7E7032

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B. Tech. VII Sem. (Main/Back) Exam., Nov. – Dec. - 2017
Computer Science & Engineering
7CS2A Information System Security
CS, IT

Time: 3 Hours **Maximum Marks: 80**
Min. Passing Marks: 26

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. (Mentioned in form No. 205)

1. NIL 2. NIL

UNIT-I

Q.1 (a) Explain the DES Algorithm in detail. What is the block size, cipher key size and round key size in DES? [10]

(b) Explain the various security policies, attacks, mechanism. [6]

OR

Q.1 (a) Encrypt the message "secret message" using Vigenere cipher with the key KLAS (hint: Vigenere cipher uses repetitive key stream to encrypt a message). [8]

(b) Explain the transposition ciphers and substitution ciphers in details. [8]

UNIT-II

Q.2 Construct LALR parsing table for the following grammar: - [16]

$S \rightarrow A\ A$

$A \rightarrow a\ A \mid b$

OR

Q.2 Consider the grammar and Test whether the grammar is LL (1) or Not. [16]

$S \rightarrow \mid AB \mid \in$

$A \rightarrow \mid AC \mid O\ C$

$B \rightarrow O\ S$

$C \rightarrow 1$

UNIT-III

Q.3 Generate Three Address Code for following code:-

(a) `a = b * c + b * d ;` [6]

(b) [10]

```
if ( a < b + c )
    a = a – c ;
c = b * c ;
```

OR

Q.3 Generate Three Address Code for following code:-

```
Void main ( )
{     int a ;
      a = 0 ;
while ( a < 10 ) {
      Print (a % 2 = = 0) ;
      a = a + 1;
      }
}
```

[16]

UNIT-IV

Q.4 Discuss symbol table with following subcategories:

(a) Basic operations on symbol table [5]

(b) Implementation of symbol table [8]

(c) Data structure used in symbol table [3]

OR

Q.4 Implement a symbol table with help of Hash table and functions. Also discuss how collisions are resolved in open addressing. [16]

UNIT-V

Q.5 Write short notes on following: - *[8×2=16]*

(a) Advantages of DAG

(b) Global Data Flow analysis

OR

Q.5 (a) Sources of optimization [8]

(b) Code Generation from DAG [8]
