2010

MANAGEMENT INFORMATION SYSTEM

Paper : 5·1

Full Marks : 80

Time : Three hours

The figures in the margin indicate full marks for the questions.

(a) Briefly describe the systems view of business. Briefly write about MIS as a system. 4+4=8

(b) Describe the basic model of organizational structure. 8

Or

(c) Write short notes on : 2×4=8

(i) Organizational behavior

(ii) General Model of a system.

2. (b) Differentiate between: 2×4=8

(i) Open system and closed system.

(ii) Programmed decision and Non-Programmed decision.

(c) Draw the block diagram of basic Information System model with data storage. Briefly write about different sub-systems of an IS. 2+6=8

Or

(c) What do you mean by business planning ? Write your views about the importance of planning. 4+4=8

3. (a) "Conceptual design is a bad practice, as it requires lot of extra time". True *or* False ? Justify your answer. What are the important inputs to the conceptual design phase ? 4+4=8

Or

(b) Why documentation of system concept is important ? Briefly describe about the following points in the context of conceptual design.

(i) Determining information needs.

(ii) Determining information sources.

4+2+2=8

(c) What are constraints? What are its classes? Why is establishment of constraints in coneceptual design phase required? 2+4+2=8

(a) What do you mean by floor space and plan space layouts? What is cut over? 4+4=8

Or

(b) Briefly write about the importance of testing. What do you mean by maintenance? Briefly explain. 4+4=8

(c) Briefly write about the fundamental weakness and soft spots in planning during MIS development. 8

(a) What is quality control and quality assurance? How do they differ? Why are they important? 4+3+3=10

(b) Write short notes on: *(any two)*

(i) Data quality

(ii) Application quality

(iii) Any *three* conditions for Quality Assurance. 6

2010

COMPILER DESIGN

Paper : 5·2

Full Marks : 80

Time : Three hours

The figures in the margin indicate full marks for the questions

1. Describe the analysis phases of Compiler with example. 4

2. Define linker and loader. 4

3. Give transition diagram for the tokens +, ++, *, >=, <=, ==, int, for, while. 6

4. Write an algorithm for conversion of an NFA into DFA. 8

Or

Draw a DFA for regular expression $a^* b^+ (aba)$ and then minimize it.

Contd.

(a) Draw the SL tab r the gram r

$E \rightarrow E + T$

$E \rightarrow T$

$T \rightarrow T * F$

$T \rightarrow F$

$F \rightarrow (E)$

$F \rightarrow id$

(b) Eliminate the left recursion th following grammar.

$S \rightarrow A \mid B$

$A \rightarrow Aa \mid \in$

$A \rightarrow Bb \mid Sc \mid \in$

Or

Define Parser. What is a recursive descent parser ? How it is different from predictive parsing ? 1+2+2=5

(c) What is left factoring ? Is it necessary ? Eliminate left factoring from

$S \rightarrow iE * S \mid iE * SCS \mid a$

1+1+2=4

4. (a) Give syntax directed translation for boolean expression 8

(b) What is three-address-code? Why it is necessary Give its representation with an example. 2+1+4

Or

Give translation for input

$a < b$ or $c < d$ and $e < f$

(c) Draw a syntax tree for 2

$a = b * - C + b * -$

(d) Describe target code generation issue. 4

5. (a) Why DAG is desirable? Differentiate between flow graph and DAG. Give the application of DAG. 1+2+2=5

(b) Draw the DAG for 8

$((x+y)*(x-y))+((x+y)*(x-y))$

Or

What is basic block? Describe transformation of basic blocks. Explain with one example. 3+5=8

Total number of printed pages —

44 (5) DC

2010

DATA COMMUNICATION AND COMPUTER NETWORKS

Paper : 5.3

Full Marks : 80

Time : Three hours

The figures in the margin indicate full marks for the questions.

Answer any five questions.

1. (a) What are the two types of transmission technology that are in widespread use? Discuss them in brief. 3

   (b) What is bandwidth? State the Nyquist's Theorem. How Shannon carried Nyquist's work further to extend it for the case of random noise. 1+3+3 = 7

2. Explain the Electromagnetic Sprectrum and its uses for communication with proper diagram. 5

Con.

(a) What do you mean by Thick and Thin Ethernet ? Write their major specifications in a tabular form. 2+2=4

(b) Draw the IEEE 802.3 frame format and explain the various fields 2+3=5

(c) Describe the key assumptions for formulating a dynamic channel allocation method. 7

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3. (a) What is ARQ mechanism ? How does it function ? 4

(b) What is bit stuffing ? What will be the bit stream after applying the bit stuffing technique to the following bit stream

01111110001110111111 2+3=5

(c) Explain Humming code with example. 7

4. (a) Compare and contrast the Virtual Circuit and Datagram approach. 4

(b) What is IP ? What are different classes of IP address ? What is the primary service IP delivers over Internet ? 2+3+2=7

What is unacknowledged connectionless service? Is it appropriate for real-life traffic? If not, why? What do you mean by framming? 2+1+2

5. Describe how 'Connection establishment' and 'Connection release' occur in the Transport Layer with proper diagrams. 4+4=8

6. (a) What do you mean by 'Port number' and 'Socket address'? Write down the names of eight major Socket Primitives for TCP with their proper meaning. 2+2+4=8

(b) Create a Web-page using HTML which contains the following table: 6

Student's name	Course	Marks (%)	Gender
Anjan Kalita	BCA	86	M
Poonam Sarma	BSc	68	F
Mihir Kakoti	PGDCA	77	M
Moromi Sinha	BCA	31	F

7. Describe the *five* basic functions supported by any e-mail system. 5

Define DNS. What for DNS is required over the Internet ? 5

7. Write short notes on : *(any four)* 4x4=16

(a) ARP

(b) Fiber Optics Communication

(c) ICMP and its message types

(d) CSMA protocol

(e) FTP and Telnet

(f) Agents in e-mail services.
