing mobility services. **(4)**
(d) Compare the features of WAP with respect to HTTP. **(3)**
(e) Explain the vision of IMT-2000. **(3)**
(f) Compare GEO, MEO and LEO satellite systems. **(3)**
(g) What is ISM Band? Give the range of ISM band and its utilization in Mobile Communication Networks. **(3)**
(h) Differentiate between Hard hand off and Soft Hand off. **(3)**

UNIT-I

Q2 (a) Draw the architecture model of personal communication services and explain the role of each entity. **(7.5)**
(b) Explain the protocol architecture of GSM. **(5)**

Q3 (a) Explain the Data rate enhancement with the help of General Packet Radio Services (GPRS) Network model. What is the maximum data rate obtained by GPRS network? **(6.5)**
(b) Explain the following hand over procedures of GSM Network with mobility management aspects: **(6)**
(i) Inter MSC Handover (ii) Intra MSC Handover

UNIT-II

Q4 (a) Draw and explain the architecture of an Infrastructure based IEEE 802.11 Network. **(6.5)**
(b) How the agent can be discovered using Mobile IP? Give the overlay of Agent advertisement packet which includes mobility extension. **(6)**

Q5 (a) Explain the features of medium access and Interframe Spacing aspects of a typical wireless LAN scenario. **(6)**
(b) Explain the features of WML. **(2)**
(c) Explain how tunneling works for Mobile IP using IP-in-IP encapsulation? **(4.5)**

UNIT-III

Q6 (a) Compare WCDMA and Cdma 2000, Third Generation mobile communication technologies. **(6)**
(b) Discuss about the quality of services in 3G and mention the limitations as well. **(6.5)**

Q7 (a) Explain the different Interfaces and protocol conversion methods of Wireless Local Loop Systems. **(6)**
(b) Discuss about the Deployment Issues of Wireless Local Loop Networks. **(6.5)**

UNIT-IV

Q8 Compare the case studies of IRIDIUM and GLOBALSTAR mobile satellite systems along with features of constellation of satellite in both cases. Discuss about uplink and down link chains as well. **(12.5)**

Q9 (a) Discuss in detail about Bluetooth protocol stack. **(6.5)**
(b) Write a short note on Virtual Private Networks. **(6)**

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(Please write your Exam Roll No.) Exam Roll No. .....

END TERM EXAMINATION

SEVENTH SEMESTER [B.TECH.]– DECEMBER 2010

Paper Code: ETCS413 ***Subject: Requirement Estimation Techniques***

Time : 3 Hours ***Maximum Marks :75***

Note: Attempt one question from each unit including Q.1 which is compulsory.

Q1 (a) List any five characteristics of the Software Requirements Specification Document. **(2.5x10=25)**

(b) List various activities involved in requirement elicitation.

(c) Define Backfiring.

(d) How Mark II FPA method is more accurate than IFPUG FPA method?

(e) Explain in brief system Breakup structure to estimate LOC.

(f) How do we Estimate Projects by Analogy? Explain in brief.

(g) Define productivity in context of a software project.

(h) List any five factors that influence the productivity of a software project.

(i) Write a short note on DOORS.

(j) What is Estimate Professional? Explain in brief.

UNIT-I

Q2 (a) What is Requirement Elicitation? Explain QFD in detail. **(6.5)**

(b) Explain various stages of Soft Systems Methodology with suitable diagram. **(6)**

OR

Q3 (a) Give an outline of SRS adopted by IEEE. Illustrate with the help of an example. **(8)**

(b) Explain various steps in Change Management Process. **(4.5)**

UNIT-II

Q4 (a) Give schematic representation of the FPA method. What are various advantages and disadvantages of FPA method? **(4+4)**

(b) An application has 10 low external inputs, 12 high external outputs, 20 low internal logical files, 15 high external interface files, 12 average external inequiries and value of complexity adjustment factor is 1.10. What are the unadjusted and adjusted function point count? **(4.5)**

OR

Q5 (a) Give schematic representation of Wide Band Delphi estimation method. Explain key factors for its success. **(6+2)**

(b) Explain the need to convert size from one measure to another. **(4.5)**

UNIT-III

Q6 (a) A software development is expected to involve 8 person years of effort. **(1.5x4=6)**

(i) Calculate the number of lines of source code that can be produced.

(ii) Calculate the duration of the development.

(iii) Calculate the productivity LOC/PY.

(iv) Calculate the average manning. Use Watson-Felix Model.

(b) Explain Software Project's behaviours as given by Rayleigh. Also, calculate the peak manning and difficulty for a large scale project for which the manpower requirement is K=600PY and development time is 3 years 6 months. **(6.5)**

OR

Q7 (a) Explain Application Composition Model for estimation with the help of schematic diagram. **(8)**

(b) Discuss the procedure of validating the software estimates. **(4.5)**

UNIT-IV

Q8 (a) Explain various management activities involved in software project with the help of a schematic diagram. **(6.5)**

(b) Give features of the following software estimation tools:- **(6)**

(i) SLIM (ii) COSTAR

OR

Q9 (a) Write short notes on the following:- **(6)**

(i) COSMIC (ii) UQAM-SEMRL

(b) What is Software Life Cycle? Explain V Life Cycle model and spiral Life Cycle Model. **(6.5)**

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CSE VII

(Please write your Exam Roll No.) *Exam Roll No. .....*

END TERM EXAMINATION

SEVENTH SEMESTER [B.TECH.]– DECEMBER 2009

Paper Code: ETIT-401 ***Subject: Advanced Computer Networks***
Paper ID: 31401

Time : 3 Hours ***Maximum Marks :75***

Note: Q.No.1& 2 is compulsory. Attempt one question from each unit.

Q.1 Choose the correct or best alternative in the following: - **(1x10=10)**

(a) Cell error ratio in ATM networks means
- (i) Ratio of lost cell to transmitted cells.
- (ii) Ratio of error cells to the number of delivered cells.
- (iii) Ratio of successfully transferred cells to the total number of cell, delivered.
- (iv) Raito of mis-inserted cells to the number of delivered cells.

(b) HDLC is a _____protocol.
- (i) Character oriented (ii) Byte oriented
- (iii) Bit oriented (iv) Length oriented

(c) The primary rate interface of ISDN used in India corresponds to
- (i) 2B + D16 structure at 192 usps.
- (ii) 23B + D64 structure at 1.544 Mbps.
- (iii) 30B + D64 structure at 2.048 Mbps.
- (iv) 2B + D16 structure at 144 usps.

(d) In _____ARQ, if ACK is not received, the damaged or lost frame is retransmitted.
- (i) Stop-and-wait (ii) Go-back-N
- (iii) Selective repeat (iv) Both (i) and (ii)

(e) Class _____has the greatest number of hosts per given network address.
- (i) A (ii) B (iii) C (iv) D

(f) In routing algorithms, cost is a metric for using a link. Cost is proportional to capacity, packet delay and congestion as
- (i) Inversely, inversely, directly
- (ii) Inversely, directly, inversely
- (iii) Inversely, inversely, inversely
- (iv) Inversely, directly, directly

(g) Examples of interior gateway protocols are
- (i) IGMP and BGP (ii) BGP and OSPF
- (iii) DVMRP and RIP (iv) RIP and OSPF

(h) The address ftp. Moscow.edu correspond to
- (i) located in Russia (ii) an FTP server
- (iii) a military organization (iv) James Bond's mail drop

(i) _____is a random-access protocol.
- (i) MA (ii) Polling (iii) FDMA (iv) CDMA

(j) Which of the following is a retrieval method?
- (i) HTTP (ii) FTP (iii) TELNET (iv) All the above

Q.2
(a) Explain any two types of addresses in IPv6. **(2)**
(b) Explain four uses of UDP protocol. **(2)**
(c) What are firewalls? Firewalls are broadly divided into how many types. Name them. **(2)**
(d) Explain AALI, AAL2, AAL3, AAL5 layers in ATM. **(2)**
(e) Explain RMON. **(2)**
(f) Explain virtual private networks. **(3)**
(g) Name and explain two internetworking devices. **(2)**

P.T.O.

(Please write your Exam Roll No.) *Exam Roll No. .....*

END TERM EXAMINATION

SEVENTH SEMESTER [B.TECH.]– DECEMBER 2009

Paper Code: ETCS-403	***Subject: Advanced Computer Architecture***
Paper ID: 27403	
Time : 3 Hours	***Maximum Marks :75***

Note: Q.No.1 is compulsory. Attempt one question from each unit.

Q.1 (a) What are the different methods of increasing the speed of computers? **(4)**

(b) Characterize the architectural operations of SIMD and MIMD computers. **(4)**

(c) Explain Cache addressing models. **(4)**

(d) Explain superscalar technique. **(4)**

(e) Discuss vector processing principle. **(4)**

(f) Define coherence and locality. **(5)**

UNIT-I

Q.2 Perform a data dependencies analysis on each of the following Fortran program fragments. Show the dependence graphs among the statement with justification: - **(12.5)**

S1 : X = SIN(Y)
S2 : Z = X + W
S3 : -2.5 x W
S4 : X = COS(Z)

OR

Q.3 (a) Perform a data dependences analysis on each of the following Fortran program fragments. Show the dependence graphs among the statements with justification: **(8)**

S1 : A = B + D
S2 : C = A x 3
S3 : A = A + C
S4 : E = A/2

(b) What are the differences betweens string reduction and graph reduction machines? **(4.5)**

UNIT-II

Q.4 (a) What is the difference between a blocking switch and a non-blocking switch? Is as Omega Network block or non-blocking? **(6)**

(b) Suppose parallel issue is added to vector pipeline execution. What would be the further improvement in throughput, compared with parallel issue in a superscalar pipeline of the same degree? **(6.5)**

OR

Q.5 Prove the following properties associated with multistage Omega Networks using different-size building blocks: - **(12.5)**

(a) Prove that the number of legitimate states in a K x k switch modules equals k^k.

(b) Determine the percentage of permutations that can be realized in one pass through a 64-input Omega built with 2 x 2 switch modules.

(Please write your Exam Roll No.) *Exam Roll No. .....*

END TERM EXAMINATION

SEVENTH SEMESTER [B.TECH.]- DECEMBER 2009

Paper Code: ETCS-405 ***Subject: Complier Construction***
Paper ID: 27405

Time : 3 Hours ***Maximum Marks :75***

Note: Attempt any five questions.

Q.1 (a) Explain with example various phases of complier design? **(9)**
(b) What is a cross compiler. How is boot-strapping of a compiler done to a second machine? **(6)**

Q.2 (a) Define Ambiguity? Check whether the following Grammar is ambiguous or not? S → aSbS/bSaS/ε. **(6)**
(b) Consider the following grammar for list structures: **(9)**
S → a/∧/(T)
T → T, S/S
In the above grammar, find left most and right most derivations for (i) (a, (a, a)) (ii) (((a, a), ∧, (a)), a).

Q.3 (a) What is an Operator Grammar? Give the advantage and disadvantage of the Operator precedence technique? **(6)**
(b) Draw the parsing table for the given grammar using operator-precedence Parsing technique: - **(9)**
S → a /∧/(T)
T → T, S/S

Q.4 (a) What do you mean by a regular expression? Write some properties of a Regular Expression. Write a regular expression over ∑ = (0, 1) that represent string consisting of Odd number of 0's and Even number of 1's. **(7.5)**
(b) Compute LL(1) parsing table for the grammar? **(7.5)**
S → A
A → aB/aC/aD/Ac
B → bBC/f
S → g/ε
S → d/ε

Q.5 Translate the following assignment statement to intermediate code using array references. **(15)**
A[I,J] = B[I,J] + C[A[K,L]] + D[I+J] where A, B, C and D are array of 2x3, 4x5, 6 and 7 respectively.

Q.6 (a) Check whether the grammar is Canonical LR or not by designing on LR parser table for it? S → iSeS/iSa **(9)**
(b) Explain how the error recovery is done in LALR parsers? **(6)**

Q.7 Write short notes on: - **(3x5)**
(a) Application of DAG
(b) Data structures of symbol table
(c) Run time storage administration
(d) Explain with example folding and redundant sub-expression evaluations
(e) Difference between parse tree and syntax tree with example

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(Please write your Exam Roll No.) (1) Exam Roll No. .....

END TERM EXAMINATION

SEVENTH SEMESTER [B.TECH.]- DECEMBER 2009

Paper Code: ETEC-407 **Subject: Mobile Computing**
Paper ID: 28407

Time : 3 Hours **Maximum Marks :75**

Note: Attempt any five questions in all. Q.No.1 is compulsory. Attempt one question from each unit.

Q.1 (a) What is frequency reuse? Explain the advantages and disadvantages of frequency reuse. **(4)**
(b) Explain briefly the role of EIR in GSM system architecture. **(3)**
(c) Explain the functionality of BSS GPRS protocol. **(3)**
(d) What are the alternatives of implementing Home Agent (HA) in mobile IP? **(3)**
(e) Distinguish between Direct Sequence spread spectrum and Frequency hopping spread spectrum. **(3)**
(f) Explain QoS (Quality of Service) attributes for 3 G systems. **(3)**
(g) Explain why Geostationary Earth Orbit (GEO) satellites are not preferred for global mobile satellite systems. **(3)**
(h) What is the acronym for ISM Band? Give the range and Bandwidth of ISM Band. **(3)**

UNIT-I

Q.2 (a) How are PCS Systems different from conventional cellular systems like GSM? **(6)**
(b) Explain the multiple access techniques used in GSM. Explain physical layer attributes of GSM. **(6.5)**

Q.3 (a) Explain the system architecture model of GPRS with different network elements and interfaces and how this network functions with Conventional GSM Network. **(8.5)**
(b) Explain the following protocols with respect to GPRS. **(4)**
(i) SNDCP (Subnetwork Dependent Convergence Protocol).
(ii) GTP (GPRS Tunnelling Protocol)

UNIT-II

Q.4 (a) Why the physical layer in IEEE 802.11 is subdivided? **(4)**
(b) What are the primary goals of WAP forum efforts and how they reflected in the WAP protocol architecture? **(8.5)**

Q.5 (a) Explain minimal encapsulation method for mobile IP with diagram. **(4)**
(b) Explain the differences between IPV4 and IPV6. What are the advantages of IPV6? **(4)**
(c) Explain the 3 different parameters that define the priorities of medium access-SIFS, PIFS, DIFS. **(4.5)**

P.T.O.

(Please write your Exam Roll No.) *Exam Roll No. .....*

END TERM EXAMINATION

SEVENTH SEMESTER [B.TECH.]- DECEMBER 2009

Paper Code: ETCS-413 ***Subject: Requirements and Estimation Techniques***
Paper ID: 27413

Time : 3 Hours ***Maximum Marks :75***

Note: Q.No.1 is compulsory. Attempt one question from each unit.

(2.5x10)

Q.1 (a) List the activities in Requirements definition and Requirement management of Requirement Engineering?
(b) What are the different stages of Change Management Process?
(c) List the additional GSC's in Mark II FPA Method which are not considered in IFPUG FPA Method?
(d) Sketch a neat diagram of spiral model of software life cycle model.
(e) Define Backfiring.
(f) Give the name of tool developed by Prof Martin Shepperd for Estimation by Analogy?
(g) Give features of SLIM.
(h) What are the different parameters required to calculate UFP.
(i) How functional requirement differ from non-functional requirement?
(j) How you will calculate Productivity in Application Composition Model of COCOMO-II.

UNIT-I

Q.2 (a) Explain different Requirement Elicitation tasks. **(6)**
(b) Describe Requirement Elicitation technique developed by Peter Checkland. **(6.5)**

OR

Q.3 (a) Explain Requirement Analysis Models. **(6)**
(b) Draw a Use Case diagram of student Result Management. **(6.5)**

UNIT-II

Q.4 (a) Define Object Points, Quick FPA count and Feature Points. **(6)**
(b) How Mark II FPA is different from IFPUG technique of estimating size. **(6.5)**

OR

Q.5 (a) Discuss the procedure of counting the enhancement project function points using IFPUG's FPA method? **(6)**
(b) Calculate the Enhanced FPC with following information provided. (State assumptions of weight you made) **(6.5)**

UFP_{before}	100
UFP_{add}	23
UFP_{chg}	4
UFP_{chgb}	4
UFP_{del}	0
VAF_b	0.9
VAF_a	1.0

UNIT-III

Q.6 Explain different suites of COCOMO. **(12.5)**

OR

Q.7 (a) Explain Putnam Resource Allocation Model. **(8)**
(b) Discuss the procedure of validating the software estimates. **(4.5)**

UNIT-IV

Q.8 (a) How Management Activities are different from Engineering activities? **(4.5)**
(b) Give features of following tools: - **(8)**
(i) PQM Plus (ii) Knowledge PLAN
(iii) Vital Link (iv) XTie-RT

OR

Q.9 Write short notes on following: - **(3+3+3+3.5)**
(a) COSMIC (b) UQAM-SEMRL
(c) IEEE (d) IFPUG

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