北京大学
PEKING UNIVERSITY

Department of Philosophy

Student ID	_____	**Section**	_____
Student Name	_____	**Semester**	Spring 2013
Student Signature	_____		
Course Code	EE210	**Academic Year**	2013
Course Title	Data Structures And Algorithms	**Time Allowed**	30 Minutes
Exam Date	April 09, 2013	**Total Marks**	15
Exam	Mid Term		
Resource Person(s)	Mr. Saleem Ata (Sec A & E), Abu Bakar Siddique (Sec B, C & D)		

DO NOT OPEN THIS EXAM UNTIL TOLD TO DO SO

The instructions below must be followed strictly. Failure to do so can result in serious grade loss. You must

- Keep your eyes on your own paper.
- Switch off your mobile phones completely.

SPECIFIC INSTRUCTIONS

- **Calculator Allowed, Closed Book, Closed Notes.**
- **No extra sheet** will be given. Use the available space wisely.
- **Use a blue or black** ball point or pen. Please do not use lead pencils.
- **Provide final answers** in the space provided.You may use back blank sheets for rough work.

Certificate to be filled at the time of exam

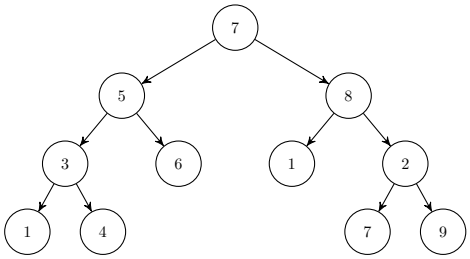
I have counted all 5 pages in this exam and no page is missing. **Student Signature**

Question:	1	2	3	4	5	6	Total
Points:	3	2	3	1	4	2	15
Score:							

Certificate to be filled during paper viewing

I have reviewed my paper and all 6 questions have been marked with no part left unmarked. Counting is also correct. **Student Signature**

1. (3 points) Write Pre-Order, In-Order and Post-Order traversals of following tree:



2. (2 points) A Binary Tree has 37 nodes. What is the minimum height of the tree that can take all of these nodes? Take height of a single node tree as 1.

What are the available "documentclass" types and their uses?

3. (3 points) Make structure of a binary tree that has following Pre-Order and In-Order traversals:

   Pre-Order: A, B, D, E, F, G, C
   In-Order: D, B, F, E, G, A, C

4. (1 point) How many comparisons would take place when finding a value in a sorted list of 1024 entries using binary search algorithm? (2 Marks)

5. (4 points) Construct binary search tree when values are inserted in following order:
   $\longrightarrow$ 9, 13, 12, 1, 7, 25, 4, 19, 3, 23, 11, 4, 27,6

6. (2 points) Starting with empty stack, what would be the contents of the stack after following operations are performed.Draw the stack after the following operations

   - Push(56)
   - Push(92)
   - Push(7)
   - Pop()
   - Push(5)
   - Pop()