

Printed Pages—4

TIT101

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

PAPER ID : 1305

Roll No.

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**B. Tech.**

(SEM. I) ODD SEMESTER THEORY

EXAMINATION 2010-11

**INFORMATION TECHNOLOGY**

Time : 3 Hours

Total Marks : 100

- Note :** (1) Attempt all questions.  
(2) All questions carry equal marks.

1. Attempt any **four** parts of the following : **(5×4=20)**
- Define Entropy. What is its significance in Information Technology ? Explain with a suitable example.
  - Define the term information. Also discuss various characteristics of information.
  - What do you mean by data compression ? Explain different types of data compression techniques. Also give their applications to Information Technology.
  - Write short note on arithmetic coding with example.
  - Describe the various steps of JPEG that are required to convert compress an image.
  - What do you mean by extended Huffman Codes ? How it is different from Huffman coding ? Explain with example.

2. Attempt any **two** parts of the following : **(10×2=20)**
- (a) What is the role of memory in a computer system ? Describe various kinds of memory used in a computer system together with its characteristics and example.
- (b) Write short notes on the following :
- (i) Central Processing Unit
  - (ii) Capability Maturity Model (CMM)
  - (iii) Fourth generation languages
  - (iv) Firmware and humanware.
- (c) (i) Give the various symbols used in flowchart. Give a flow chart for calculating the average of the numbers from 20 to 50 (both inclusive).
- (ii) What is the difference between programming language and natural language ? Also give the various generations of the programming languages with examples.
3. Attempt any **two** parts of the following : **(10×2=20)**
- (a) (i) Explain the use of binary numbers and hexadecimal numbers in a computer system. Describe the steps of converting a floating point number to hexadecimal number with example.
- (ii) Describe the operation of a full adder together with its block diagram.

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- (b) (i) What do you mean by modulation ? Discuss various type of modulation with diagrams.
- (ii) Write a short note on mobile communication.
- (c) (i) Write a short note on token based protocol.
- (ii) Define Computer network. What are basic components of a computer network ? Also differentiate between LAN and WAN.

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

- (a) (i) How markup languages are different from other conventional programming languages ? Discuss the features of any two markup languages that you know.
- (ii) Write a short note on E-commerce.
- (b) (i) What is meant by cryptography ? Discuss the concept of public key and private keys with example.
- (ii) Define World Wide Web. Also write a short note on web technology.
- (c) (i) Write a short note on electronic data interchange (EDI).
- (ii) Discuss the FTP and Telnet protocols in brief.

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

- (a) (i) Write a short note on Electronic Governance.
- (ii) Differentiate between multiprogramming and multiprocessing with suitable example.

- (b) (i) Discuss the role of an operating system in detail.
- (ii) Write a short note on MS-Office.
- (c) Create a student database (using either dBase or Foxpro) having fields Roll\_no(numeric type), Name (alphanumeric type), Date\_of\_birth (date type), City (character type) having at least 10 records. Then give the command to perform the following :
- (i) Making correction in the name of a student whose Roll\_no is given.
- (ii) Printing the list of students Roll\_no wise.
- (iii) Sorting the records based on name.
- (iv) Delete permanently a student record for given name and date\_of\_birth.
- (v) Print the age of all the students.