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

PAPER ID : 1306   Roll No. ☐☐☐☐☐☐☐☐☐

B.Tech.

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

INFORMATION TECHNOLOGY

Time : 3 Hours   Total Marks : 100

Note :— (i)   Attempt ALL the questions.

(ii) All questions carry **equal** marks.

(iii) Be precise in your answer.

(iv) **No Second Answer book will be provided.**

1. Attempt *any four* parts of the following :   (4x5=20)

   (a) Differentiate between data and information. Also explain various methods of information representation.

   (b) What do you mean by the quality and value of information ? Explain. Also define the entropy of information.

   (c) Explain LZW coding with suitable example.

   (d) 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) $(110011.11)_2 = (...)_{10}$

(2) $(BCA)_{16} = (...)_2$

(3) $(3452)_8 = (...)_3$

(4) $(66)_{10} = (...)_{BCD}$

(5) $(775)_{10} = (...)_2$

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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