Name:

Roll Number:

NATIONAL INSTITUTE OF TECHNOLOGY CALICUT

DEPARTMENT OF CHEMISTRY

Monsoon Semester, Test 1, September 2013

B. Tech. CY1001 - Chemistry

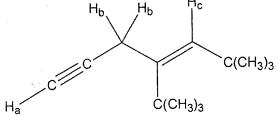
Time: 1 hour

Max. Marks: 20

Answer All Questions

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1.	Explain the following.	
	a) Phosphine is a stronger reducing agent than ammonia.	(2 Marks)
	b) B-H bonds in BH ₃ are shorter, compared to that in NaBH ₄ .	(2 Marks)
	c) p-Nitrobenzoic acid is a stronger acid than m-nitrobenzoic acid.	(2 Marks)
2.	Which is structurally stronger among C ₂ and C ₂ ²⁻ ? Explain.	(2 Marks)
3.	(1.11) (2.11) (3.11) (3.11) (4.11) (4.11) (4.11) (4.11) (4.11)	(3Marks)
4.	Sketch the Huckel molecular orbital diagram.	(3 Marks)
	$H \longrightarrow C \longrightarrow C \longrightarrow C \longrightarrow C \longrightarrow CH_2$	
5.	Predict the order of deprotonation of the labelled protons in the following mo	lecules.
	Justify.	(3 Marks)
	H_b H_b H_c	5

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- 6. With the help of VSEPR theory, predict the bond angles in the following compounds.
- 102.48

a) PCl₄⁺

b) OSF₄

c) ClF₂⁺

(3 Marks)