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## EIGHTH SEMESTER

**B.E. (IT)**

**MID SEM EXAMINATION**

**March.**

**2006**

### IT-412 INFORMATION SECURITY

*Time: 1 Hour 30 Minutes*

*Max. Marks : 20*

**Note :** Answer any **FOUR** questions.  
Assume suitable missing data, if any.

- 1 Explain DES and its different modes of operations. How 2-round DES can be attacked under known plain text attack?  
5
- 2[a] What do you mean by public and private key cryptosystems? Explain the differences between them. 3
- [b] Encrypt the message "HELLO WORLD" using PLAYFAIR cryptosystem assuming that the key is "CRYPTOGRAPHY". 2
- 3 Using extended Euclid's algorithm find multiplicative inverse of 24140 modulo 40902. 5
- 4 Find the value of  
[a]  $7^{8963}$  modulo 11 using Fermat's theorem. 2
- [b]  $3^{18}$  modulo 101 by using method of repeatative exponentiation. 3
- 5 Write a short note on any TWO of the following  
[a] Field  
[b] Triple DES  
[c] Avalanche effect. 2x2.5

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### IT-413 FINANCIAL & COST MANAGEMENT

Time: 1 Hour 30 Minutes

Max. Marks : 20

**Note :** Answer **ALL** questions.  
Assume suitable missing data, if any.

- 1[a] Briefly discuss the three major decisions in Financial Management. 3
- [b] What do you understand by the objective of wealth maximization? Why profit maximization is not a sound objective for financial management? 3
- 2[a] What do you understand by the Time value of money. 3
- [b] A person needs Rs.3,00,000 after two years. If interest rate is 12% how much he should save every month to meet his needs after two years. 3
- 3[a] Write brief notes and give specimens of
- i. Balance Sheet
  - ii. Profit and loss account. 4
- [b] What do you understand by Ratio analysis and common size Statement? What type of ratios are to be considered by a bank manager giving loan of 20 lakhs for 15 years. 4

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### IT-414 ARTIFICIAL INTELLIGENCE

**Time: 1 Hour 30 Minutes**

**Max. Marks : 20**

**Note :** Answer **ALL** questions.

Assume suitable missing data, if any.

- 1 Algorithm A\* does not terminate until a goal node is selected for expansion. However, a path to a goal node might be reached long before that node is selected for expansion. Why not terminate as soon as a goal node has been found? Illustrate your answer with an example. 5
- 2 Suppose you were the interrogator in a Turing test. Compose five questions that you would ask of X and/or Y to determine which is a human and which is not. 5
- 3 Write an algorithm to perform breadth first search of a problem graph . Make sure your algorithm works properly when a single node is generated at more than one level in the graph. 5
- 4 Trace the constraint satisfaction procedure solving the following crypt-arithmetic problem  

CROSS  
ROADS  
DANGER

5
- 5 Write short notes on the following :
  - i. Heuristic function and Heuristic search
  - ii. State space search2x2.5