

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

PAPER ID : 1306

Roll No.

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### B.Tech.

(SEM II) EVEN SEMESTER THEORY EXAMINATION,  
2009-2010

### INFORMATION TECHNOLOGY

Time : 3 Hours

Total Marks : 100

- Note :**
- Attempt **ALL** the questions.
  - All questions carry **equal** marks.
  - Be precise in your answer.
  - No Second Answer book will be provided.

- Attempt **any four** parts of the following : (4x5=20)
  - Differentiate between data and information. Also explain various methods of information representation.
  - What do you mean by the quality and value of information ? Explain. Also define the entropy of information.
  - Explain LZW coding with suitable example.
  - What is the concept of Shannon Fano algorithm ? Explain the various steps of algorithm with example.

- (e) Explain the following :
- (i) Data Compression
  - (ii) Dynamic and static codes.
- (f) Differentiate between lossless data compression and lossy data compression. Also give the advantage of lossy data compression over lossless data compression.

2. Attempt *any two* parts of the following : (2x10=20)

- (a) (i) Draw the block diagram of the computer. Also give various components together with their functions.
- (ii) Discuss the use of RAM. Differentiate between static RAM and Dynamic RAM.
- (b) Write short note on the following :
- (i) Generation of computer languages.
  - (ii) Firmware, Hardware and Software.
  - (iii) Storage Media
  - (iv) Dataflow diagram
- (c) (i) Difference among compiler, assembler, and interpreter with example.
- (ii) Write short note on software development methodology.

3. Attempt *any two* parts of the following : (2x10=20)

- (a) (i) Explain different types of data transmission.
- (ii) Write short note on network topology.
- (b) (i) Explain amplitude modulation and frequency modulation with suitable diagrams.
- (ii) Discuss the advantages and disadvantages of client-server architecture.
- (c) (i) Convert the following :
  - (1)  $(110011.11)_2 = (\dots)_{10}$
  - (2)  $(BCA)_{16} = (\dots)_2$
  - (3)  $(3452)_8 = (\dots)_3$
  - (4)  $(66)_{10} = (\dots)_{BCD}$
  - (5)  $(775)_{10} = (\dots)_2$

4. Attempt *any two* parts of the following : (2x10=20)

- (a) (i) What do you mean by E-commerce ? Differentiate between B-to-B and B-to-C E-commerce.
- (ii) Define the following :  
FTP, WWW, Gopher, Net Surfing, ISP.
- (b) (i) Write short note on digital signature.
- (ii) Discuss the advantages and disadvantages of Electronic Payment System.

- (c) (i) Discuss the basic infrastructure of E-commerce.
  - (ii) Explain the concept of Public key and Private key in reference to network security.
5. Attempt *any two* parts of the following : (2x10=20)
- (a) (i) Explain the term Database, Database Management System, and Data Management with example.
  - (ii) Write short note on NICNET and ERNET.
  - (b) (i) What are various utilities in MS-office ? Describe their application areas.
  - (ii) Give any FIVE external DOS commands with their syntax.
  - (c) Write short notes on the following :
    - (i) Electronic governance.
    - (ii) Types and functions of Operating system.

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