Project 4 FYS4150

Kjetil Karlsen

November 1, 2017

Abstract

Contents

1	Introduction	2
2	Theory	2
3	Method	2
4	Result	2
5	Discussion	2
6	Conclusion	2

1 Introduction

References

Appendix

2 Theory

No spin up	Deg	Energy	Magnetization		State	5
0	1	-8J	-4	-	0	\downarrow

No spin up	Deg	Energy	Magnetization
0	1	-8J	-4
1	4	0	-2
2	4	0	0
2	2	8J	0
3	4	0	2
4	1	-8J	4

- 3 Method
- 4 Result
- 5 Discussion
- 6 Conclusion

State	Spinn	Energi	Magnetization
0	$\downarrow \downarrow \downarrow \downarrow \downarrow$	-8J	-4
1	$\downarrow\downarrow\downarrow\uparrow\uparrow$	0	-2
2	$\downarrow\downarrow\uparrow\uparrow\downarrow$	0	-2
3	$\downarrow \uparrow \downarrow \downarrow$	0	-2
4	$\uparrow\downarrow\downarrow\downarrow$	0	-2
5	$\downarrow\downarrow\uparrow\uparrow\uparrow$	0	0
6	$\downarrow \uparrow \downarrow \uparrow$	0	0
7	$\downarrow\uparrow\uparrow\downarrow$	8J	0
8	$\uparrow\downarrow\downarrow\uparrow$	8J	0
9	$\uparrow\downarrow\uparrow\downarrow$	0	0
10	$\uparrow \uparrow \downarrow \downarrow$	0	0
11	$\downarrow\uparrow\uparrow\uparrow$	0	2
12	$\uparrow\downarrow\uparrow\uparrow$	0	2
13	$\uparrow \uparrow \downarrow \uparrow$	0	2
14	$\uparrow\uparrow\uparrow\downarrow$	0	2
15	$\uparrow\uparrow\uparrow\uparrow$	-8J	4