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B. Tech. I-Sem. (Reback) Exam., Feb. 2013
(Common to all Branches of Engg.)
Computer Systems and Programming

Time: 3 Hours**Maximum Marks: 80****Min. Passing Marks: 24***Instructions to Candidates:*

Attempt any five questions, selecting one question from each unit. All questions carry equal marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.

Use of following supporting material is permitted during examination.

1. _____

2. _____

UNIT-I

Q.1. (a) Draw a block diagram to illustrate the basic organization of a computer system and explain the function of the various units. [8]

(b) What is secondary storage? How it differs from a primary storage? [8]

OR

Q.1. (a) What is the function of CPU in a computer System? [8]

(b) Differentiate between ROM and RAM. [4]

(c) What is an Input and output device? Explain with example. [4]

UNIT-II

- Q.2. Convert the following: [4x4]
- (a) $(101110)_2$ to its octal equivalent.
 - (b) $(2B.C4)_{16}$ to its decimal equivalent.
 - (c) $(127.54)_8$ to its decimal equivalent.
 - (d) $(5014)_{10}$ to its hexadecimal equivalent.

OR

- Q.2. (a) Explain BCD and EBCDIC codes. Write the BCD code by using binary notation for the word BASE. [8]
- (b) Multiply binary numbers 1010 and 1001 [8]

UNIT-III

- Q.3. (a) What is compiler? Why is it required? Make difference between compiler and interpreter. [8]
- (b) What is a flow chart? Write the advantage and limitations of flow chart. [8]

OR

- Q.3. (a) What is an operating system? Why it is necessary for a computer system? [8]
- (b) Draw a flow chart to calculate gross salary of an employee. The basic pay is given. DA is 0.75 of basic. HRA is 2 percent of basic. CCA is 0.010 of basic. If basic is greater than 5000, else CCA is .015 of basic
- Gross = Basic + DA + HRA + CCA [8]

UNIT-IV

Q.4. (a) Write a program to copy one string into another and count the number of characters copied. [8]

(b) Write a program to check whether the input no. is prime or not. [8]

OR

Q.4. Write a program to generate the following pattern: [8x2]

(a) A	(b) 1 0 1 0 1
BC	0 1 0 1
DEF	1 0 1
GHIJ	0 1
	1

UNIT-V

Q.5. (a) What is a structure? What are its various advantages? [8]

(b) What is pointer? What is the difference between call by value and call by reference? [8]

OR

Q.5. (a) Differentiate structure and union. [8]

(b) Write a program to read data from the keyboard and write it to a file called Input, again use the same data from the Input file, and display it on the screen. [8]

