[Total No. of Questions: *12*] **[Total No. of Printed Pages:** *2*]

UNIVERSITY OF PUNE

[4363]-258

T. E. (*ComputerEngg*) Examination - 2013

Finance & Management Information System (2008 Course)

[Time: *3* **Hours]** **[Max. Marks: 100]**

Instructions:

1 *Answer any three questions from each section.*

2 *Answers to the* ***two sections*** *should be written in* ***separate answer-books****.*

3 *Neat diagrams must be drawn wherever necessary.*

4 *Black figures to the right indicate full marks.*

5 *Assume suitable data, if necessary.*

SECTION –I

UNIT-I

Q.1	A	How management thoughts are evolved from ancient age to modern age? Explain	8
	B	What is mean by planning? What are the objectives of planning?	8
		OR	
Q.2	A	What is mean by quality? What are the primary uses of term quality in Industry?	8
	B	What is Human resource management (HRM)? State and explain the functionalities performed by HRM.	8

UNIT-II

Q. 3	A	What is meant by ratio analysis? Explain two ratio analyses with example.	8
	B	Explain various financial statements with suitable examples.	8
		OR	
Q. 4	A	What is purpose of capital investment? What is need of working capital? Explain in brief.	8
	B	Distinguish shares and Debentures. What are the characteristics of different types of share?	8

UNIT-III

Q. 5	A	What is information system? What are different types of information system in an organization?	8
	B	What is decision making? State and explain the steps involved in decision making	10

OR

Q. 6		Explain following in details	18
	i)	Management information system.	
	ii)	Business process reengineering	
	iii)	Role of analytical modeling in Decision support system.	

SECTION II

UNIT-IV

Q. 7	A	How an organization can do business in digital form? State and explain the digital model of e-business with suitable diagram.	8
	B	What is Content Management System (CMS)? How does a CMS work	8

OR

Q. 8	A	Explain the security vulnerability in electronic commerce. State and explain few security measures that can be taken against security vulnerability in e-commerce.	8
	B	What is meant by e-commerce? State and explain the different activities involved in e-commerce.	8

UNIT-V

Q. 9	A	Explain the different cultural, political and geo-economic challenges involved in global IT Management.	8
	B	What are objectives and benefits of CRM? Also explain drawbacks of CRM.	8

OR

Q. 10	A	ERP is evolved from simple accounting software to full-fledged business management system-discuss.	8
	B	Differentiate the process of BPR and BPO with suitable example.	8

UNIT-VI

Q. 11	A	How encryption is used as a tool for Security management? Explain with example.	10
	B	What is right to information act? Explain in detail.	8

OR

Q. 12	A	State and explain ethical, moral, and political issues in an information technology in reference to society.	10
	B	Enlist and explain different challenges that need to be overcome to ensure proper implementation of right to information act.	8

[Total No. of Questions: *12*] **[Total No. of Printed Pages:** *3*]

UNIVERSITY OF PUNE

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T. E. (*Computer Engineering*) (SEM II) Examination - 2013

Systems Programming and Operating Systems. (2008 Course)

[Time: *3* **Hours]** **[Max. Marks: 100]**

SECTION -I

Q.1	A	What are the tasks of analysis and synthesis phase of language translator?	4
	B	What is the difference between literal and immediate operand. How assembler handles them. Give example.	6
	C	What are the fixed and variable data structures required in the design of two pass assembler give their formats and usage.	8

OR

Q.2	A	What are the differences between macros and functions?	4
	B	Draw a flow chart for single pass macro processor to handle calls inside the definition.	8
	C	What is the use of conditional expansion of macro? Which pseudo ops are used to support conditional expansion? Give example.	6
Q. 3	A	Define relocation. How the direct linking loader handles relocation and linking?	10
	B	What are the advantages of overlay structure? Explain with example.	6

OR

Q. 4	A	Enlist the differences between .EXE and .DLL.	4
	B	Draw flow chart for pass-2 of direct linking loader.	8
	C	With respect to windows explain the terms static and dynamic binding. Discuss merits and demerits of the same.	4
Q. 5	A	Enlist basic functions of an operating system.	4
	B	Consider following set of processes	12

Process	Arrival Time	Burst Time
P1	0	3
P2	2	5
P3	3	2
P4	8	4
P5	10	5

Calculate waiting time, turnaround time for the following methods.

1) FIFO 2) SJF 3) RR with time slot of 3

OR

Q. 6	A	What are the benefits of system calls?	4
	B	Write short notes **on any Three**	12

1) Distributed OS 2) Real time scheduling

2) Multiprogramming 3) Library functions.

SECTION II

Q. 7	A	What is Mutual Exclusion? What are hardware approaches for Mutual Exclusion?	8
	B	Explain Deadlock detection approach with proper example.	8

OR

Q. 8	A	What is inter process synchronization? Write solution for Producer consumer problem using semaphores.	8
	B	What are the draw backs of monitors?	4
	C	Signals can be sent in either direction can be used to provide limited from of inter processes communication [IPC). Justify.	4
Q. 9	A	What are the advantages and disadvantages of fixed and dynamic partitioning of memory?	4
	B	Explain the usage of translation look aside buffer with the help o diagram.	8
	C	How sharing and protection is provided in a paging system.	4

OR

Q. 10	A	Explain with example first-fit, best-fit and worst fit memory allocation techniques? What are their advantages and disadvantages.	10
	B	What is segmentation how segmentation is implemented in operating system?	6
Q. 11	A	What is an I/O buffer? What is its use.	6
	B	Consider a disk system with 200 cylinders. The request to access the cylinders occur in following sequence.	12

104,135,110,117,18,84,22,115,8,20

Assume that the head is at track 50. Calculate the average seek length for the FIFO, SSTF and C-SCAN algorithm

OR

Q. 12	A	With the help of diagram explain the methods used for record blocking.	9
	B	How UNIX manages the files and directories?	9

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T. E. (Computer & IT. Semester I) Examination - 2013

Database Management Systems

(2008 Pattern)

[Total No. of Questions:] **[Total No. of Printed Pages :2]**

[Time: 3 Hours] **[Max. Marks: 100]**

Instructions:

1) *Answers to the two sections should be written in separate books.*
2) *Black figures to the right indicate full marks.*
3) *Assume suitable data if necessary.*
4) *Solve Section 1: Q1 or Q2, Q3 or Q4, Q5 or Q6*
5) *Solve Section 2: Q7 or Q8, Q9 or Q10, Q11 or Q12*

SECTION - 1

Q1 A) How Following Problems are handled with DBMS. [6]

i. Data Isolation.

ii. Data Redundancy and Inconsistency.

iii. Data Integrity

B) Explain with Example how E-R diagrams are converted into tables [6]

C) Explain the need for the following. [6]

i. View

ii. Foreign Key.

OR

Q2 A) Explain various database Languages [8]

B) Explain various Data Models used in DBMS. [10]

Q3 A) Given relation schema: R(A,B,C), S(D,E,F). Let relation r(R) and s(S) be given. Convert following SQL Statements in relational algebra form. [8]

1. Select * from r where B = 17
2. Select A,F from r,s where r.C = s.D
3. Update r, set B = B*15 where A='aaa'
4. Select * from s where E < 20

B) Explain various operators in relational Algebra. [8]

OR

Q4 A) What is cursor? Explain various types of Cursor. [8]

B) Explain Stored Procedures and Triggers. [8]

Q5 A) Explain why 4 NF is more desirable than BCNF. Rewrite the definition of 4NF and BCNF using the notions of domain constrains and general constraints.

B) Specify Armstrong's axioms. Use Armstrong's axioms to prove the soundness of pseudo transitivity rule. [8]

OR

Q6 A) Let R=(A,B,C,D,E) and let M be the following set of multivalued dependencies. [8]

A→→BC, B→→CD, E→→AD.

List the non-trivial Dependencies in M+

B) Describe the concept of transitive dependency and explain how this concept is used to define 3 NF. [8]

SECTION – 2

Q7 A) What is ordered indices? Explain the types of Ordered indices with suitable example. [9]

B) Explain detail use of B Tree as an indexing technique. Compare B Tree and B+ Tree. [9]

OR

Q8 A) Explain Following: [9]

i. Dense Index.

ii. Sparse Index.

iii. Clustered Index.

B) Give the Transformation Rules for Relational Expressions. [9]

Q9 A) Explain the concept of 'transaction'. Describe ACID properties for transaction. [8]

B) Show that two phase locking protocol ensures conflict serializability [8]

OR

Q10 A) Explain Time Stamp Based Protocol. [8]

B) State and Explain Thomas Write rule [8]

Q11 A) How does the concept of an object in the object oriented model differ from the concept of an entity in the E-R model. [8]

B) Explain the need of Backup and Replication. [8]

OR

Q12 A) What is fragment of relation? What is main types of fragments? [8]
Why a fragmentation is useful concept in distributed database design?

B) Write short note on: [8]

i) Data Warehouse Manager

ii) Pointer Swizzling Techniques

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T. E. (COMPUTER ENGINNERING) Examination 2013

DATA COMMUNICATIONS (310242)

(2008 Course)

[Total No. of Questions:] **[Total No. of Printed pages :2]**

[Time : 3 Hours] **[Max. Marks : 100]**

Instructions :

(1) Neat diagrams must be drawn wherever necessary.

(2) Assume suitable data, if necessary.

SECTION I

Q.1 a) Explain SNR, channel bandwidth and rate of communication. The power of a signal is 10mW and the power of noise is 1mW. What are the values of SNR, SNR_{dB} ? [8]

b) Explain the different frequency components present in 1kHz sine and 1kHz square waveform? [4]

c) Explain simplified communication system and mention various parts of communication system. [6]

OR

Q.2 a) An analog signal has a bit rate of 8000bps and a baud rate of 1000 baud. How many data elements are carried by each signal element? How many signal elements do we need? [6]

b) Explain QAM analog modulation technique with constellation diagram. [6]

c) Explain statistical TDM with diagram. What are issues in TDM? [6]

Q.3 a) Assume that, in a Stop-and-Wait ARQ system, the bandwidth of the line is 1Mbps and 1 bit takes 20 ms to make a round trip. What is the bandwidth-delay product? If the system data frames are 1000 bits in length, what is the utilization percentage of the link? What is the utilization percentage of the line, if we have a protocol that can send up to 15 frames before stopping and worrying about acknowledgments?

b) Explain line coding polar schemes. [8]

OR

Q.4 a) Explain pulse code modulation technique. [8]

b) Represent Binary 01001110 in NRZ-L, NRZ-I, RZ, Manchester and differential Manchester, AMI. [8]

Q.5 a) In Go-Back-N ARQ, the size of the send window must be less than 2^m and the size of the receiver window is always 1. Justify. [8]

b) Describe Shannon's theorem on channel capacity. Explain with suitable example. [8]

OR

Q.6 a) In selective repeat ARQ, size of sender and receiver window must be at most one-half of 2^m. Justify. [8]

b) At the CRC encoder if i)the data word is 1001 and divisor is 1011, find the code word and ii)the codeword is 1001 and the divisor is 110, find the dataword. [8]

SECTION II

Q.7 a) Write short notes on any three of the following. [18]

i) PSTN

ii) Frame relay

iii) ATM adaption layer

v) Cellular telephony

OR

Q.8 a) Compare different DSL technologies. Explain any one in detail. [10]

b) Explain MAC sublayer frame format in standard Ethernet. [8]

Q.9 a) Explain circuit switching and packet switching. [8]

b) Explain wave propagation and its effects on data communications with examples. [8]

OR

Q.10a) Explain the following network components [8]

i) connectors ii)repeaters iii)switches iv)Bridges

b) Explain wireless transmission waves in detail. [8]

Q.11a) How does pure ALOHA prevent congesting the channel? Explain in detail. [8]

b) What are the factors affection the window size in sliding window protocol? Explain with example. [8]

OR

Q.12a) A slotted ALOHA network transmits 200-bit frames using a shared channel with a 200-kbps bandwidth. Find the throughput if the system (all stations together) produces [8]

a) 1000 frames per second.

b) 500 frames per second.

c) 250 frames per second.

b) Describe the frame format of frame relay frame. Explain the use of FECN, BECN, DE bit. [8]

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T. E. (COMP.ENGG) Examination 2013
MICROPROCESSOR AND MICROCONTROLLER
(2008 Course)

[Total No. of Questions:12] **[Total No. of Printed pages :2]**
[Time : 3 Hours] **[Max. Marks : 100]**

Instructions :

(1) *Solve Q.1, or Q.2, Q.3 or Q.4,Q.5or Q.6,from SECTION- I and Q.7 or Q.8, Q.9 or Q.10,Q.11or Q.12 from SECTION-II*
(2) *Answers to the two Sections should be written in separate answer-books*
(3) *Neat diagram must be drawn wherever necessary.*
(4) Figures to the right indicate full marks.
(5) Assume suitable data, if necessary.

SECTION I

Q.1A) Draw and Explain Pentium architecture. [10]
B) What is TLB? Explain in detail. [6]

OR

Q.2A) Write a short note on floating point unit. [8]
B) What is branch prediction? Explain in detail. [8]

Q.3A) What happens when RESET pin is activated on Pentium? [2]
B) Explain control registers of Pentium. [12]
C) Describe following instruction. [2]
i) XADD ii) SWAPB

OR

Q.4A) Explain non pipelined and pipelined cycles. [8]
B) Explain flag register of Pentium in detail. [8]

Q.5A) How pages can be protected in Pentium? Give details [8]
B) Explain CALL GATE mechanism in Pentium processor. [6]
C) Explain significance of Granularity bit, Limit field in Segment Descriptor [4]

OR

Q.6A) How logical address is converted into physical address? [8]

B) What are privilege level protection rings in Pentium ? State the rules of accessing 1) Other data segment 2) N on confirming code segment. [6]

C) How does a system programmer selects different page size in Pentium? Give details. [4]

SECTION II

Q.7A) Compare virtual mode with real mode on the following terms: [10]

i) Privilege level ii) Interrupt handling

iii) IOPL iv) Instructions allowed to be used

B) What is TSS? What does it contain? Explain in detail how it is useful in multitasking [8]

OR

Q.8A) Differentiate between interrupt handling in real mode and protected mode of Pentium in detail. [10]

B) What is IDT? Explain various mechanisms to handle interrupts in Pentium. [8]

Q.9A) List the different addressing modes of 8051. State & explain with example any 3 addressing modes of 8051 microcontroller. [8]

B) Explain the function of following pins, [8]

i) $\overline{PSEN}$ ii)$\overline{EA}$ iii)$\overline{T_X D}$ iv)$\overline{R_X D}$

OR

Q.10A) Draw the memory map of 8051 microcontroller. Show the bit addressable internal RAM area. [8]

B) Explain the following instructions [8]

a) RETI b) AJMP c) CPL bit d) ANL direct, A

Q.11A) Draw and explain architecture of 8096 microcontroller. [8]

B) Draw and explain the format of SCON and SBUF register. Also explain the serial port programming of 8051 microcontroller. [8]

OR

Q.12A) Draw & explain internal RAM organization of 8096 microcontroller [8]

B) Describe the mode 1 and mode 2 of Timer operation in 8051. [8]

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T. E. (Computer Engineering)

Examination - 2013

DIGITAL SIGNAL PROCESSING

(2008 Pattern)

[Time : 3 Hours] **[Max. Marks : 100]**

Total No. of Questions : 12 **[Total No. of Printed Pages :3]**

Instructions :

*(1) Answer **any three** questions from each section.*

*(2) Answers to the **two sections** should be written in **separate answer-books**.*

(3) Figures to the right indicate full marks.

(4) Neat diagrams must be drawn wherever necessary.

(5) Use of logarithmic tables, slide rule, Mollier charts, electronic pocket calculator and steam tables is allowed.

(6) Assume suitable data, if necessary.

SECTION I

Q1) a) Define a dscrete time system. Explain any three properties with suitable Example [10]

b) Define a Nyquist rate. What is the nyquist rate for the analog signal [06]

x(t)= 3 cos $50\pi t$ + 10sin 300 πt – cos 100 πt

OR

Q2) a) Define a periodic signal. Determine whether or not each of the following signal is periodic. In case a signal periodic, specify its fundamental period. [10]

i) x(n) = cos $(3\pi n)$

ii) x(n) = sin (3n)

iii) x(n) = cos $(n/8)$ cos $(\pi\, n/8)$

b) State and explain the sampling theorem. [06]

Q3) a) Obtain x(n) using linear transformation matrix for X(K) = {4, 1-j, -2, 1+j} [08]

b) What is DFT? Explain periodicity property of DFT [08]

OR

Q4) a) Define Discrete Fourier Transform (DFT). Why DFT is called N-point DFT? Explain the relationship between DTFT and DFT [08]

b) Obtain DTFT & sketch the magnitude spectrum for x(n) = u(n) – u(n– 4) [08]

Q5) a) Compare DIT FFT algorithm with DIF FFT algorithm. Draw basic butterfly structure for both. [08]

b) Find Z-transform of following signal [10]

i) x(n) = $a^n u(n-1)$

ii) x(n) = $a^n u(-n-1)$

OR

Q6) a) Obtain IZT using power series method for [08]

X(z) = $\frac{1}{1-az^{-1}}$ ROC:|z| < |a|

b) Explain in place computation and bit reversal in FFT [10]

SECTION II

Q7) a) With example, explain the method of simple geometric construction to obtain the phase and frequency of DT system. [10]

b) Obtain system function for y(n) + y(n−1) = x(n) − $^1/_2$ x(n−1). Also, [06]

determine and draw a pole zero plot.

OR

Q8) a) Define and obtain a system function H(z) from an N^{th} order general difference equation. Express it for- [10]

i) All zero system

ii) All pole system

b) Explain with an example how to test the causality of a system. [06]

Q9) a) The system function of the analog filter is given as H(s) = $\frac{(s+0.1)}{(s+0.1)^2+16}$ [10]

Obtain the system function of the digital filter using bilinear transformation is resonant at $w_r = {}^{\pi}/_2$

b) What are the advantages and disadvantages of FIR filters? [08]

OR

Q10) a) Compare impulse invariance method with bilinear transformation method for IIR filter. What is frequency warping associated with BLT method? How is it compensated? [10]

b) Explain Gibbs phenomenon observed in FIR filter design. State the desirable features of window functions. [08]

Q11) a) Draw architecture diagram of ADSP 21XX processor and explain in brief the function of each block. [16]

OR

Q12) a) Obtain direct form-I and direct form-II IIR filter structure for [08]

$$y(n) - \frac{3}{4}\,y(n-1) + \frac{1}{8}\,y(n-2) = x(n) + \frac{1}{2}x(n-1)$$

b) Realize a linear phase FIR filter structure having impulse response [08]

$$h(n) = \delta(n) + \frac{1}{2}\,\delta(n-1) - \frac{1}{4}\,\delta(n-2) + \delta(n-4) + \frac{1}{2}\,\delta(n-3)$$

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T. E.(Comp. Engineering.)Examination - 2013

THEORY OF COMPUTATION

(2008 Pattern)

[Total No. of Questions:] **[Total No. of Printed Pages :5]**

[Time : 3 Hours] **[Max. Marks : 100]**

Instructions :

*(1) Answers to the **two sections** should be written in **separate answer-books**.*

(2) Assume suitable data, if necessary.

SECTION-I

Q1 a) Define the following with examples: [8]

- Kleen closure
- An alphabet
- Regular expression
- Formal language

b) Design a Moore machine that will read sequences made up of the letters A, E, I, O, U and will give as output the same sequence except in case where I directly follows an E, I will be changed to U. [8]

OR

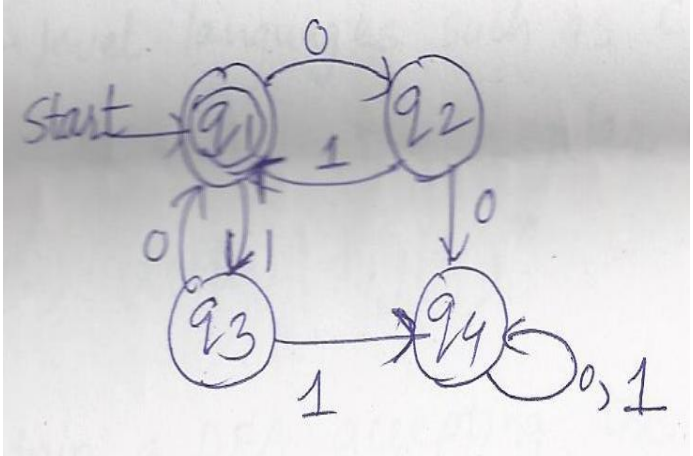
Q2 a) Design a finite automata that reads strings made up of letters in the Word ‚CHARIOT' and recognize those strings that contain the word ‚CAT' as a substring. [8]

b) Construct DFA equivalent to NFA [8]

	0	1
→P	p,q	p
q	r	r
r	s	-
Ⓢ	s	s

Q3 a) Prove that the FA whose transition graph is as shown below accepts [8]

The set of all strings over the alphabet {0,1} with an equal number Of 0's and 1's, such that each prefix has atmost one more 0 than 1's And atmost one more 1 than 0's.



b) Show that L=$\{a^p / p$ is prime$\}$ is not regular. Make use of pumping lemma and explain the steps in detail. [6]

c) Describe in English language accepted by R.E. $\Longrightarrow$ (0+1)* 0 [2]

OR

Q4 a) State and explain in detail the closure properties of regular sets [8]

b) Explain the application of regular expressions in lexical analysis phase of compiler [6]

c) State the pumping lemma for regular sets [2]

Q5 a) Convert the following CFG into CNF(Chomsky Normal Form) [6]

S⟶ABA

A⟶aA|∈

B⟶bB|∈

b) Write a CFG for generating identifiers in higher-level languages such as „C'. identifiers can be defined by the regular expression(letter). (letter 1 digit)* [4]

c) Obtain a DFA accepting the regular language defined by the following right-linear grammar [8]

S⟶OA|1B

A⟶OC|1A|0

B⟶ 1B|1A|1

C⟶0|0A

OR

Q6 a) Convert the following CFG into GNF(Greibach Normal Form) [8]

S⟶AB

A⟶BS|b

B⟶SA|a

b) Construct a grammar G to represent a language L which is a set of all palindromes over {a,b} [4]

c) Consider the grammar G given by S⟶S+S|S*S|a|b. find the derivation tree for a*b+a*b. is the grammar ambiguous [6]

SECTION-II

Q7 a) Design a PDA to check whether the given expression is a valid Postfix expression. [6]

b) Compare deterministic PDA with non-deterministic PDA [4]

c) Design a PDA for the following CFG G [6]

G= { S ⟶ aAA

A⟶bS

A⟶aS

S⟶a }

OR

Q8 a) The following PDA accepts a language: L=$\{a^n b^m a^n | m, n \geq 1\}$ [12]

Construct equivalent CFG for L such that L(G)=N(A)

A=$(\{q_0 q_1\}, \{a, b\}, \{a, z_0\}, \delta, q_0, z_0, \phi)$

Where δ is given as follows:

$\delta(q_0, q, z_0) = \{(q_0, q, z_0)\}$

$\delta(q_0, q, q) = \{(q_0, aa)\}$

$\delta(q_0, b, a) = \{(q_1, a)\}$

$\delta(q_1, a, a) = \{(q_0, €)\}$

$\delta(q_1, b, a) = \{ \delta(q_1, a)\}$

$\delta(q_1, €, z_0) = \{(q_0, €)\}$

b) Compare PDA with FA (finite automata) [4]

Q9 a) Design a turning machine which checks for the language L=$\{a^n b^n\}$ [8]

b) Define Turing machine [2]

c) Design a TM to subtract two unary numbers, the original numbers need not be retained [8]

OR

Q10 a) Design a turing machine to compute 2's complement of a given Binary number. [6]

b) Write short note on universal turing machine along with example [6]

c) Compare NFA, DFA, NPDA, DPDA, turing machines with reference to type of the grammar [6]

Q11 a) Show that if L_1 and L_2 are recursive languages, then $L_1 \cup L_2$ and $L_1 \cap L_2$ are also recursive [8]

b) Explain in detail "Post's Correspondence Problem" with the help of example [8]

OR

Q12 a) Describe in detail Chomsky Hierarchy and context-sensitive languages. [8]

b) Explain in detail the "Halting problem" [6]

c) Define undecidability [2]

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T. E.(Computer Engineering.)Examination - 2013
PRINCIPLES OF PROGRAMMING LANGUAGES(310249)
(2008 Pattern)

[Total No. of Questions:12] **[Total No. of Printed Pages :5]**
[Time : 3 Hours] **[Max. Marks : 100]**

Instructions :

*(1) Answer **any three** from each section.*
*(2) Answers to the **two sections** should be written in **separate answer-books**.*
(3) Black figures to the right indicate full marks.
(4) Neat diagrams must be drawn wherever necessary.
(5) Use of logarithmic tables, slide rule, Mollier charts, electronics pocket calculator is allowed.
(6) Assume suitable data, if necessary.

SECTION-I

Q1 i) Explain programming language paradigms. State example of each Paradigm. [8]

ii) What is type checking? Explain static and dynamic type checking [8]

OR

Q2 i) What are different parameter passing methods? Explain each in detail with suitable example. [8]

ii) How data types are classified? Explain in brief scalar data type [8]

Q3 i) What are the benefits and limitations of procedural programming Language [8]

ii) Explain the basic elements of PASCAL programming language [8]

OR

Q4 i) What is the use of local global variable in a program? With the help [8]

of sample ‘C’ program explain the concept.

ii) Explain following statements, used in Pascal [8]

a) GO TO

b) NEXT

c) ASSERT

d) CASE

e) RETURN

f) EXIT

b) Differentiate ‘C’ and Pascal with respect to variable declaration and Data types

Q5 i) Explain in detail following object oriented programming terms [8]

a) object and classes

b) inheritance

c) polymorphism

d) abstraction

ii) What do you mean by a Socket? Explain in detail various steps involved in Socket programming for client server communication in JAVA [10]

OR

Q6 i) What is an Applet? Explain the life cycle of an Applet with the help of an example [8]

ii) Write short notes on [10]

a) JDBC

b) Multithreading

c) Exception handling

d) Interfaces

SECTION-II

Q7 i) Explain the following w.r. to .NET [8]

a) JIT b) MSIL c)CTS d)BCL

ii) What is the base class of .NET framework? What are different languages supported by .NET for development? [8]

OR

Q8 i) What is significance of name space and explain it w.r. to c# [8]

ii) What is assembly and delegates in c#? explain with suitable example. [8]

Q9 For the given set of facts; find is there anything [8]

a) that Mahsa and Mary both like.

Explain with help of operation performed.

likes(Mary, food)

likes(Mary, milk)

likes(Mahsa, milk)

likes(Mahsa, mary)

b) With the help of suitable example, explain CUT operator. Why CUT operator is adopted in PROLOG? [8]

OR

Q10 i) Give the search space for the query married(john) for the given following logical statements.

1. married (John) ⟹wife(Mary, John),husband(John,Mary)
2. married (John)⟹ husband(John,Mary)
3. wife (Mary,John)
4. husband (John, Mary)

a) Give the solution applying Depth first search. [8]

b) Write and explain typical program structure of PROLOG [8]

Q11 i) Write short on [12]

i) Binding in LISP

ii) Selective Evaluation.

iii) Outermost Evaluation.

iv) Short circuit Evaluation.

ii) Explain in brief functions for [6]

i) Reading and writing trem files in LISP

ii) To find the n^{th} element of the given list in LISP

OR

Q12 i) Whether LISP supports macros and objects definition. Justify with suitable example [6]

ii) Comment on allocation and deallocation operators in LISP. [6]

iii)Write a function to find square of the give LIST [6]

ex. If L=(1,3,5,7) the result is (1,9,25,49)

University of Pune
T.E. (Computer Engg)
4363-257
Examination - 2013
Computer Networks
(2008 Pattern)

Total No. of Questions : 12 **[Total No. of Printed Pages :3]**

[Time : 3 Hours] **[Max. Marks : 100]**

Instructions :

*(1) Answer **03 question from each section.***
*(2) Answers to the **two sections** should be written in **separate answer-books**.*
(3) Figures to the right indicate full marks.
(4) Neat diagrams must be drawn whenever necessary.
(5) Assume suitable data, if necessary.

Section I

Q1. A) Compare file transfer using FTP and HTTP methods. [8]
B) What is DNS? Explain with suitable example how query resolving process is done? [8]

OR

Q2. A) What is internet? Explain protocol layers & service model in The Internet in detail. [8]
B) State and explain different protocols used for e-mail. Differentiate between IMAP, POP3 and SMTP protocol. [8]

Q3. A) Draw and explain –way handshake process of TCP [6]
B) What is socket? List and explain various socket primitives required in TCP socket program on client and server side. [6]
C) Differentiate between TCP and UDP protocol. Also comment on the applications supported by them. [6]

Or

Q4. A) Explain significance of following flags in TCP header SYN, RST, FIN, PSH [6]
B) Comment on types of ports? What is the range of port numbers used in

each type. [6]
C) Explain flow control in TCP. [6]

Q5. A) Describe in brief Integrated Services and Differentiated services. [8]
B) What is congestion? List various network parameters affected due to congestion. [8]

OR

Q6. A) Explain significance and working of RSVP protocol. [8]
B) What is QoS. Explain QoS parameters. [8]

Section II

Q7. A) An ISP is granted a block of addresses starting with 120.60.4.0/22. The ISP wants to distribute these block to 100 (one hundred) organizations with each organization receiving just 8 (Eight) addresses. Design the sub-blocks and give the Slash Notations for each sub-block. Find out how many addresses are still available after these allocations. [8]
B) Explain network layer issues in detail. [8]

OR

Q8. A) What is the significance of priority and flow label fields in IP v6. [8]
B) Explain different types of messages in ICMP v6. [8]

Q9. A) Explain working MACA and MACW protocols with neat diagram. [8]
B) Explain hierarchical routing in detail. [8]

OR

Q10. A) What are the drawbacks of Distance Vector Routing (DVR) and the solutions to recover them. [8]
B) Explain in detail OSPF protocol. [8]

Q11. A) What is the purpose of PPP? Explain with state transition diagram. [8]
B) Write a short note on any two. [10]
1. ATM
2. Switches
3. LAN bridges

OR

Q12. A) Explain Bit Oriented protocol at data link layer. [8]
B) Explain the working of MPLS with suitable diagram. [10]

[Total No. of Questions: *12*] **[Total No. of Printed Pages:** *3*]

UNIVERSITY OF PUNE

[4364]-260

T. E. (*Computer Engg.***) Examination - 2013**

Software Engineering. (2008 Course)

[Time: *3* **Hours]** **[Max. Marks: 100]**

Instructions:

1 ***Answer Q1 or Q2, Q3 or Q4, Q5 or Q6 from Section I and Q7 or Q8, Q9 or Q10, Q11 or Q12 from Section II***

2 *Answers to the* ***two sections*** *should be written in* ***separate answer-books****.*

3 *Black figures to the right indicate full marks.*

4 *Neat diagrams must be drawn wherever necessary.*

5 *Assume suitable data, if necessary.*

SECTION -I

Q.1	A	Explain the waterfall model with work products of each activity.	08
	B	What is Software Engineering? Explain the layered approach to Software Engineering.	08

OR

Q.2	A	Explain the following terms in brief. 1. Software Crisis 2. Legacy Software 3. Stakeholder 4. Software myth	08
	B	Compare the agile and evolutionary process models with a specific process model for each.	08
Q. 3	A	Create the swimlane diagram for, monitoring of sensor in a Safehome security system' from control panel.	08
	B	How use cases are used in modeling requirements?	06
	C	What are the workproducts of Elicitation?	04

OR

Q. 4	A	Explain the elements of requirements model.	08
	B	How do you model the data objects?	06
	C	Write a CRC for the class 'Email system user'.	04

Q. 5	A	Explain the following design concepts. i. Refinement ii. Modularity iii. Architecture	08
	B	Explain the elements of design model.	08
		OR	
Q. 6	A	Compare data flow and data centered architecture.	08
	B	Give the architecture context diagram for room temperature monitor system.	08

SECTION II

Q. 7	A	Explain the following. i. Smoke testing ii. Regression Testing	06
	B	Explain the debugging process.	08
	C	How do you ensure the completion of testing?	04
		OR	
Q. 8	A	Explain the graph matrix and loop testing methods.	08
	B	How Object oriented testing differs from conventional testing strategies?	06
	C	What do you mean by acceptance testing?	04
Q. 9	A	Differentiate between measure and metric. What is GQM paradigm for software measurement?	08
	B	How do you calculate FP and how it is used in estimation of a software project?	08
		OR	
Q. 10	A	Explain the role of people, process and product in project Management.	08
	B	How do you measure quality of software? Explain with any two quality metrics.	08
Q. 11	A	Explain the risk identification and assessment activities.	08
	B	How task network is used in scheduling of a software project?	08
		OR	
Q. 12	A	Explain the software configuration management process.	08
	B	Explain how do you track the progress of an object oriented project?	08