

(Following Paper ID and Roll No. to be filled in your Answer Book)

**PAPER ID : 1305**

Roll No.

--	--	--	--	--	--	--	--	--	--

**B.Tech.**

FIRST SEMESTER EXAMINATION, 2006-07

**INFOMATION TECHNOLOGY**

Time : 3 Hours

Total Marks : 100

- Note : (i) Attempt **ALL** questions.  
 (ii) All questions carry equal marks.  
 (iii) Be precise in your answer.

1. Attempt **any two** parts of the following : (10x2=20)

- (a) (i) Differentiate between data and information giving suitable examples. Explain the various data formats.  
 (ii) Discuss entropy of information. What is its significance ?  
 (b) For the following data :

Symbol	Frequency
A	.80
B	.15
C	.05

Calculate the difference between average number of bits required for one, symbol in the Huffman's and Extended Huffman coding techniques. Also discuss which coding technique is better and why ?

(c) (i) What is LZW compression technique ? What are the advantages of LZW compression over LZ78 compression technique ? For the test string "DI\$DID\$DIDI\$DIDIA\$DIDI", show all the steps of LZW compression including dictionary formation.

(ii) Write short notes on :

(1) JPEG (2) MPEG

2. Attempt *any two* parts of the following : (10x2=20)

(a) (i) Draw the block diagram of a digital computer. Explain its each block in detail giving suitable examples.

(ii) What do you understand by Fourth Generation Languages ?

(b) Explain in detail different Testing Techniques used for testing a software.

(c) Write short notes on any three of the following :

(i) SDLC

(ii) CMM standard for IT industry

(iii) Static and Dynamic RAM

(iv) Data Flow Diagram

3. Attempt *any four* parts of the following : (5x4=20)

(a) Convert the following decimal number to equivalent binary and hexadecimal number system :

(i) 24.25 (ii) 133.15 (iii) 56

(b) What are Flip Flops ? What are the problems in SR flip-flops ? Explain by using the characteristic table of SR flip-flop.

- (c) What do you mean by digital modulation ? Explain briefly the various digital modulation techniques.
- (d) What do you understand by token based protocols ? Explain the working of any such protocol.
- (e) Give an overview of ISO OSI layers. Also discuss the basic functioning of each layer.
- (f) Write short notes on any two :
  - (i) CSMA/CD
  - (ii) Network Topology
  - (iii) Client-Server Architecture.

4. Attempt *any four* parts of the following : (5×4=20)

- (a) What is TCP/IP ? Why TCP/IP is so important for internet users ?
- (b) Explain Local Area Networking. How it is different from MAN ? Give example to support your answer.
- (c) What is data encryption ? Differentiate between public key and private key encryption.
- (d) How Business to Business E-Commerce is different from Business to Consumer E-Commerce ? Explain by giving suitable example.
- (e) What are the factors that influence the selection of an ISP (Internet Service Provider) ?
- (f) Write short notes on any two :
  - (i) Search Engines
  - (ii) WWW
  - (iii) Electronic Payment System

5. Attempt *any four* parts of the following : (5x4=20)
- (a) Differentiate between internal and external commands of DOS. Give three examples of each category.
  - (b) List the basic working of each of the following :
    - (i) MS-Word
    - (ii) MS-Excel
    - (iii) MS-Power Point
  - (c) Discuss the different levels of Data Abstraction.
  - (d) Briefly explain the different components of Data Base Management System.
  - (e) Explain the salient features of NICNET ? List other specialized and dedicated network existing in the country.
  - (f) Discuss the application of Information technology in various areas.

- o O o -